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57TH ANNUAL CONFERENCE

The Developmental State and Diversification of the Nigerian Economy

Proceedings of the 2016 Conference

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Introduction

The theme for this conference: The Developmental State and Diversification of the Nigerian Economy, was apt and well-crafted to approximate the thinking of the federal government of Nigeria and global viewpoint. The country's economy in recent decades has been confronted with multifaceted social and economic crises such as insurgency in the northeast, militancy in the Niger Delta, combination of inflation and unemployment and non-inclusive economic growth. More disturbing in recent times is the decline in crude oil prices, resulting in increased supply gap in the foreign exchange market, the depletion of foreign reserves and the emergence of economic recession. This perhaps explains the recent and renewed interest in developmental state and diversification of the productive base and revenues of the Nigerian economy in policy debates.

The literature strongly suggest that the developmental state has the capacity to drive the process of economic diversification. Similarly, the desirability of a developmental state, from an ideological point of view can furthermore, be anchored on the overriding imperative to fast-track the process of development through capital accumulation and industrialization. The essential elements are the ability of the state to prioritize development, develop and design effective instruments to drive economic development to the desired threshold. Instructively, there is the need for strong institutions that are effective and are capable of extracting commitments from formal and informal private individuals and corporate bodies to support state initiatives and take advantage of new and emerging opportunities for trade and profitable production. Therefore, the main objective this conference is to assemble academics of different theoretical and ideological extractions as well as policymakers to brainstorm on new initiatives for driving a developmental state and diversification.

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Conference Modalities

The activities for the 2016 Annual Conference of the Nigerian Economic Society with the theme "The Developmental State and Diversification of the Nigerian Economy" started on Monday September 26th 2016, with a

Cocktail presentation entitled 'Poverty Reduction in Nigeria over the last Decade' by Dr. Vasco Molini, Senior Economist at the World Bank. The Minister of Budget and National Planning declared the Conference opened on the 27th day of September, 2016 with Opening Remarks. The Minister expressed his profound appreciation to the Nigerian Economic Society for inviting him to the 2016 Annual Conference and submitted that the theme was indeed apt, given the historical trajectory of the country. The Minister was optimistic of the future growth path of the economy and that the problems are surmountable, noting that government is committed to restructuring the productive base of the economic via policies that promote and strengthen economic diversification. In the short-term, government would borrow to finance the deficits in the 2016 budget and was appreciative of the fact that the African Development Bank had provided the lead in this direction.

The Keynote Address was delivered by the Minister of Mines and Steel Development entitled 'Solid Minerals and Diversification of the Nigerian Economy'. In his address, the Minister noted that Nigeria is indeed blessed with diverse and abundant solid mineral resources such as Limestone, Bitumen, Coal, Nickel, Gold and many more. He added that to provide the required synergy between the national and sub-national governments and revitalize the solid mineral sub-sector, the ministry is embarking on sets of reforms. The key reforms would include engagement of Sub-national governments and communities in partnership with stakeholders, provision of geosciences information/data, promotion of access to finance, provide enabling environment, as well as technical and required managerial skills in the sector.

The President of the Society in the tradition, Professor Ben Aigbokhan delivered his Presidential Address entitled 'Multidimensional Poverty Analysis for Nigeria', under the Chairmanship of Professor Olu Ajakaiye, the immediate past President of the Society. The Conference also featured two plenary sessions and four concurrent sessions, PhD thesis award during which Professor J.C. Anyanwu, Lead Economist at the African Development Bank (AFDB) addressed the Conference. There was also a policy roundtable, entitled 'Policy options for economic

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diversification,' chaired by Mrs Zainab S. Ahmed, Hon. Minister for State, Budget and Planning, with other eminent economists as panellists. The policy roundtable provoked a number of interesting and revealing discussions.

Conference Outcomes

At the end of the conference, the following outcomes were derived:

1. Macroeconomic Policy and Diversification

Economic management has perhaps posed the strongest challenge in recent years as a result of declining oil prices, near unidirectional decline in exchange rate as well as economic recession. The current level of stagflation cannot guarantee the emergence of a diversified economy. A high inflation and interest rate environment is not conducive for economic diversification. While participants observed the need for an expansionary fiscal policy to bail the economy out of the current recession, the need for collaboration between and co-ordination of policies by the fiscal and monetary authorities was strongly emphasised.

The Conference noted that availability of infrastructure that supports the activities of manufacturing and industrialization, especially electricity at the moment falls substantially short of what is required to drive activities in the manufacturing and industrial sub-sectors. Added to this is the abysmally poor quality of roads, railways, ports and logistics, all of which constitute major impediments to manufacturing and industrial sub-sectors, thus undermining the competitiveness of the sub-sectors by imposing large transaction costs on businesses.

2. *Macroeconomic Policy and Developmental State*

Conference highlighted elements of the classic model of the developmental state to include development-oriented political leadership focused on development, ingenious and strong leadership devoid of authoritarianism, autonomous and effective bureaucracy, a production-oriented private sector that is not out to seek economic rent.

Participants at the Conference noted that national and sub-national governments can broaden the scope for the developmental state by

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developing a critical mass of professionals, competent and efficient bureaucracy, effective monitoring and implementation systems; strong research and development (R&D) and evidence-based decision making system; ability to engage in public production of goods and services; ability to allocate resources efficiently and equitably; and effective collaborative relations between the government and the private sector and providing measurable indicators of performance in the public and civil service. National and sub-national governments are encouraged to return to short-term, medium-term and long-term development plans and to institutionalize these plans in the budget process.

3. *Structure of Production and Diversification*
Conference noted that economic diversification is a long-term phenomenon that requires commitment by current and successive regimes. Conference observed too, the need to be clear about the structure and nature of diversification that the country desires, having regard to the fact the diversification is a multi-dimensional concept. In addition, there is need to alter the structure of production in favour of agriculture, manufacturing and thereafter, services. If agriculture is highly productive, it frees labour for the manufacturing sector. Furthermore, there is dire need for the country to create a strong and viable value chain in the upstream and downstream sub-sectors of the petroleum industry.

Conference observed with concern that the pattern of Nigeria's economic trajectory in which the country has moved from an agricultural and primary producing one to that in which the position of the service sector has become prominent, by-passing the manufacturing sector in the process is both undesirable and unsustainable. This is because in addition to making possible the phenomenon of hollow and jobless growth, it is non-inclusive in nature. Addressing this problem is imperative, given that the manufacturing sector has high potentials for economic diversification, value addition and transformation into high-skill and technology-intensive manufactures. In addition, the sector holds the key to employment creation that is critical to fostering inclusive growth.

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4. *Governance and the Developmental State*
Conference observed that there is need to reform the fiscal relations among the tiers of government to suit the diverse resource endowment of different sub-national governments. The new reality of low oil prices, coupled with the fact that Nigeria's non-oil revenue which stands at a paltry 4 percent of the country's GDP is one of the lowest in the world means that fiscal federalism needs to fundamentally change from how to share the common wealth in Abuja. Emphasis should, accordingly, shift to contribution by each of the sub-national governments to the central government. Amending the Constitution to make this possible was strongly recommended by participants at the Conference.

5. *The Developmental State, Service Delivery, Peace and Security*
The Conference observed that there is an over-riding imperative to strengthen the current efforts to resolve the insurgencies in the North-Eastern part of the country and to reduce activities of militants in the Niger Delta region through an honest and objective assessment of the causes of restiveness and militancy in the region, as otherwise the current effort could prove ineffective or even counterproductive. Conference also observed very strongly that there is need to strengthen governance in the oil sector. Therefore, creating the required value chain in the upstream and downstream sub-sectors of the petroleum industry is imperative. Among the menu of choices in this regard is the speedy passage into law of the Petroleum Industry Bill (PIB) which has been with the National Assembly for some twelve years now.

Altogether, whereas five papers were presented at the plenary sessions, forty eight (48) papers were slated for presentation at the concurrent sessions. Out of this number only eighteen (18) papers were published. The Conference Editorial Committee expressed profound gratitude to our numerous assessors who contributed immensely in selecting high quality papers for the Conference proceedings.

Enang Udah (PhD)
2016 Annual Conference Editor

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Plenary Session

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Implication of Islamic Finance for Nigeria's Economic Diversification through Enhanced Financial Inclusion

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Abstract

This study empirically investigated the effects of financial inclusion on diversification from the perspective of Islamic finance. The analysis focused on eight Muslim countries with established Islamic financial and banking system, seven Muslim countries with no established Islamic financial and banking system and top eight countries in term of nominal GDP using IMF 2015 data. This provided a comparative analysis of the effects of financial inclusion on diversification in each of these groups of countries. Panel regression technique was used and the Herfindahl concentration index was computed and used to measure the degree of diversification to achieve the study objective. The results revealed, among others, that the economies of the countries with established Islamic financial and banking system were less diversified, as the number of Automated Teller Machines (ATMs) per 10,000km² increased; but became more diversified as commercial bank branches per 1,000km² and other deposit takers increased; countries with no established Islamic financial and banking systems became less diversified as the number of commercial bank branches per 1,000km² increased, while they became more diversified as the number of other deposit takers rose. The study thus recommended, among others, that Nigeria should diversify its finance by utilizing Islamic financial products as viable sources of funding for sectors, such as agriculture, mining, manufacturing, and construction.

Keywords: Islamic finance, Islamic banking, diversification, Nigeria

JEL Classification: E62, G21

1. Introduction

In recent years nationally and globally, financial inclusion has been the object of discussion. Virtually all the countries (developed and developing) have been developing different strategies to include the financially excluded, because it a major way through which an economy is developed to be stable. This is through investing funds from surplus units to different aspects of the economy so as to encourage high level specialization, expertise and economies of scale. A nation whose poor and disadvantaged people are included financially will definitely not operating a monocultural economy. Thus, people will venture into different aspects of the economy, such as trading, agriculture, manufacturing, retailing and others. Small and medium enterprises are means through which a large number of people can be empowered, because they play an important role in boosting the economy, creating employment and expanding industries. However, about 200 million formal and informal micro, small and medium enterprises have no access to credit facilities (IFC 2014); others lack the appropriate risk management products and working capital. Supporting SMEs with adequate financing can lead to financial stability, which in turn leads to economic diversification. However, financial development is not necessarily economic development, eradication of poverty or a national economic expansion if the poor have no access to finance and financial services. Therefore, the target of any economy is to expand accessibility to finance by making basic financial services available to all members of the society. If this is done, it will assist in the building of an inclusive financial system. Without financial inclusion, economic diversification is a mirage.

Despite the availability of human and natural resources, such as significant uranium deposit, solid minerals, abundant arable land and a host of others, Nigeria is still faced with myriads of challenges with regards to tapping them. One of the main problems is finance. Its unavailability and inaccessibility to a large number of people have widened the disparity between the rich and poor. Conventional finance could not be of enough assistance to a large number of people who want to invest in different aspects of the economy. Hence, the country could rely largely on its oil-dependent monocultural economy, which contributes 70% of its revenues but less than 8% of its GDP. Nigeria, being the economic hub for sub-

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Saharan Africa, needs to boost SMEs so as to contribute to industrial production in the country and create a good platform for the diversification of the economy.

To source funds under conventional banking system, an investor needs to provide collateral in addition to continuous payment of interest until the capital is paid at the expiration of the contract period. This excludes those who have ideas but cannot provide funds for the realization of ideas. Financial inclusion is assumed to be achieved if a broad range of financial products are accessible to and affordable for the populace (Kama and Adigun, 2013). Financial inclusion is viewed from different perspectives by different scholars. EFInA (2014) defined financial inclusion as the provision of a broad range of high quality financial products, such as savings, credit, insurance, payments and pensions, which are relevant, appropriate and affordable for the entire adult population and especially for the low income segment. Financial inclusion is deemed to exist when there is easy access to finance, sound institutions, financial and institutional sustainability and competition between finance providers (Demirguc-Kunt et al., 2007). A large number of the populace must be covered by the financial institutions. They must not only be available but also accessible to that number of the population. Financial inclusion is the opposite of financial exclusion. Financial exclusion refers to factors that have effect of shutting out the less affluent from particular sources of credit and other financial services (Sinclair, 2000). The following key components of financial inclusion can be deduced from this definition: Financial products and services must be easily accessible to the poor and the needy without the stressful requirements of banking rules. There must also be a broad range of products from which the clients (Muslim and non-Muslim) can pick the ones that are suitable, affordable and relevant to their needs.

Consequently, some can be financially excluded from mainstream banking system based on their religious belief. For example, a provision in the Holy Quran says '...Allah has permitted trade but He has forbidden interest...' (Q2:27); hence, based on this provision on the prohibition of interest, many conscious Muslims are excluded from investing in the interest-based financial products. However, a large number of them are utilizing them reluctantly (*daruuriy*- or out of necessity). It will not be out

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of place to say that some affluent Muslims are content with accessing the conventional financial products. The belief is that they will jump on any opportunity given to them on Shari'ah compatible financial products and, thus, become financially included.

The problems created by interest-based finance are too obvious to be mentioned particularly in the last two decades. All the financial crises were largely attributed to the inability of loan users to pay as and when due the interest and capital. In spite of the efforts made by the government and the Nigerian financial system, such as the founding of people's bank and community banks (1989/1990), development of a national financial inclusion strategy of 2012 and guidelines for the regulation of agent banking to increase financial inclusion in Nigeria, a large number of the adults that are financially excluded in Nigeria stood at 39.5% (36.9 million adults) as at 2014 (EFInA, 2014). Therefore, one of the best ways to solve the problem is to diversify finance by utilizing Islamic finance as a viable source of funding for agriculture, solid minerals, manufacturing, construction, and electricity and water supply. Through redistributive instruments (Zakah, Sadaqah and Qard hasan) the idiosyncratic risks of the poor are shared by the well-to-do people. These are excellent ways of supporting SMEs that could not hitherto access financial resources from conventional banking. Zakah and Sadaqah benefit SMEs in that they charge no interest and have no repayment option; Qard hasan does not charge interest only. The three create jobs and income for poor-resource persons.

It is on record that many infrastructural projects in Malaysia, Bahrain and Saudi Arabia were financed using Islamic financial products, such as mudarabah, ijaarah, istisna' and murabahah. There are three approaches to enhancing access to financial inclusion from Islamic perspective. The focus of this paper is to empirically investigate the effect of financial inclusion on diversification, from the perspective of Islamic finance. The paper is the first to examine the influence of Islamic finance on financial inclusion and on economic diversification. The rest of the paper proceeds as follows: section two presents the background to the study, while section three provides the review of related literature. Method of analysis and model specification are presented in section four, and the empirical analysis is presented in section five. The conclusion is provided in section six.

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2. Background to the Study

The policy and measures put in place by different countries to ensure that there is an increase in financial inclusion and access have been yielding results. Based on the 2014 Global Financial Inclusion (Global Findex) database, 62% of adults in the world have an account at a bank or other financial institutions or with a mobile money provider (figure 1). This is an improvement over the 52% record of 2011. In the same vain, 700 million adults globally have accounts between 2011 and 2014, while those categorised as the unbanked, that is, those without an account, decreased by 20% to 2 billion. As regards the penetration of mobile money accounts, sub-Saharan Africa was at the forefront, having all 13 countries in the whole world, with 10% or more of mobile money accounts penetration (figure 2). In fact, Kenya had an unmatched record of 58% of the share of adults with mobile money accounts. Though still new and yet to start in many countries, the provision of mobile money accounts has been spreading widely all over the world in the past three years.

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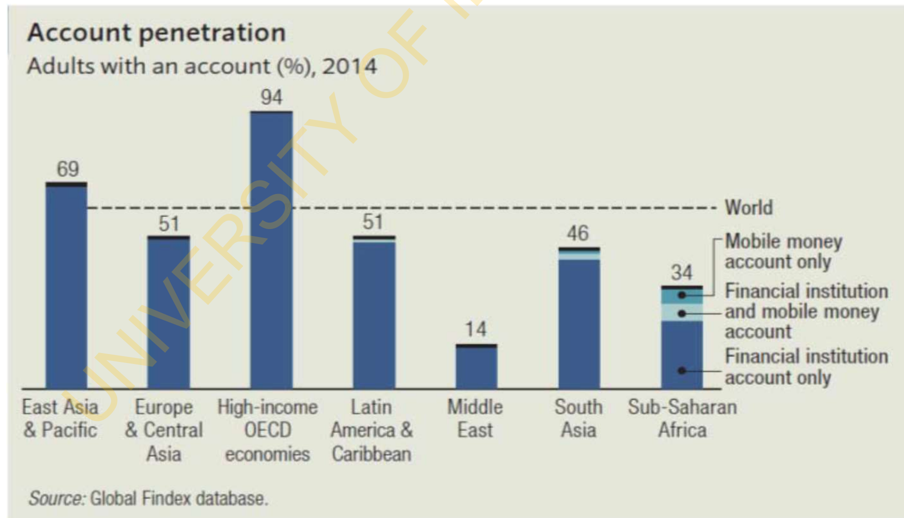

Figure 1: Account penetration

In Nigeria, the percentage of adults with an account was 44.4% in 2014, which was an improvement on the 29.7% of 2011. However, this was low, when compared to that of Kenya (74.5%), due to mobile banking

revolution in the country, and South Africa (70.3%) (Global Findex database, 2014). The implication of this is that about 55.6% of adults in Nigeria were without an account. The northern part of Nigeria (table 1) had the highest percentage of the financially excluded populace. EfInA (2016) revealed that 52.1% of 93.2 million Nigerian adult population prefer obtaining a loan from non-interest banks than from conventional banks (11.6%). Therefore, financial inclusion can be increased in Nigeria, especially in the northern parts if necessary attention is paid to non-interest banking. This can bring about a diversification of the economy, as those who would otherwise not obtain an interest-bearing loan due to religious reasons can then do so and engage in different economic activities.

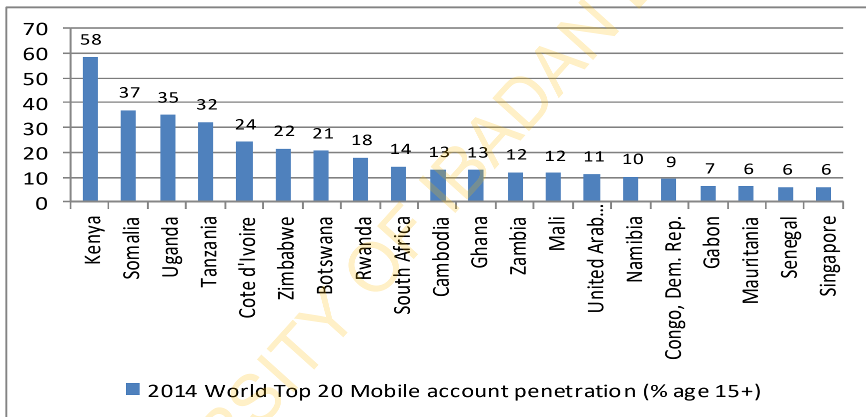

Figure 2: World top 20 countries with mobile account penetration (%), 2014
Source: Authors' computation using Global Findex database 2014

Table 1: Financial access by geo-political zone in Nigeria (%), 2008 - 2014

Year	*2008*			*2010*			*2012*			*2014*		
Region	*FI*	*IO*	*FE*	*FI*	*IO*	*FE*	*FI*	*IO*	*FE*	*FI*	*IO*	*FE*
NC	24.0	30.0	46.0	33.0	22.8	44.2	48.2	19.5	32.4	48.9	18.5	32.7
NE	17.0	23.0	60.0	20.5	11.2	68.3	25.7	14.8	59.5	26.1	5.6	68.4
NW	11.0	21.0	68.0	18.7	13.2	68.1	22.5	13.7	63.8	35.4	8.6	56.0
SE	28.0	24.0	48.0	47.4	20.7	31.9	52.0	22.4	25.6	63.3	11.3	25.4
SS	26.0	27.0	47.0	44.6	19.0	36.4	52.3	17.6	30.1	52.3	15.0	32.7
SW	35.0	20.0	45.0	49.0	17.9	33.1	57.7	17.5	24.8	62.6	12.7	24.8

Source: EFInA Access to Financial Services in Nigeria Surveys

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Trend in Nigeria's economic diversification

The Nigerian economy has been rather competitive over the years. Figure 3 shows that the highest concentration index of 31.1 was recorded for Nigeria in 1990 and this is below 100, which is an indication of low competition among the various sectors of the economy. The index continued to fall, to indicate more competition among the sectors, reaching its lowest of 26.6 in 2013.

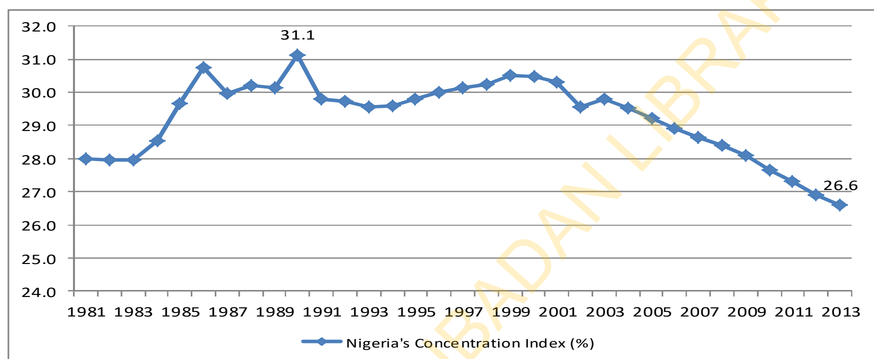

Figure 3: Nigeria's Herfindhal economic concentration index (%) (1981 – 2013)
Source: Authors' computation

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Countries in different parts of the world have put in place policies and strategies for financial inclusion and access, with Nigeria not an exception. The National Financial Inclusion Strategy (NFIS) for Nigeria was launched in October 2012 with the aim of providing private enterprises, particularly the SMES, access to affordable financial services so as to be able to play their expected role as engine of all-inclusive economic growth and development. NFIS was formulated because of the need to guarantee that a perfect agenda has been put in place to bring about an increase in both access to and use of financial services within a definite timeline, i.e. by 2020 (CBN, 2012). In terms of definition, CBN (2012) posited that there is an achievement of financial inclusion when adults have easy access to a broad range of formal financial services that meet their needs and are provided at affordable cost. This financial inclusion definition rests on easing access to financial products and services; using a full spectrum of financial products and services; designing financial products according to

need of clients; and making financial services affordable even for low-income groups. The strategy has the following objectives:

- Giving a guarantee that a specific programme is fashioned out that will bring about appreciable increases in both access to and use of financial services by 2020.
- Making sure that worries and opinions of all relevant stakeholders are put into consideration and roles and responsibilities are specified in advance of setting regulations and policies for financial inclusion.
- Increasing use of financial services from 36% of adult population to 70% by 2020 by outlining the framework needed to do so.

In line with the strategic objectives, table 2 outlines the target set for the Nigeria's NFIS. To meets these targets, the following strategies were outlined to be implemented:

- **Agent banking:** This has to do with the delivery of banking services via means like existing retail stores, petrol stations, technologies, such as point of sale (POS) devices and mobile phones, which are not traditional bank branches.
- **Mobile banking/mobile payments:** This makes financial services to be accessed via mobile phones that are either directly linked to a bank account or use mobile wallets as intermediary virtual money accounts.
- **Linkage models:** This is to foster achievement of wholesale funding and on-lending transactions by enhancing financial and business collaboration between conventional financial institutions like deposit money banks and development finance institutions or government and microfinance banks/institutions.
- **Client empowerment:** This is meant to achieve an increase in the number of population that use banks by putting in place coordinated national financial literacy initiatives with consumer protection as its compliment.

The Central Bank of Nigeria and other stakeholders intend to implement NFIS to decrease the number of Nigerians that are excluded from financial services, from 46.3% to 20.0% by 2020, as committed to in the Maya Declaration. The number of Nigerians that were included in

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the formal sector were to increase from 30.0% in 2010 to 70.0% by 2020. This goal is expected to be pursued through a broad range of coordinated interventions with high priority.

Table 2: Targets for the National Financial Inclusion Strategy

	TARGETS	2010	2015	2020
% of total adult pop.	Payments	21.6%	53%	70%
	Savings	24%	42%	60%
	Credit	2%	26%	40%
	Insurance	1%	21%	40%
	Pensions	5%	22%	40%
units per 100,000 adults	Branches	6.8	7.5	7.6
	MFB branches	2.9	4.5	5.0
	ATMs	11.8	42.8	59.6
	POS	13.3	442.6	850.0
	Mobile agents	0	31	62
% of pop.	KYC ID	18%	59%	100%

NB: KYC means 'know your customer'

The vision of FSS 2020 is to make the legal framework for Nigeria's financial services the most robust, globally competitive and market-friendly among emerging markets by 2020. Thus, in order to improve financial inclusion in Nigeria, FSS 2020 defines the stakeholders (see figure 4) as:

a. *Banks*: These are commercial banks (deposit money banks), primary mortgage institutions and microfinance banks.
b. *Other financial institutions*: These are financial institutions other than banks and include pension fund administrators, discount houses, finance companies and development finance institutions like the Bank of Industry, Bank of Agriculture, Federal Mortgage Bank and NEXIM.
c. *Insurance*: These are insurance companies, loss adjusters and insurance agents.
d. *Regulators*: These are regulatory agencies, such as Central Bank of Nigeria, National Insurance Commission, Nigerian Deposit Insurance Corporation, Nigeria Communications Commission, National Pensions Commission and National Identity Management Commission.
e. *Technology/telecommunications firms*: These are ATM service providers, e-payment/e-channel operators, settlement providers and mobile service providers. Their role is to overcome gaps via cheap

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delivery channels like mobile devices in order to increase the use of financial services by low-income and geographically distant people.

f. *Public institutions*: This concerns federal ministries of finance, education, agriculture, trade and investment, as well as agencies and programmes such as SMEDAN, NAPEP and RUFIN. This also includes NIPOST and the National Planning Commission.

g. Development partners and experts: Those that fall in this group are international finance agencies, donor institutions, development partners, technical experts and advisers. Their role is to offer technical and international support to governments and institutions.

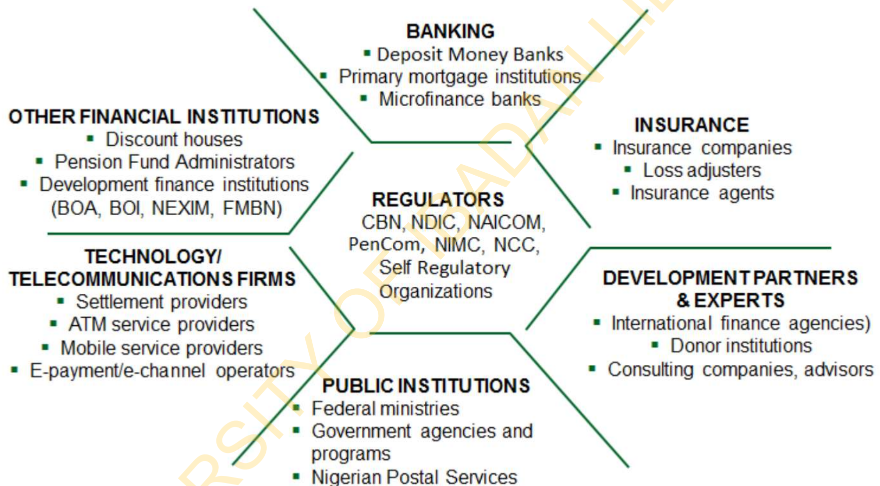

Figure 4: The stakeholders for financial inclusion

Sources: National Financial Inclusion Strategy 2012 and FSS 2020

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How Islamic finance engenders inclusion, access and diversification

Table 3 shows banking penetration and how religion is taken into consideration with respect to Islamic finance. It exposes two possible policies that are discernible. As regards the general financial inclusion policies, it is assumed that countries with appreciable level of banking penetration seem to be wealthier and, as a result, the challenge is to improve outreach in poorer countries. The hurdle that follows in the second position is how to extend the Islamic finance industry to countries where adults are financially excluded because of religious reasons. It can be

deduced from table 3 that adults in Afghanistan and Tunisia used religious reasons as barriers to financial inclusion; but this cannot be assumed for people where there is established Islamic finance industry. Consequently, if there are several Islamic finance options, as there are in Kuwait, Malaysia and Bahrain (table 3), Muslims would not give religion as barrier to accessing financial services. And as religious barriers are removed, more people become financially included and can participate in different sectors of the economy, which will lead to diversification.

Table 3: Banking account penetration and religious reason for not having an account

S/N	*Country*	*Adults with account in formal financial institutions (%)*	*Adults with no accounts due to religious reasons (%)*
1	Afghanistan	9.0	33.6
2	Bahrain	64.5	0.0
3	Bangladesh	39.6	5.5
4	Djibouti	12.3	22.8
5	Egypt	9.7	2.9
6	Indonesia	19.6	1.5
7	Kuwait	86.8	2.6
8	Malaysia	66.2	0.1
9	Nigeria	29.7	3.9
10	Pakistan	10.3	7.2
11	Qatar	65.9	11.6
12	Saudi Arabia	46.4	24.1
13	Tunisia	32.2	26.8
14	Turkey	57.3	7.9
15	UAE	59.7	2.3

Source: World Bank Global Findex (2011)

3. Review of Related Literature

The relevant theory to this study is industrial organization theory. Diversification as a term is used in industrial organisation theory; to examine if firm dominance exists, measures of concentration are commonly used in the study of industrial organisations (Siegel, Johnson and Alwang, 1995). Considering this perspective, the more competitive a firm becomes, the more diversified and preferred it is (Scherer, 1980). Therefore, as the number of sectors increase in an economy and/or economic activities are evenly distributed, economic diversification is achieved (Malizia and Ke

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1993). The related hypothesis that has been extensively subjected to tests in regional literature was postulated in relation to the works of McLaughlin (1930) and Tress (1938) (Siegel, Johnson and Alwang, 1995). Employing different measures of concentration, the hypothesis stipulates that the economic performance of a region is more stable when the economic activity of the region is varied or diverse.

Consequently, there are certain sectoral concentration measures that have been commonly used in industrial organisation studies to measure diversification. Siegel, Johnson and Alwang (1995) gave examples of these measures as: the herfindahl index, ogive index, entropy index and concentration ratios. Since there is a close relationship between the herfindahl index, ogive index and entropy index, and since their rankings of sectoral concentration among regions are justly analogous, the current study used the herfindahl index as a measure of concentration throughout. The herfindahl index is popular and serves as a measure of how market is concentrated in the area of industrial organisations (Scherer, 1980). Tauer (1992) pointed out that it is also now being used as a measure of economic diversity. The index shows the degree of dominance of a firm or a few firms in a particular country or region. The formula employed in calculating the herfindahl index is:

$$\text{Herfindahl Index} = \sum_{i=1}^{n} S_i^2 \quad (1)$$

Where S represents the share of the value of a particular activity sector in the value added GDP.

The herfindahl index ranges between 0 and 1. Zero (0) indicates high diversity and that an economy has more than one sector with small and equal shares in terms of contribution to the GDP. One (1) indicates full specialisation or low diversity, with only one sector accounting for all the economy's GDP. Consequently, when there is a fall in the index, the country is said to have greatly diversified its economy and reduced its concentration in the dominant sector. On the other hand, a rise in the index

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implies less diversification, greater specialisation or more concentration in the dominant sector.

Literature has put forward arguments on whether it is worthwhile for an economy to specialize or diversify to enhance economic development. While some considered the role of economic specialization as critical element of economic development, as derived from the theory of comparative advantage (Ricardo, 1971; Ruffin, 2002; Hausmann and Rodrik, 2003; Krugman and Obstfeld, 2006), others have argued that economic diversification can make a country less vulnerable to negative economic shocks (Prebisch, 1950; Singer, 1950; Kuznets, 1971; Grossman and Helpman, 1992; Ramey and Ramey, 1995; Osakwe, 2007). However, Imbs and Wacziarg (2003) have shown that both trends (specialization and diversification) take place but at different economic stages of the economic growth process. In other words, acquisition of skills and necessary knowledge can assist low-income countries to diversify their economic portfolios instead of specializing on what they have comparative advantage on. This was also confirmed by Kaulich (2012), who identified a positive relation between diversification of an economy and low levels of income per capita. It was concluded that since diversification is noted for driving economic development for low-income countries, policies that promote economic diversification should be designed and implemented.

Many research have also noted the linkage between financial inclusion and economic development and diversification. Financial inclusion is one of the major conditions for financial development that can herald economic growth which, in turn, can lead to economic diversification. In fact, it is effective in terms of alleviating poverty and promoting economic growth (Karl and Yunus, 2007). Hariharan and Marktanner (2013) estimated the impact of financial inclusion on economic growth within the framework of a simple Solow growth model. Their preliminary results indicated that a 10% increase in financial inclusion has the potential to increase income per worker on the average by 1.34%. Hindrance to financial inclusion was found to be due to religion, economic inequality, culture, geography and structure of the economy, among other factors. If a large number of people in a country have access to loans, deposit services, insurance, pension, and financial literacy, the authors concluded that financial inclusion would

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promote growth and economic development. Financial inclusion has the potential to boost the savings portfolios of the financial sector, enhance efficiency of intermediation and encourage entrepreneurial activities that can lead to economic growth. Subair (2009) stated that a broad-based financial inclusion strategy is needed before any economy can move from an agrarian system to a post-industrial society.

Babajide et al. (2015) investigated the impact of financial inclusion on economic growth in Nigeria and found that it significantly determined the total factors of production and capital per worker, which in turn determine the final level of output in the economy. They therefore recommended that the alternative means of diversification of Nigeria's oil-dependent monocultural economy is to harness the country's natural and economic resources. Furthermore, using simple model to show the impact of financial inclusion on monetary policy in Nigeria between 1980 and 2012, Mbutor and Uba (2013) found that growing financial inclusion improves the effectiveness of monetary policy. They, however, found that, in opening branches, banks mainly pursue profits at the expense of the key policy objective, which is financial inclusion. Hence, there are clusters of branches which are underutilized, while a few branches are in numerous locations considered not favourable for the balance sheets. Reduction of informal financial institutions is possible where financial inclusion is effective and efficient. (Sarma and Pais, 2010). Today, a large number of informal financial institutions are considered as exploiters.

Mirakhor and Iqbal (2012) argued that Islamic finance can enhance financial inclusion. One point emphasized in their work was the replication of conventional modes of enhancing financial inclusion through risk-sharing and risk diversification – the features of Islamic finance. Sami et al. (2015) analysed the relationship between the development of Islamic banking and financial inclusion in Muslim countries. They found a mixed picture of Islamic banking and financial inclusion: that financial inclusion in Organisation of Islamic Countries (OIC) was less than that for the rest of the world—that religious self-exclusion accounted for this low level in the area of financial inclusion; they also found that the countries reached high level of inclusion due to the presence of some Islamic banks. Both theoretically and empirically, zakah has been found to alleviate poverty.

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Shiraz and Fuad (2010) estimated the zakah collection of OIC member countries and found that it is sufficient to cover the estimated shortfall in the poverty gap, and that 20 of the 39 OIC members can alleviate the poor living condition of under $1.25 per day with zakah proceeds. Kazeem (2007) reported that there are 1229 QH funds in Iran to assist the less able people in the country. It was also reported that out of the total deposit of $227 million QH funds, $169 million was given to the poor as loans. It is interesting to note that 60% of the borrowers had paid back 60% of these loans. Nigerian Muslims and non-Muslims can emulate Iran in the use of this product by establishing an institution to take care of this neglected opportunity. It can be used to give the poor both consumer and producer loans. Low administrative costs can be charged to manage the funds. Financial inclusion encourages investments, reduces income inequality and alleviates poverty (Demirguc-Kunt et al., 2007). The availability of Sharia compliant financial product would enhance financial inclusion particularly in Muslim-dominated areas, because the barrier of interest prohibition would be removed.

4. Method of Analysis and Model Specification

This study made use of secondary data from 2004 to 2014. To compare how financial inclusion influences economic diversification, it used three groups of countries: Muslim-dominant countries with established Islamic financial and banking system; Muslim-dominant countries with no established Islamic financial and banking system; and top eight countries in the world in term of nominal GDP that profess no particular religious ideology. A country with about 10% or less people with religious reasons for being financially excluded is regarded as a country with an established Islamic financial and banking system, while a country with more than 10% is categorised as that with no established Islamic financial and banking system.

Consequently, ten (10) Muslim countries (Bahrain, Bangladesh, Egypt, Indonesia, Kuwait, Malaysia, Nigeria, Pakistan, Turkey and United Arab Emirates) with established Islamic financial and banking systems and five (5) Muslim countries (Afghanistan, Djibouti, Qatar, Saudi Arabia and Tunisia) with no established Islamic financial and banking systems were

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selected. However, due to paucity of data for Bahrain and Kuwait, only 8 of the 10 Muslim countries with established Islamic financial and banking systems were considered in the panel regression. Besides, data were not available for Djibouti, so only 4 of the 5 Muslim countries with no established Islamic financial and banking systems were used. To increase the data in order to have robust panel estimations, three other Muslim countries (Lebanon, Oman and Sudan) were included from the Middle East and North Africa (MENA). This inclusion allowed made the number of Muslim countries with no established Islamic financial and banking systems to seven (7). Initially, the study had wanted to use top 10 countries with nominal GDP using IMF 2015 data, but due to paucity of data, it had only 8 (Brazil, China, France, Germany, India, Ital, United Kingdom and United States of America).

As suggested in the literature, variables of financial inclusion include number of bank branches per 10,000km^2, number of automated teller machines (ATMs) per 1,000km^2, and access to credit (Onaolapo, 2015). However, this study used number of commercial bank branches per 1,000km^2, number of ATMs per 1,000km^2 and 'other deposit takers' as measures of financial inclusion. The data were sourced from IMF Financial Inclusion Statistics of 2015. The study calculated herfindahl concentration index for each country using value added figures of three activity sectors: agriculture, industry and services. Data for the three activity sectors were obtained from the World Development Indicators (WDI) of 2016.

The study adopted a panel regression model to examine the implication of financial inclusion on economic growth. Considering that the model had just one dependent variable, it was stated as:

$$Y_{it} = a + BX_{it} + \varepsilon it \quad (2)$$

The implication of coefficients *a* and *B* in equation 2 is that both of them are unchanged for all units and for all years. If it a change is assumed in constant *a*, which implies some level of heterogeneity in the simple panel model, equation one becomes:

$$Y_{it} = a_i + \delta X_{it} + \varepsilon it \quad (3)$$

Where a_i implies that there were some differences in how the economies studied behaved.

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Consequently, three panel models were estimated to examine the impact of financial inclusion on diversification for each group of countries. For countries with established Islamic financial and banking system, it was:

$$ESTDIVER_{it} = \beta_0 + \beta_1 ESTCOMM_{it} + \beta_2 ESTATMS_{it} + \beta_3 ESTODT_{it} + \varepsilon_{it} \qquad (4)$$

Where:

β_0 = a constant and $\beta_1 \ldots \beta_3$ = coefficients of the respective independent variables
ESTDIVER = Herfindal economic diversification index
ESTCOMM = Commercial bank branches per 1,000 km^2
ESTATMS = Number of ATMs per 1,000 km^2
ESTODT = Other Deposit Takers and $est\varepsilon_{it}$ is the error term.
ε = Disturbance term

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For countries with no established Islamic financial and banking systems, the model was:

$$NDIVER_{it} = \delta_0 + \delta_1 NCOMM_{it} + \delta_2 NATMS_{it} + \delta_3 NODT_{it} + \mu_{it} \qquad (5)$$

Where:

δ_0 = a constant and $\delta_1 \ldots \delta_3$ = coefficients of the respective independent variables
NDIVER = Herfindal economic diversification index
NCOMM = Commercial bank branches per 1,000 km^2
NATMS = Number of ATMs per 1,000 km^2
NODT = Other Deposit Takers and $est\varepsilon_{it}$ is the error term.
μ = Disturbance term

For the top 8 countries of the world in terms of nominal GDP, it was:

$$TDIVER_{it} = \lambda_0 + \lambda_1 TCOMM_{it} + \lambda_2 TATMS_{it} + \lambda_3 TODT_{it} + \upsilon_{it} \qquad (6)$$

Where:

λ_0 = a constant and $\lambda_1 \ldots \lambda_3$ = coefficients of respective independent variables
NDIVER = Herfindal economic diversification index
NCOMM = Commercial bank branches per 1,000 km^2
NATMS = Number of ATMs per 1,000 km^2

NODT = Other Deposit Takers and estε_{it} is the error term.
υ = Disturbance term

5. Empirical Analysis

Efforts by government to boost financial inclusion

The various efforts of the Nigerian government and its agencies to enhance financial inclusion include:

a. Adoption of the rural banking programme of 1977-1983, where it was expected of a bank to have a branch in each local government area to provide platform for the mobilization of savings in the rural areas. Poor performance of this programme was attributed to shortage of infrastructures and banks constrained by inadequate financial and human resources.
b. Introduction of guidelines which prescribed minimum level of lending to small-scale enterprises and loans extended in rural areas
c. The founding of people's bank and facilitating the establishment of community banks (1989/1990)
d. Creation of specific institutional initiatives to promote funding and growth of small and medium-scale enterprises and small business such as NERFUND (National Economics Reconstruction Fund) and FEAP (Family Economic Advancement Programme)
e. Financial System Strategy 2020 (FSS 2020)
f. Regulatory Framework for mobile payment services in Nigeria (2009)
g. Revised microfinance policy framework for Nigeria (2011)
h. Guidelines for regulation and supervision of institutions offering non-interest financial services in Nigeria (2011)
i. Introduction of e-banking products (ATMs, POS, mobile money and SMS banking), electronic payment system and cashless policy (2012)
j. Promotion of financial literacy campaign by introducing a framework for national financial literacy in Nigeria (2012)
k. National financial inclusion strategy (2012)
l. Introduction of tiered KYC regime (2013) which makes it easy to open and operate an account with minimal requirements.
m. Guidelines for the regulation of agent banking and agent banking relationship in Nigeria (2013)

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n. Streamlining of transaction charges to achieve customer friendly and efficient charge regime by introducing revised guide to bank charges 2013

o. Improving confidence in the cheque clearing system and integrity in the market by strengthening and implementing laws against issuance of dude cheque.

In spite of the above, however, a number of Nigerian adults that are financial excluded in Nigeria stood at 39.5% (36.9 million adults) (see figure 5) as at 2014 (EFInA survey 2014).

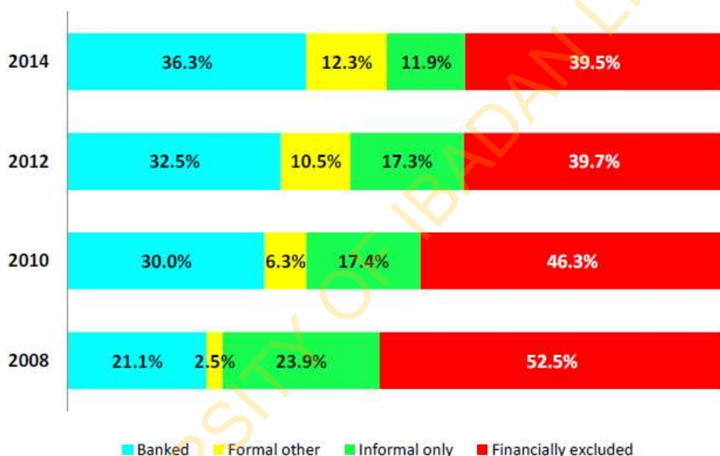

Figure 5: Nigeria financial access strand (2008-2014)

Source: EFInA access to financial services in Nigeria 2008/2010/2012/2014 surveys

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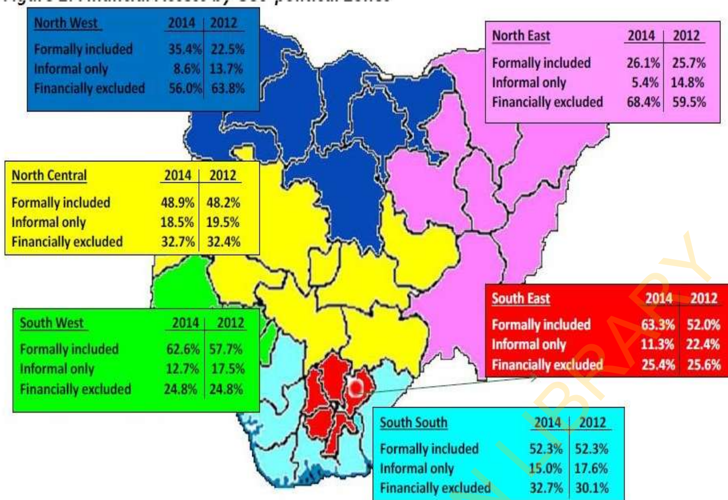

Figure 6: Financial access by geopolitical zones
Source: EFInA access to financial services in Nigeria 2012/2014 surveys

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Demand for Islamic Microfinance

The demand for Sharia compliant financial products was high, despite the establishment of Islamic microfinance services and other Islamic financial institutions in MENA, as people did not patronize conventional financial institutions. The contribution of MFI deposits (0.61%) and loans (0.79%) to GDP was lower in OIC than developing countries, with the deposit and loans of 0.78% and 0.9% respectively. It was also lower in low-income countries, with 0.92% and 1.19% in the two areas mentioned respectively. According to the World Bank memoriam, there are strong and unmet demands for Islamic financial products in West Bank, Gaza, Jordan, Algeria, Yemen, Syria, Indonesia, Lebanon, Afghanistan, etc.

Under conventional settings, financial inclusion may not be possible due to several factors, such as high interest rates, lack of necessary skills, diversion, closures of banks, inappropriate products, beliefs, low income, unemployment, geographical remoteness, financial habits and high cost associated with assessment and credit monitoring (Sinclair, 2001 and Howell, 2005). In Nigeria, poverty rate is very high in areas populated by Muslims (northern geopolitical zones). This is corroborated in figure 2, which shows that financially excluded rates are very high in the northwest

(56%), north-central (32.7%) and northeast (68.4%), as against the trend in the southwest and southeast and south-south which stood at 24.8%, 25.4% and 32.7% respectively (EFinA, 2014). One of the reasons for their level of exclusion is their inability to access interest-based fund due to complexity and unavailability of Sharia compliant financial products that could enhance their economic power, which they could not achieve under conventional financing. There was a general belief by a large number of people that the availability of Islamic financial products would substantially enhance financial inclusion among Muslims and non-Muslims who share the same belief in the prohibition of interest.

Considering the importance of financial inclusion and access, both the government and financial regulator (CBN) have doubled their efforts to expand the frontiers of financial access to low earners and the vulnerable. Many strategies have been put in place and different committees inaugurated for this purpose. In October 2012, CBN launched the National Financial Inclusion Strategy (NFIS) with a view to reducing to the barest minimum the number of adults that were excluded from financial services. The plan was to drastically reduce the number of excluded adults by 2020. Despite mainstreaming financial inclusion and access globally for over a decade now, however, the target of getting every adult included financially remains unachieved. The backwardness of some Muslims in the area of finance may be attributed to faith-based exclusion from the use of conventional products.

According to the CBN, Nigeria is yet to catch up with some of its peers in Africa in the area of financial inclusion. With inputs of all stakeholders in 2012, CBN defined a Financial Inclusion Strategy for Nigeria with a view to making financial products and services accessible to the populace at an affordable cost by 2020.

In 2014, the percentage of adults that were financially excluded in Nigeria stood at 40% (figure 7), which was far greater than the average for many other African countries, such as South Africa and Kenya, with 14% and 25% respectively. Islamic finance has the potential to increase access to finance in Nigeria, because its product features allows unimpeded access, far more than what is obtainable in conventional financial system. Islamic financial products may not need collateral and payment of interest.

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These two serve as barriers to financial inclusion in Nigeria and, thus, suggest the need to establish Islamic banks and other Islamic financial institutions, such as *takaful* and Islamic capital market to effectively include the excluded.

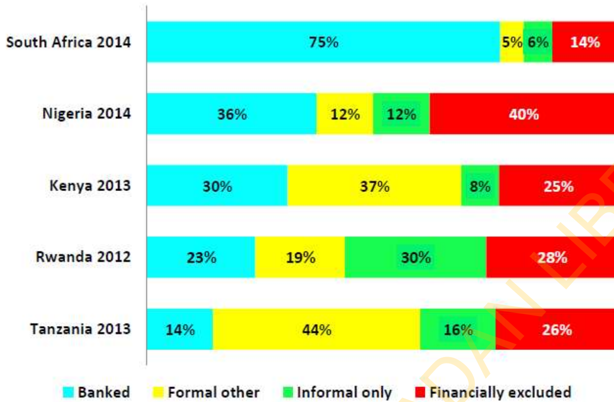

Figure 7: Comparison data on financial access among selected African countries
Source: EFInA (2014)

A branch of Islamic bank should be established in every local government area, particularly in states where Muslims are in majority (such as Kano, Katsina, Borno and Sokoto). There is the need for interaction between their clients, since their transactions are mainly asset-backed. This will help increase the level of financial inclusion in the country. The Muslim who exclude themselves naturally for the reason of belief in the prohibition of *riba* will have an opportunity to patronize a financial system devoid of interest. Retail agents suggested in the strategy are more appropriate in Islamic banks than in conventional settings. The agency, called *al-wakalah,* is allowed in Islamic banking—it may be done by guiding the agent and him commission based on his performance; or it may be in the form of sharing profits realized from business transaction based on a pre-agreed ratio. At some other times, the two are carried out, i.e. taking commission and sharing profits. The second is possible if it is in the form of *mudarabah*. Islamic banks allow other financial services rendered on fees, such as mobile payments—used paying into same accounts, loan repayments, pension payments and a host of other related services. The

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banks can also operate with Islamic cooperative societies because of the similarities between them, particularly in the areas of Sharia compliance and prohibition of interests. They extend services to the cooperative societies by creating opportunities for a banking relationship and increasing the bankability of those living in rural communities. They provide further payments, savings and *qard hasan* (benevolent loans).

Islamic microfinance banks can also be of assistance by providing payments, savings, qard hasan and investment opportunities for the excluded. They may enter into partnership arrangement with Jaiz Bank with a view to getting support on the variety of services provided by IMFS, particularly in the areas of payment services and benevolent loans. The support IMFS would receive from Jaiz Bank would assist them to build virile investment relation with their clients. Islamic finance may take the opportunity of five daily prayers in congregation in every mosque. Friday prayer and the two ids are to educate and create awareness of Islamic financial products in line with the Sharia. This will attract a very large number of Muslims. Workshops may be organized to discuss the operation of Islamic banking, while marketing campaigns can be done after daily prayers, Friday prayers and the ids. This will aid their understanding on banking business.

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How Islamic finance assists in financial inclusion

Risk-sharing and redistributive instruments are two key tools that Islamic finance uses to enhance financial inclusion and, thus, evolve economic diversification and sustainable development. Economic diversification is mostly achieved through SMEs because of the large amounts of income from different sources, which may not directly related to each other. The best way to support and enhance SMEs is through Islamic finance. As opposed to the Quranic stance against charging of interest, borrowers in the conventional financial setting bear the whole risk. But interest-based transactions are prohibited in Islam; hence, any transaction that involves interest (simple or compound) is not Sharia compliant. This way, Sharia supports risk-sharing and does not support the transfer of the whole business risk to a partner. He who wants to share part of the profits must be ready to share the loss if it is occur. The Prophet is reported to have

said: *al kharaju bi damaan* (ie, profit comes with liability). This is one of the basic approaches to achieving financial inclusion through Islamic finance.

God is the creator and ultimate owner of everything, including the ability to access financial and natural resources (Q20:6). 'To him belongs what is in the heavens and what is on earth and what is between them and what is under the soil.' Man is only chosen as His trustee-agent. He is to use His property in accordance with His dictates. Therefore, whatever a person realizes from his effort, he cannot claim the total credit. He has to give Allah His own share. The proportion of Allah is collected by the poor. It must be mentioned that the resources that the poor could have used to engage themselves are being utilized by those who work. Indirectly, the poor are partners of those who work. The resources on earth are in abundance and can go round. Allah says in Quran 11:6, 'And there is no creature on earth but that upon Allah is its provision, and He knows its place of dwelling and place of storage. All is in a clear register.' By this injunction, there are enough resources for man to share. It also means that poverty is not caused by scarcity or dearth of natural resources. Financial exclusion is caused by *israf* (extravagance), *itlaf* (waste) (Mahmoud et al., 2012) and non-payment of what rightfully belongs to Allah. The last would be received by the poor, if made; they become economically empowered to sustain themselves, and afford the basic necessities of life, such as food, shelter, education and healthcare, and thus become included financially.

To give Allah his share (through the poor), zakah, sadaqah and a host of other redistributive systems are provided for in the Quran. Zakah and sadaqah are considered the best way to enhance access to financing and alleviation of poverty, because the recipients do not pay interest, nor share profits with any partner; they do not worry over repayment of funds; and no collateral security is given before receiving them.

If economic resources are allocated and managed efficiently, and are not hoarded; if distributed evenly, a hundred percent financial inclusion will be possible. In addition to the compulsory zakah, it is encouraged to give to the poor more than the required amount. And excess amount over and above zakah is considered as sadaqah. Zakah encourages investments and employment in the sense that it is levied on aggregate wealth and

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unutilized resources. People with unutilized resources look for ways to invest them, so that zakah is not imposed on them. Such investment helps create employment and lead to generation of incomes for the investor and his employees. Sadaqah implies truthfulness and sincerity. The payment of sadaqah, therefore, indicates the level of a payer's sincerity in his belief in the Provider and ultimate Owner. When a person pays sadaqah, he gives Allah His dues. That shows his sincerity to honour the contractual obligation between him and Allah (Q2:26; Q2:272). This has no minimum and no maximum, as a person can give any wealth acquired lawfully.

Actualising financial inclusion through Islamic finance products

Financial inclusion can be actualized using various products under risk sharing and redistributive instruments. Some of the Sharia-compliant financial products that involve risk sharing are *mudarabah*, *musharakah*, *Ijaarah* and *muraabahah*. Mudarabah (combination of capital and labour) is used by some countries to finance their projects. Examples of projects funded with this product are Al-waha Petrochemical project in Saudi Arabia, Al-dur Independent Water and Power projects in Bahrain and Kuala Lumpur International Airport. Mudarabah and musharakah fit SME best in the sense that they involve principal-agent relationship and equity partnership.

Muraabahah (cost + mark-up) is used by Islamic banks to finance working capital, raw materials, semi-finished and finished products and letters of credit for SMEs. Istisna is another Islamic financial products used to finance manufacturing. Ijaarah (leasing) can also be used to engage the poor on wages to earn their livelihood. Ijaarah is also used to finance SMEs, as it reduces the start-up cost in addition to providing security to lenders. Salam (advance payment) is used to finance agriculture, letter of credit etc. With salam, famine will be eradicated because farming is well financed by the Islamic banks. Musharakah mutanaqisah (diminishing partnership) is a viable financial instrument used to finance housing sector and other real estate projects by the Islamic financial institutions.

Redistributive instruments through loans without interest is second in importance as regards risk sharing. After zakah and sadaqah, qard hasan (benevolent, beautiful, or good loan) is next. This is because it does not

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involve payment of interest. When this type of loan is extended to the poor, they pay back only the principal given to them without sharing any profit realized from the use of the funds or pay interest on it. Time of repayment may be specified when giving the loan, but the loan giver does not press the debtor for repayment at a particular time if it is not convenient for the loan receiver. In fact, the loan giver is urged to give more time for its repayment. He is also urged to forgo it if he can and he is aware that it not easy for the loan receiver to pay back the loan—but this is only where the loan giver has the capability to forgo it. Indirectly, therefore, the borrower determines the time and terms of the loan.

There are multiple returns promised by Allah to a person who gives qard hasan. This institution needs to be strengthened so as to complement the first distributive instrument in order to take the poor out of poverty. This complements the effort of government. For instance, the well-to-do members of a religious organisation and a host of others can have a purse, tagged qard hasan, to be given to people to manage by themselves. They scrutinize the use of the loan without interest and make sure it is used for productive purposes. There is no minimum and maximum number of people who can access it. Thus, through zakah, sadaqah and qard hasan, the idiosyncratic risks of the poor are shared by the well-to-do.

Qard hasan microfinance is different from conventional microfinance in the areas of charging interest and collective punishment in the case of default. These two features are prohibited in the former but are compulsory in the latter. It is a very good way of supporting SMEs to access financial resources from the banking system. It benefits the SMEs in the sense that it charges no interest and creates jobs through which the poor earn income from multiple sources. SMEs encourage entrepreneurship and risk-sharing in many aspects of different professions. Islamic financial products fit well SME financing, as all the products are asset-backed.

Although real non-perishable properties are normally used as awqaf (endowments), cash, shares, stocks and other assets can also be used. The founders may give instructions as to the way the properties are to be used. They may also give blanket instructions. The proceeds (say, rent collected) may be given to the poor or for specified purpose. The owner would not have any right on them for life, as the property soon becomes Allah's

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property. The trustees would manage the assets to provide social services, such as education and health. This could reduce government expenditures and other related issues, to positively affect budget deficits in the areas covered by waqf and inflation.

6. Discussion of Results

Hausman test is used to choose between fixed and random effects. What distinguishes the fixed effects from random effects method lies in the fact that random effect treats the constants for each section as random parameters, rather than as fixed. Besides, the higher the diversification index, the less diversified the economy; the lower it is, the more diversified. This indicates that a positive (negative) relationship between the herfindal diversification index and any of the explanatory variables implies the economy is less diversified (more diversified) when the explanatory variables increase (decrease) by one unit.

Table 4 presents the panel results obtained from the empirical estimation of equation 4 for the effect of financial inclusion on economic diversification in countries with established Islamic financial and banking systems. The data show that there is a positive relationship between economic diversification index and number of automated teller machines (ATMs) per 10,000km^2 (ESTATMS) and it coefficients is significant at 1% level; that is, an increase in it leads to an increase in the herfindahl diversification index. However, the data show that there are negative relationships between commercial bank branches per 1,000km^2 (ESTCOMM) and other deposit takers (ESTODT), and between herfindal economic diversification index and the coefficient of each of them at 5% level of significance. That is, as each of them increases, Herfindahl diversification index decreases. The implications of the results in table 4 are that the economies of the countries with established Islamic financial and banking systems are less diversified as the number of automated teller machines (ATMs) per 1,000km^2 (ESTATMS) increases; but become more diversified as commercial bank branches per 1,000km2 (ESTCOMM) and other deposit takers (ESTODT) increase. This means that as people have more immediate easy access to Commercial bank branches and Other Deposit Takers, the economies structure of those countries with established

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financial system become more diversified. The economies of those countries however become less diversified with an increase in the as the number of Automated Teller Machines (ATMs) per 10,000km^2. The R-squared shows that 41.19% of the variation in the herfindahl diversification index of economies of countries with established Islamic financial and banking systems was explained by the explanatory variables. The F-statistic of the model was significant at 1% level, which implies that the model was good.

Table 4: Regression results for countries with Islamic financial and banking systems

Variable	*Coefficient*	*T-Statistic*	*P-value*
Constant	39.4603	59.2400	0.0000*
ESTCOMM	-0.0478	-2.0000	0.0490**
ESTATMS	0.1680	7.3900	0.0000*
ESTDOT	-0.0013	-2.0900	0.0390**
R-squared		0.4119	
Adjusted R-squared		0.3908	
F-statistic		19.6100	
Prob. (F-statistic)		0.0000*	

Note: * and ** denote 1% and 5% significance levels respectively
Source: Author's estimation from STATA

The data in table 5 revealed the panel analysis results of the empirical estimation of equation 5 for the effect of financial inclusion on economic diversification in countries with no established Islamic financial and banking systems. The data show that there were positive relationships between economic diversification index and each commercial bank branches per 1,000km^2 (NCOMM) and number of ATMs per 10,000km^2 (NTATMS). However, only the coefficient of commercial bank branches per 1,000km^2 (NCOMM) was significant at 1% level, while the coefficient of number of ATMs per 1,000km^2 (NTATMS) was not significant at any level. This indicates that herfindahl economic diversification index increased as commercial bank branches per 1,000km^2 (NCOMM) increased. However, there was a negative relation between herfindahl economic diversification index and other deposit takers (NODT) with the coefficient of NODT significant at 1% level. This means that herfindahl economic diversification index decreased as the number of other deposit

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takers (NODT) increased. The result in table 5 implies that the economies of the countries with no established Islamic financial and banking systems were less diversified as the number of commercial bank branches per 1,000 km^2 (NCOMM) increased, while the economies became more diversified as the number of other deposit takers (NODT) rose. Thus, economies with no established Islamic financial and banking systems needed to increase their number of other deposit takers to improve their level of diversification; they also needed to reduce the number of commercial bank branches per 1,000km^2 (NCOMM) to become more diversified.

The R-squared showed that 86.2% of the variation in the herfindahl diversification index of economies with no established Islamic financial and banking systems was explained by the explanatory variables. The F-statistic of the model for economies with no established Islamic financial and banking systems was significant at 1% level, which implies that the model was good.

Table 5: Regression results for countries with no established Islamic financial and banking

Variable	*Coefficient*	*T-Statistic*	*P-value*
Constant	47.9642	89.9500	0.0000*
NCOMM	0.4283	8.4600	0.0000*
NATMS	0.0168	0.6500	0.5170
NODT	-1.7412	-9.1900	0.0000*
R-squared		0.8620	
Adjusted R-squared		0.8560	
F-statistic		148.0000	
Prob. (F-statistic)		0.0000*	

Note: * denotes 1% significance levels respectively.
Source: Author's estimation from STATA.

Table 6 shows the panel analysis results of the empirical estimation of equation 6 for the effect of financial inclusion on economic diversification in top 8 countries in terms of nominal GDP. The results revealed there are positive relationships between economic diversification index and each number of ATMs per 10,000km^2 (TATMS) and other deposit takers (TODT). However, only the coefficient of number of ATMs per 1,000km^2

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(TATMS) was significant at 1% level, while the coefficient of other deposit takers (TODT) was not significant at any level. The indication of this is that herfindahl economic diversification index increased as number of automated teller machines per 1,000km^2 (TATMS) increased. However, there was a negative relationship between herfindahl economic diversification index and number of commercial bank branches per 1000km^2 (TCOMM) with the coefficient of number of commercial bank branches per 1000km^2 (TCOMM) being significant at 1% level. That is, an increase in the number of commercial bank branches per 1,000km^2 (TCOMM) led to an increase in the herfindahl economic diversification index. The implication of the results on Table 6 is that the economies of top 8 countries in the world in terms of Nominal GDP becomes more diversified, the more the number of commercial bank branches per 1000km^2 (TCOMM); but the less diversified it became the more number of ATMs per 10,000km^2 (TATMS).

The R-squared shows that 50.76% of the variation in the herfindahl diversification index of economies of top 8 countries in the world in terms of nominal GDP is explained by the explanatory variables. The F-statistic of the model for economies of top 8 countries was significant at 1% level, which implies that the model was good.

Table 6: Panel regression results for countries in top 8 world economies

Variable	*Coefficient*	*T-Statistic*	*P-value*
Constant	4.0186	91.1000	0.0000*
TCOMM	-0.1534	-7.5500	0.0000*
TATMS	0.1175	6.6600	0.0000*
TODT	0.0000	1.0600	0.2940
R-squared		0.5076	
Adjusted R-squared		0.4900	
F-statistic		28.8600	
Prob. (F-statistic)		0.0000*	

Note: * denotes 1% significance levels respectively.
Source: Author's estimation from STATA.

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6. Conclusion

The objective of this study was to examine the effects of financial inclusion on diversification. The analysis focused on 8 Muslim countries with established Islamic financial and banking systems, 7 Muslim countries with no established Islamic financial and banking systems and top 8 countries in terms of nominal GDP using IMF 2015 data. The results of the study revealed that the economies of the countries with established Islamic financial and banking systems were less diversified as the number of automated teller machines (ATMs) per 1,000km^2 increased, but became more diversified as commercial bank branches per 1,000km^2 and other deposit takers increased. Concerning the economies of the countries with no established Islamic financial and banking systems, they became less diversified as the number of commercial bank branches per 1,000km^2 increased, while the economies became more diversified as the number of other deposit takers rose. The economies of top 8 countries in the world in terms of nominal GDP were diversified as the number of commercial bank branches per 1000km^2 increased, but less diversified as the number of ATMs per 1,000km^2 increased.

It is therefore, concluded that as people access more commercial bank branches and other deposit takers, the economic structures of countries with established financial systems become more diversified; while the economies of countries become less diversified with an increase in the number of ATMs per 1,000km^2. The findings also implies that economies with no established Islamic financial and banking systems need to increase their number of other deposit takers to improve their level of diversification; but reduce the number of commercial bank branches per 1,000km^2 to become more diversified. Moreover, economies of top 8 countries in terms of nominal GDP becomes more diversified when there is increased number of commercial bank branches per 1000km^2; but less diversified when there is increased in the number of ATMs per 1,000km^2 (TATMS). Therefore, there should be a policy to increase the number of commercial bank branches and other deposit takers in countries with established financial system for their economies to become more diversified. In the economies with no established Islamic financial and

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banking system, there is a need to implement policy that will increase the number of other deposit takers to improve their level of diversification.

The top 8 countries in terms of nominal GDP should implement policy that will increase the number of commercial bank branches per 1000km^2 to experience improved level of economic diversification. They need to increasingly establish Islamic banks and other Islamic financial institutions, such as takaful (Islamic insurance) and Islamic capital market, to effectively include the excluded. Risk-sharing techniques (mudarabah, murabahah, etc) and redistributive instruments (zakah, sadaqah, qard hasan), the two major instruments through which Islamic finance enhances financial inclusion should be encouraged. Through these, diversification of the Nigerian economy would be enhanced.

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