

Integrating Theory and Empirical Data: Microfinance, Poverty and Islam in Nigeria

Soliu Hamzat

Department of Economics, Ahmadu Bello University, Zaria

Correspondence Email: shamzat@abu.edu.ng

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Abstract

Nigerian Muslims have lived without adequate legal and regulatory provisions for microfinance institutions that are specifically targeted at their peculiar needs. Islam forbids usury (i.e. interest) and majority of poor Muslims in Nigeria avoid both conventional commercial and microfinance banks mainly to abide by the dictates of their religion (Islam). Southerners live closer to the hub of country's financial sector and do not exclude themselves from it like the Northerners. Meanwhile, the literature is replete with lots of evidence in favour of finance for growth and finance for poverty alleviation. This study expressed the rate of change of output with respect to time (i.e year) as a function of labour, capital per head, technology and effect of microfinance for both the South and the North in form of a mathematical(not econometrics) model. Geogebra mathematical software was used to simultaneously obtain output (not rate of change of output over time) for each region as a function of time. A simulation of this model was presented in graphical form for easy identifications of changes to output of each region due to the simulated figures. The results of the analysis show that the prevalence of microfinance banks in the South over the North can explain the difference in the rate of poverty between the two regions. Critical mass of Shariah-Compliant microfinance is recommended for the North to bridge the gap observed in the poverty rate between the regions.

Keywords: Muslims, Microfinance, Northern Nigeria, Poverty.

JEL Classification: I32, O12, P43, Z12

1. Introduction

Since the colonisation of Nigeria by the British ended in 1960, the socio-economic fate of Muslims in the country like other colonised Muslim-dominated country may have suffered setbacks due to the incongruence of the ordinances in the British legal system against the permitted way of life enshrined in the Quran i.e. the Islamic Holy book to whom Muslims generally are guided in their respective socio-economic activities. However, unlike other once colonised Muslim dominated country like Indonesia, Malaysia, Bangladesh etc. not much success had been made towards setting up formal economic institutions like commercial banks, insurances companies, microfinance banks etc other than having two Islamic banks- Jaiz bank

and Taj bank- to take care of the needs of Muslims who desire to adhere to the Islamic injunctions in their respective everyday dealings. Honohon (2007) was cited in CGAP (2008) to have noted that more than 72 per cent of Muslims exclude themselves from non Shariah-Compliant financial system. This, however, may not be without implication on the socio-economic lives of such faithful in general because legal and regulatory environment put in place in any country have strong influence on the economic growth trajectory in such country (Broughel, 2017). Besides, religiosity impacts on poverty in diverse dimensions and there are several debates as to whether the impact is overall positive or negative (Schweiger, 2019). The geographical distribution of non-Sharia-Compliant banks (commercial and microfinance banks alike) in Nigeria, for example, is highly skewed against Northern Nigeria which is the Muslim dominated region. Official records of Central Bank of Nigeria (CBN) and Nigeria Deposit Insurance Corporation (NDIC) show that all the 22 commercial banks and six merchant banks have their Head Office in the Southern part of the country i.e. Lagos. The two Sharia-Compliant Islamic banks (Jaiz and Taj) have their Head Office in Abuja which is in a Northern part of the country. Similarly, the same sources (CBN(2020) and NDIC(2019) say Northern region (FCT inclusive) has only 35 per cent (310 out of 897) of microfinance banks in the country while the South has 65 per cent (587 out of 897). However, there are no indication that any of the 310 microfinance banks in Northern Nigeria are Shariah-Compliant ones. Official data of poverty rate in Nigeria show that the Northern States record higher rate of poverty than the Southern States. In South Western, Ekiti State poverty rate is least (when compared to Lagos, Ogun, Osun, Oyo, and Ondo) with the highest number of microfinance banks. In the Northern States, poverty is higher in Yobe, Taraba and Sokoto with the least number of microfinance banks.

The Nigerian economy, in the first one and half decade (1999-2015) of its return to democratisation, recorded a high (above 6% per annum) growth rate and an improved per capital income, but the proportion of persons living in poverty is rather increasing throughout that period (NBS; 2020). The situation is even worst since 2016 due to recession and rapid rate of food inflation with other essential items in the food basket and services of the masses. Nigerians living in North West, North Central and North East in particular (NBS; 2020) are the worst hit by the recession. Meanwhile, agriculture and many other activities of the primary sector are the dominant means of livelihood of majority of the poor across the country. Smallholder farms with poor yield are the common feature of the agriculture sectors. Farmer-herder crises, incessant banditry and kidnapping have become and remarkable features of the live of farmers especially in the Muslim dominated zones (North West, North Central and North East) in the past decade. Although finance has been found to impact positively on economic growth and as a result slow poverty in Nigeria. Most of the commercial money banks and microfinance are mostly sited in more commercialised communities. Lagos alone has 19 per cent of the total microfinance banks in Nigeria followed by Anambra with 8.6 percent. However, Kano the most populated States and the second most commercialised State in the country has 5 per cent of the microfinance banks in Nigeria. While Lagos, Anambra, Oyo, and Ogun are all not as populated like Kano and except

Lagos they are all not as commercialised as Kano, yet they all have more microfinance banks than Kano. Again, Kano is a northern State and its indigenes/residents are mostly Muslims whose religion forbids financial services like banks not compliant with Islamic injunction. Even though Kano is highly commercialised, poverty is high in Kano than many not so commercialised States in the Southern region.

A number of scholars have explained the financial exclusion taking place in Muslim dominated Northern Nigeria (Enhancing Financial Innovation & Access(EFInA), 2014) and (Adeyemi, Pramanik, & Ahamed, 2012) that it may not be without its implications. In particular EFInA (2014) identified Kano, Bauchi, Kaduna, Katsina and Sokoto as the top 5 States with the highest number of financially excluded adults. The gap in literature is that there has not been direct linkage between the state of poverty in most of these Muslim dominated northern States and financial exclusion in these States to the best of knowledge of the present study. Using a simulation approach which compares the state of the variables of the production/aggregate output of this part of the country to those of others, this research fills this gap by showing how differentials in financial exclusion is associated with lower per capital output. The question this research seeks to answer is to what extent is exclusion from financial activities/microfinance banks due to religious instructions account for the poverty of the people? In other words, to what extent can the prevalence of microfinance banks in Southern part of Nigeria explain relatively lower rate of poverty than the Northern part? The model in this study is similar to the quantitative macroeconomic framework of entrepreneurship by Buera, Kaboski, & Shin's (2021) which shows the aggregate impact of microfinance institutions in the country. More precisely, financing activities are required to stimulate commercial activities required to earn a living through contribution to the main stay of economy of northern Nigeria i.e. supply value-chain in agriculture and commerce. Financing activities are generally abysmally low in most of northern Nigeria; where they exist they are mostly based on interest which is not in tandem with the faith (Islam) of majority of the people living in the community. Yet poverty is relatively high in the region compared to other regions in the country. The study is divided into five sections. This introductory section is the first section and the literature review section is the second. The methods of the study is presented in the third section of the study. The fourth and fifth section respectively present the results of analysis and the conclusions and recommendation.

2. Literature Review

This section conceptualizes relative poverty and financial exclusion and defines some concepts/ideas in a simplistic form. It also learns from financial exclusion experiences of other countries/community across the globe with the aim of a better appreciation of the problem in Nigeria. Finally, the chapter indicates a gap in the literature of financial exclusion in the microfinance sub-sector that the paper attempts to make some inroads towards filling

Conceptual Review

The idea of poverty is widely debated in the literature and *endogenous poverty* is relative poverty especially when reference is made to the median income in the community/country as the poverty line. Poverty has been conceptualised from different perspectives and the likely causes have also been widely discussed in the literature (Conconi & Viollaz, 2018).

Financial exclusion is the processes that prevent the poor and disadvantaged socio-economic groups from gaining access to the financial system. In a narrower sense, it has been defined as exclusion from particular sources of credit and other financial services (including insurance, bill-payment services, and accessible and appropriate deposit accounts). In a more wider perspective it refers to factors which have the effect of shutting out of the less well off from mainstream money services (Sinclair, 2001).

Theoretical Framework

Otherwise called the *poverty-growth-inequality triangle hypothesis*, the theoretical underpinning of the study is the idea that the extent of poverty in a country depends on the growth of average income in that community and the degree of inequality in the distribution of the income (Datt & Ravallion, 2011). In other words, exclusion from financial services by people in Northern Nigeria could limit growth in average income of people in the region and when this happens, the dynamics of the political economy of the region will cause a lopsided distribution in the income of the region.

Empirical Review

Finance is important in bringing about economic growth (Nizam, Abdul Karim, Abdul Rahman, & Sarmidi, 2020) and (King & Levine, 1993) among others and economic growth is a necessary condition to achieving poverty reduction. More particularly, Islamic finance impacts positively on economic growth (Mustafa, Baita, & Usman, 2018) (Kassim, 2016) and (Tabash & Dhankar, 2014). The literature is replete with lots of evidence on the effects of microfinance and finance in general on poverty alleviation (Machingambi, 2020) and (Egharevba, Azuh, Iruonagbe, & Chiazor, 2016). For Nigeria, the issue of high poverty rate across the country has been of great concern for policy makers, politicians and development partners for decades. What is worrisome in particular is the skewness of the spread of poverty within the northern parts of the country. Religion, population, climatic condition, cultural practices among others are some of the factors that differentiate the Northern region from the Southern region in Nigeria. Meanwhile, religion and religiosity are arguably two sides to a coin that is capable of causing poverty on one hand and alleviating it on the other (Schweiger, 2019). Sedmak (2019) used Randomised Control Experiment (RCT) to show that religion plays the function of setting normative ideas as well as serves as a motivational factor in the lives of people. It is also interpretive.

The predominant religion in Northern Nigeria, Islam, encourages accumulation of wealth, hard work, participations in commercial activities, good work ethic, partnership among other practices needed to avoid poverty (Khan, 2020). It

however forbids earnings through *usury, pork meals, extortions, bribery, exploitations* among other social vices (Yeboah-Assiamah, 2014). There are instances where Prophet Muhammad (PBUH) was reported to regularly pray against poverty and even encouraged humanity to strive for financial independence. However, it is clearly prohibited for Muslims to engage in dealing in interest on loans and interest in other form of financing (Qur'an 2:275-280). Models of non-interest financing are until a decade ago entirely absent in Nigeria's formal financial market. Most of the non-interest financial transaction in many parts of Muslim dominated communities in Nigeria were mainly informal and there limitations is highly determined by difficulty in the enforcement of informal loan contracts (Uruakpa , 2018), (Adeusi & Ibitoye, 2014) among others. Although Muslim dominated north is richly endowed in agriculture, the region does not have robust financial sector capable of unlocking the potentials in agriculture (Muhammad, Alhaji Dauda, & Mamman, 2018). Even at that Abraham (2015) showed that lending to the rural poor in Northern Nigeria has significant positive impact on poverty alleviation. This is similar to the conclusion by Donou-Adonsou & Sylwester (2017) that microfinance is capable of bringing about increased economic growth than banks would do. In addition to restricted access to microfinance, the land tenure system in the country is such that makes it difficult to securitize landed property for the sake of using them as collateral to unlock the potentials in agriculture by freeing resources for adequate investment in the sector especially for a region (the North) that owns the larger percentage of land in the country (Kehinde, Shittu, Adewuyi, Osunsina, & Adeyonu, 2021)

3. Methodology

The study used both descriptive and analytical approach to show the aggregate impact of microfinance of economic growth and by extension poverty. Graphical plot of a number of microfinance banks and poverty rate and that of number of commercial banks and branches of commercial banks are the descriptive approach. A model of aggregate impact of microfinance on the entire economy is used to show the relative impact of microfinance in both the South and the North in Nigeria. First we obtain the graphical plot of microfinance banks against rate of poverty head count on two different (primary and secondary scale) scale of measurement. This is to show how the number of microfinance banks in a State related to the rate of poverty. Similarly, a graphical plot of the number of microfinance banks by State on the primary axis and the number of branches of commercial deposit money banks (DMBs) on the secondary axis to show the pattern of distribution of both microfinance banks and commercial money banks across the country. The aim is to show whether there is comparative advantage in microfinance banks in some States over others.

A mathematical (not econometrics) model was specified, solved and simulated to discern the respective behaviour of the impact of microfinance in the South and in the North. In particular, the rate of change on output over time as a function of labour, capital per head, technology and microfinance effects were specified. It is a mathematical model because the stochastic term is not indicated as no estimation of coefficients were done. Instead, Geogebra a mathematical software was used to

solve the output (not rate of change of output) as a function of time for each of the Southern and Northern regions. Using the Cobb-Douglass production function, the study carried out a *simulation* of aggregate production (output) of the Southern and Northern States to examine the factors that can explain the differences in output between both regions with the aim of explaining the difference in level of income and then poverty in Muslim dominated North and Christian dominated South.

To achieve this we use a dynamic mathematical model indicating the rate of change of output in each of the region and the population rate over time. The change in aggregate output over time in Southern and Northern Nigeria respectively are indicated in equation (1) and (2) and the change in the country’s population is given in equation (3).

$$\begin{aligned} \frac{dr}{dt} &= \frac{Af (\tau K)^\alpha}{P} L^\beta \dots\dots\dots 1 \\ \frac{dy}{dt} &= \frac{Af (\gamma L)^\beta}{P} K^\alpha \dots\dots\dots 2 \\ \frac{dP}{dt} &= \gamma L \dots\dots\dots 3 \end{aligned}$$

Where A, α , β , τ , and γ are productivity/technology, elasticity of capital, elasticity of labour, labour deepening and capital deepening effects respectively. Similarly, K, L and P are respectively state variables for capital, labour and population. L is proxied by 1 minus rate of unemployment; K by ratio of investment to GDP and P by growth rate of the population.

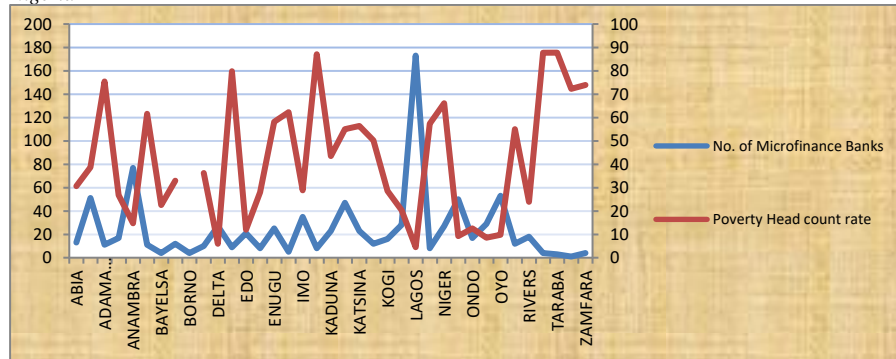
We started the *initial condition* of each of the state variables (capital accumulation(K),labour employed(L) and population rate (P), we use Ordinary Differential Equation with the command *NSOLVE ODE* in a mathematical software called *Geogebra* we obtain the graphs of the dynamic path of the three equations under several scenarios. Official figure of unemployment rate by National Bureau of Statistics is 30 per cent in Nigeria as at 2021 and so L is 1-30 per cent i.e. 0.7. Similarly, we used *gross fixed capital formation* data for the period 2010 to 2018 to estimate *gross fixed capital formation* as a per cent of GDP to arrive at the initial figure for capital Kstart which ranges from 0.14 - 0.2. We selected the maximum for the purpose of this study. In addition to the official sources to which references were made to above, the study learns from the results of the empirical literature of Cobb-Douglass production function in Nigeria to fix the coefficients (A, α , β , γ , τ , and γ) and values for the state variables (K,L,P,y and r) are obtained from CBN(2019) and NBS(2020).

4. Results

The head count of poverty rate by State shows an indirect relationship with the number of microfinance banks in the country. The lower the number of microfinance banks by States, the higher the rate of poverty head count there is. The chart in figure 1 shows that as the blue line which indicates the number of microfinance banks trend downward, the red line indicating the rate of poverty head count trended upward and viz. visa. It should be noted that the red line on the right hand side measuring rate of poverty head count slopes upward whereas the

blue line for number of microfinance banks trended upward almost at the same time say from Oyo to Zamfara.

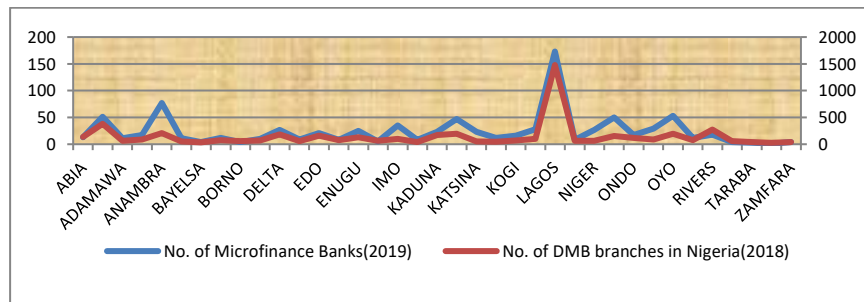
Figure1: Graphical Plot of the Spread of Microfinance Banks and Poverty Head count by State in Nigeria



Sources: Author's draft using data sourced from National Bureau of Statistics (NBS, 2020) and Nigerian Deposit Insurance Corporation (NDIC, 2021).

When compared to the spread of the branches of commercial Deposit Money Banks (DMBs) in each States of the federation, the spread of microfinance banks across the country mirrors, almost exactly, the distribution of the branches of DMBs across the country. For example, Anambra recorded higher number of microfinance banks and DMBs than Adamawa to the left and Bayelsa to the right. Similarly, the pattern of movement of the spread of branches of DMBs throughout the figure is same as the number of Microfinance banks in all the States of the Federation. This is a preliminary indication that there is no State that has comparative advantage in microfinance banks over others as the number of branches of DMBs in each of the State of the federation reflects the number of microfinance banks available in each of the State. In other words, there is no State that has unique preferences for microfinance banks over others. Meanwhile the distribution of microfinance banks by State indicated in green colour takes reference from the primary axis on the left hand side of the figure above, the number of branches of DMBs by State indicated in red takes reference from the secondary axis on the right hand side of the figure.

Figure 2: Graphical Plot of the Spread of Microfinance Banks and Branches of Deposit Money Banks (DMBs) by State in Nigeria



Sources: Author's draft using data sourced from (Nigerian Deposit Insurance Corporation(NDIC), 2021)

Scenario1.

The results of engaging capital, labour and improved financial services in the Southern part of the country indicates higher total output in the South over the North throughout the relevant period of thirty five years under investigation. This can be seen in Figure 3. During the period also, the growth rate of the population is exponentially rising faster than the pace of output per head in both the South and the North. In particular, the rate of growth of output over time for the Southern parts of the country is twice that of the North if we assume twice as much microfinance banks in the South compared to the number in the North. In Figure 3 for example, when the rate of growth of the total output of all the Southern States was 24%; that of the entire Northern State was 12%.

Scenario2.

The results of simulation of Scenario 2 in figure 4 is similar in all respect to scenario 1 except that technology and other endogenous factors were assumed to be higher by 57% i.e. $A=1.1$ in this scenario. The result of the simulation shows that Southern States continue to have twice as much output compared to the Northern States. Although the magnitude of each of the region is relatively higher than scenario 1 when technology and other endogenous factors are assumed to be lower i.e $A=0.7$.

Scenario 3

Scenario 3 is similar to scenario 2 except that the availability of microfinance banks in the Southern State is assumed to be only one-fifth ($f=0.2$) of those of the Northern States. By this, the pace of growth of output in the Northern States is four-fifth of those of the Southern States. Although slower but still an exponential growth rate, the population rate is found to be higher than output per head throughout the relevant period under investigation. Shown in figure 5, when the output per head for the Northern States grew by 8 per cent in the fifth year; that of the Southern States grew by 2%.

Scenario 4

In scenario 4, we assume the quality of labor is reduced by 50% (from 1.5 to 1) for Northern States and that of capital by 50 percent (from 1.5 to 1) for the Southern States and that all other conditions remain same like *scenario 3*. The result of the simulation shown in figure 6 shows that Northern States record relatively higher rate of output per capita than the Southern States before the quality of those factors were reduced by 50%. However, the growth rate of population remain same throughout the related period investigated.

The population of all the states in Northern Nigeria is relatively higher than those of the Southern States and as such the North has relative labour intensive advantage over the South. On the other hand the South has relative advantage in capital intensive because of its huge financial sector.

Scenario5.

In an extreme limiting case of no microfinance sector in the Southern States, the result of this scenario shown in figure 7 shows that output in the Southern States will take up a constant value throughout the period of thirty five years under

investigation while output will be lower than it is in scenario 4 but will steadily rise at an average of 4% per annum.

Scenario 6.

Like scenario 4 where the availability of microfinance in the north is higher than the south but in this case only slightly by 0.07. In other words, this is a scenario where we examine the trajectory of the output in both the North and the South when only 93 per cent of microfinance banks in the North are present in the South. The result shown in figure 7 shows that up to the first eight years the output of both regions (North and South) are same after which the output of the North increasingly get higher than that of the Southern States. This is a preliminary indication that only after a long period of more than 8 years that the difference in output between the regions show, which is as a result of slightly more microfinance banks in the North that causes a difference in output between the regions.

Discussion of findings

The results of all the scenarios and interactions of this study is in line with the financial repression hypothesis and finance and growth theory respectively by McKinnon(1989), and King and Levine (1993). These sets of thoughts put emphasis on availability of market for financial services to influence economic growth. Several other researches in Nigeria have documented similar results in Nigeria.

5. Conclusions and Recommendations

The summary of findings is that the results of the simulations and analysis give a preliminary indications that the difference in the number of microfinance banks between the Southern and Northern region can explain the difference in the poverty level between the two regions. This is because the geographical distributions of branches of DMBs and microfinance banks is same in Nigeria, rate of poverty that is skewed against the North negatively correlate with the number of microfinance banks in each region which account for the difference in output. It is therefore recommended that the country's monetary authority (i.e. the CBN) gives priority to the setting up of more microfinance banks in the Northern States. This can be achieved by licencing non-interest microfinance banks especially since majority of people in the Northern States are Muslims who will not patronize interest-based microfinance banks.

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APPENDIX

Figure 3: Graphical Plot of Scenario 1

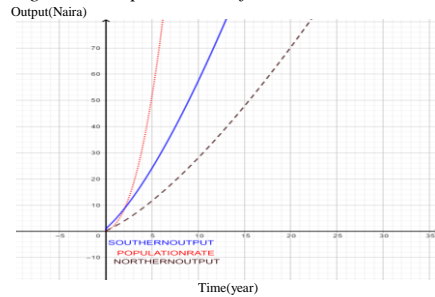


Figure 4: Graphical Plot of Scenario 2

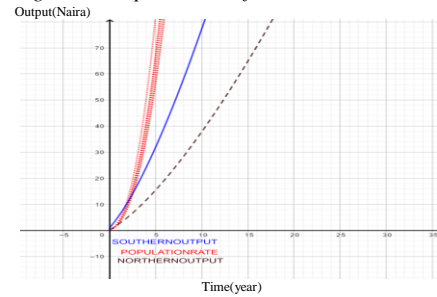


Figure 5: Graphical Plot of Scenario 3

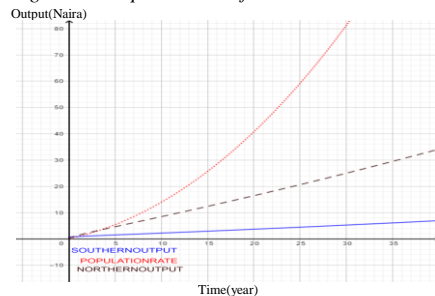


Figure 6: Graphical Plot of Scenario 4

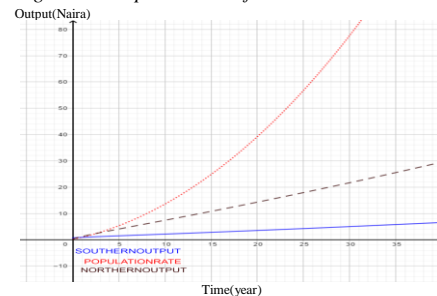


Figure 7: Graphical Plot of Scenario 5

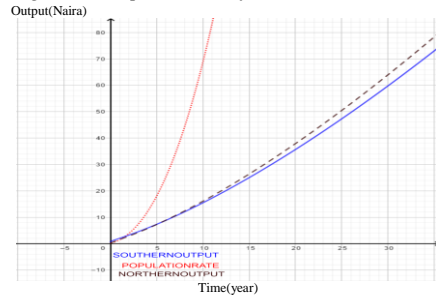
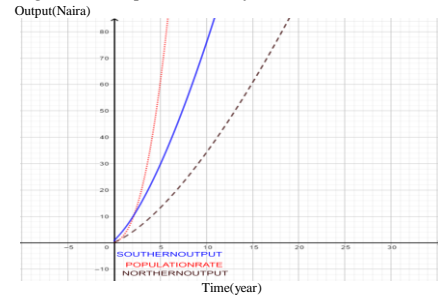


Figure 8: Graphical Plot of Scenario 6



Source: Author's Computation using data from CBN (2020)