FINANCIAL SECTOR DEEPENING AND ECONOMIC PRODUCTIVITY IN NIGERIA: AN EXPLORATORY SURVEY

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Abstract

This study examined Financial Sector Deepening and Economic Productivity in Nigeria. The different dimensions that financial deepening takes in an economy, namely: Development of financial markets, Development of financial institutions and Diversity in financial instruments served as proxies for it and were adopted as independent variables. The study employed 'Random sampling technique' for data collection using structured questionnaire designed to conform with 'Item-Specific-Response-Options approach. Analysis of data was carried out utilizing Pearson's Product-Moment Correlation Co-efficient (PPMCC) denoted by the letter 'r'. The findings were sturdy revealing that all the independent variables exhibited positive signs, thus indicating positive correlation with Economic productivity in Nigeria. However, the correlation coefficients of two variables were considered low, though, a little below 50% and the third variable showed a moderately sufficient or middling coefficient, a little above 50%. Based on these results, we concluded that the strength of relationship between financial sector deepening and Economic productivity in Nigeria was on the average – middling relationship. For financial markets and institutions to perform exceptionally, we recommend that stakeholders should endeavour to provide modern technologies and infrastructures to replace aging and outdated ones as such may have had negative impact on productivity processes. We also recommend training and re-training for the workforce of the financial markets and institutions particularly now that most financial transactions have been automated.

Keywords: *Financial, Deepening, Development, Market, Institution, Instrument, Nigeria*

Introduction

Developed, less-developed and emerging economies globally strive to thrive economically and so seek for development and financial strategies and concepts that facilitate growth and productivity. To drive sustainable growth and development, new concepts and strategies are ever emerging and adopted to create economic conditions suitable for growth processes. Financial deepening is a development economics concept primarily aimed at increasing and providing broad financial services with the goal of promoting economic productivity. Guo (2005), emphasized that productivity has become increasingly important to promote economic growth, and to explain the regional imbalance. What then is Financial Deepening?

Finance and economic scholars have provided several definitions of Financial Deepening. Andjarsari (2015) explained that Financial Deepening refers to the increased condition and amount of financial services, with broader alternatives of services that are accessible to every investor, foreign and domestic as well as retail households and institutions. It is a concept that refers to the development of financial markets, institutions and financial instruments that facilitate the provision of a wide range of financial services and diverse financial instruments utilization. Critically viewed from this perspective, financial deepening focuses on the development of the nation's financial system in order to effectively enhance the growth of

the economy; being able to significantly increase liquidity and thus the ratio of money supply to Gross Domestic Product (GDP). It is an economic fact that a well-developed financial system facilitates greater penetration of financial resources and services to all sectors of the economy. Nigeria being a developing or rather an emerging economy has consistently strived to put in place economic structures that facilitate productivity in order to sustain economic growth. This has led to a number of policy formulations in the financial sector over the last three decades. These policies were in pursuit of facilitating and improving financial deepening in Nigeria. It led also to the introduction of various financial instruments and products particularly in the advent of electronic banking in order to create a liquid and inclusive business environment with a broad spectrum of financial services. Essentially, this was aimed to serve some benefits in the economy.

The importance and benefits of Financial Deepening are numerous and diverse. Theoretical and empirical literatures have revealed that Financial Deepening is very important to an economy in various aspects which include: financial resilience, human capital development, economic and social development, et cetera. Andjarsari (2015) explored how Financial Deepening can contribute to human capital development and argued that 'broadening access to the financial sector and products could benefit the underprivileged through increasing capital flow and allocation, thus gradually reducing inequality between the rich and the poor in the society. Furthermore, improving financial dept. in an economy is essential to the provision of finance to Small and Medium Enterprises (SME) to avoid being crowded out by large corporations. Pietro (2019), opined

that unleashing the positive contribution of Financial Deepening to human capital development will require policy interventions at the micro and macro levels. At the micro level, it makes serious efforts to increase access to financial services for households by removing associated barriers and to design new products and services with an explicit link to human capital development. At the macro level, Financial Deepening preserves financial stability and sustainability. Generally, it improves the business environment for productivity to flourish and by implications; an improved business environment enhances market stability with added potentials to attract local and foreign investments. On the other hand, the growth of local and foreign investments has the ability to enhance market liquidity, mitigate financial risk and this ultimately translates to financial sustainability in the market place when the growth persists.

Financial Deepening as a strategy drives the development of the financial system effectively to enable it perform efficiently. The financial system of a nation consists of financial markets, financial institutions and financial instruments and the rules, concordats and ordinances governing inter-relationships and transactions. So, Financial Deepening helps to improve and enhance the status of financial markets, institutions and diversify financial instruments. A well-established financial system has the potential to influence the level of market liquidity by the provision of funds for businesses and that exerts positive impulse on economic productivity and hence growth. According to Andjarsari (2015), improving the much needed financial services facilitates productivity and hence economic growth is stimulated through increasing the rate of capital accumulation. Financial Deepening

thus allows positive growth in an economy as various aspects of financial development such as improving money and capital markets facilities, improving assets and liability management of financial institutions, improving instruments such as domestic credit to the private sector for economic purposes, improving bond, stock and shares, diversifying financial products, et cetera are effectively functional. International Monetary Fund report; IMF-DFID, (2017), affirmed that there is a significant positive relationship between financial development and economic growth. It is against this background that this study attempts to explore and determine the level to which Financial Sector Deepening has facilitated Economic productivity in Nigeria. In doing so, we adopted Wikipedia encyclopedia insight into the different forms or dimensions Financial Deepening takes in an economy.

Accordingly, they include:
➢ Development of financial markets

➢ Development of financial institutions and

➢ Diversity in financial instruments.

Though, financial development may also assume sundry financial services and products, the three features above are core to Financial Deepening. They facilitate quick access to financial resources and thus accelerate productivity that allows for speedy economic growth. Therefore, in this study we are focusing on these core features of Financial Deepening as our independent variables to explain how they have related or facilitated Economic productivity in Nigeria.

Statement of the Problem
The Nigerian economy has been consistently experiencing downturn in economic activities in the very recent past. One of the core factors responsible for this is the deteriorating state of the domestic currency – the Naira, now standing ever low in value relative to other world currencies. Consequently, it has had a systemic contagious effect on every other sector of the economy as per high cost of business operations, high cost of living and high cost of industrial materials, imported goods and particularly for raw materials used for productive purposes. Presently, local industries and most sectors of the economy are at their ebbs such that local manufacturers of goods, if any, are having herculean task funding their operations, either as a result of lack of funds, inability to access finance or high cost of credits. Generally, productivity in the economy has retarded.

Financial sector deepening concept which is referred to as the development of financial markets, institutions, instruments and operational laws, concordats, et cetera facilitates the provision of a wide range of financial services and diverse financial instruments utilization. Consequent upon this, the concept is now an evolving strategy to boost economic activities globally. It is one of the major financial concepts being used to alleviate economics woes and foster growth. It is against this background that the study seeks to carry out an exploratory survey on Financial Sector Deepening and Economic Productivity in Nigeria.

Hypotheses Formulation
The objective of the study is deduced from the statement of the problem. The objective is essentially to determine the impact of Financial Sector Deepening on Economic productivity in Nigeria. In its question form, it states: to what extent has Financial Sector

Deepening facilitated economic productivity in Nigeria? In order to accomplish the goal of the study, we stated three null hypotheses to be tested. The hypotheses are stated using the three independent variables deduced in section 1.0 above, namely: Development of financial markets; Development of financial institutions and Diversity in financial instruments to explain Economic Productivity. The three hypotheses are stated as follows:

H01: There is no significant relationship between Development of Financial Markets and Economic Productivity in Nigeria.

H02: There is no significant relationship between Development of Financial Institutions and Economic Productivity in Nigeria

H03: There is no significant relationship between Diversity in financial instruments and Economic Productivity in Nigeria.

Review of Related Literatures

For most developed economies of the world, Financial Sector Deepening is primarily aimed at accelerating economic productivity in order to achieve sustained growth in the economy. These countries have been able to harness the benefits derived from instituting vibrant financial systems to facilitate transactions within their economy and financial interactions with global financial systems. The benefits of developing a responsive financial system are enormous because it involves advancing financial markets, financial institutions and diversifying the instruments of transactions or operation. Financial Deepening is somewhat an emerging economic concept in most developing economies like Nigeria who desire to create enabling environment for higher productivity and consistent economic growth. To drive

home its importance, we reiterate Guo (2005), assertion that productivity growth has become increasingly important to promote economic growth, and to explain the regional imbalance. This is the core motivation for this study. In an economic point of view, financial dept or a developed financial system is central to mobilizing and allocating savings funds for productive purposes, assisting to reduce risk elements businesses contend with during production processes, providing structures for monetary management which forms the basis for managing liquidity in the economy, improving portfolio diversification, linking the different sector of the economy to aid economic cooperation, specialization and ultimately, economies of scale in productivity and providing enabling environment for various economic activities and policy implementation.

Thus, Nzota and Okereke (2009), averred that there is a strong and positive relationship between the financial sector deepening and economic development. Obviously, this is because a developed financial system which constitutes the concept of financial deepening play keys role in productive endeavours, Earlier, we noted that financial deepening takes different forms or dimensions in an economy and they include: Development of financial markets, Development of financial institutions and Diversity in financial instruments. This formed the basis of the variables adopted in this study. We shall be discussing here under how each of these independent variables impact on economic productivity that culminates in economic growth.

The first independent variable is 'Development of financial markets'. Theoretical and empirical literatures have revealed that there is a positive relationship between development of financial markets

and economic productivity that aids effective economic growth. Financial markets act as channels to efficiently direct the flow of funds – notably savings, investments and credits in every economy. Financial markets play very vital roles in the intermediation process. Thus, developed financial markets have the ability to facilitate capital accumulation for productive purposes, specifically, for the production of quality goods and rendering of efficient services. The Federal Reserve Bank of San Francisco (2005) averred that financial markets play critical roles in the accumulation of capital and the production of goods and services; that the existence of robust financial markets and institution facilitates the international flow of funds between countries. As a matter of fact, well-developed financial markets in viable economies with efficient financial institutions and diversity of financial instruments and products create enabling environments for borrowers and lenders to thrive and that facilitates productivity.

According to Demirgüç-Kunt and Levine (2001), together financial markets and financial institutions contribute to economic growth greatly. A well-articulated and developed financial market provides diverse financial products which have different levels of risk and in particular, pricing structures and maturity dates. This provision helps the market to offers products to meet the needs of borrowers and lenders. It allows borrowing clients to compare the cost of financing business activity to the expected returns on investment or business profit and in so doing, helps to make the right investment choice. This function enables financial markets to effectively channel resources and allocate credits to different

sectors of the economy to facilitate production processes of goods and services. An example is given of the European Union financial market. According to the Federal Reserve Bank of San Francisco (2005), in integrating existing European Union (EU) single banking market and single currency, the Euro, they created Europe-wide financial markets and institutions. These markets use the Euro to facilitate saving, investment, borrowing, and lending. Euro-denominated stock, bond and derivative markets serve all the EU countries that use the Euro. The Euro and integrated "Euro-based" financial markets and institutions make the credit allocation process in Europe more competitive and more efficient. This ensures fair allocation of credits to the different European sub-regions in order to aid productivity and enhance economic growth. Within the EU, the Euro eliminates the cross-border exchange rate risks that has been part of transactions flowing between EU countries which otherwise have different currencies.

The second independent variable of the study is 'Development of financial institutions'. Financial institutions play versatile roles in an economy by providing liquidity for productive and overall economic activities. This role is core and it is accomplished by managing financial markets as intermediaries between savers and investors, granting credits and pooling risk among clients as in the case of Insurance institutions. By managing financial markets, financial institutions promote capital market activities. A dynamic and viable capital market has the potential to attract funds domestically and across borders to expand investments, finance productivity and ultimately speed up economic development

of a nation. Theoretical and empirical literatures support the view that development of financial institutions has causal relationship with high productivity that facilitates economic growth. For instance, Liang and Reichert (2006), posits that the causality between financial development and economic growth changes with the change in economic growth cycle. On another hand, Rioja and Valev (2004) averred that the relationship between financial development and economic growth changes according to the level of financial development. Bank lending universally, provides funds for economic activities to thrive on and so, it is expected to enhance the productivity in an economy. From which ever angle it may be viewed from, the fact that appears to remain true is that there is a relationship between development of Financial Institutions and Economic productivity that culminates to economic growth. Generally, development in financial institutions varies in countries, some having better economic potentials to develop than the other. So, the intensity of financial institutions impact on economic productivity or economic growth may vary from country to country accordingly. As a matter of fact, Liang (2005) contends that the impact of financial depth on growth is only apparent in coastal regions and not in the inland in China, implying regional variations in the financial deepening-growth relationship.

The third independent variable is 'Diversity in financial instruments'. Fundamentally, this has to do with the securities traded in financial markets and institutions to raise funds used as capital by businesses for productive purposes. At this point, it is necessary to define or state precisely the meaning of financial instruments. Pack and Saggi, (2006) argued that the term has been

opened to a degree of interpretative flexibility as is often the case with industrial policies. However, Brown and Neil (2017) opined that financial instruments are instruments such as subsidized loans, credit guarantees and equity finance schemes designed to raise funds to overcome market failures and to promote productive investments. From the definition lies the importance of financial instruments. They are instrument used to raise funds and designed to promote productivity. The European Commission, (2015) averred that the use of financial instruments –including public loans, public equity or venture capital, or credit guarantees is becoming increasingly widespread in regional and local economic development. This is so because creditors and regulators as well seek new ways to leverage finance for economic productivity and other public projects. Fundamentally, the major problems associated with the use of these instruments is upswing of interest rate, the cost of funds that hinder small businesses, small industries in particular from using them for economic development.

The use of Financial Instruments has grown rapidly in recent times particularly with the advent of electronic banking. The wide spread adoption of e-banking has brought about diversity of financial products and instruments in the market. European Commission, (2015) contends that various types of financial instruments have been identified by researchers. However, the most commonly used financial instruments globally that businesses employ to raise funds include:

➢ Loans: In every business setting, loans have been the traditional and most commonly used security for funding business operations and the growth processes.

➢ Equity finance: Brown and Neil (2017), posits that Equity finance is when firms exchange share capital in return for liquidity. This occurs mostly when firms prefer to raise funds through the public rather than through banks. The investor's return depends on the profitability of the firm and investors are at liberty to dispose their investments to another investor to recoup their funds if desired.

➢ Credit guarantees: These are essentially secured credits with guaranteed repayment upon a default. European Commission (2015) gave 'First Loss Portfolio Guarantee' as an example of this type of instrument that has been in use in Bulgaria since 2011 and asserts that 4000 SMEs have benefited from it.

It is necessary to quickly emphasize that the above three financial instruments have fundamentally different structure and different mechanisms of operation, that is, their terms and conditions are different. However, in every economy, they are all channels of raising funds for productive purposes and for enhancing economic growth. Accordingly, Bondonio and Greenbaum, (2014), affirmed that Financial instruments have been heavily promoted by the European Commission primarily because they are seen as more cost-effective and market-oriented.

Research Methodology
In this section, the techniques and mechanisms employed in carrying out the study are discussed. The section includes defining the Population of the study, Sample size, Sampling techniques, Questionnaire design, Data analysis technique, Theoretical framework and Model specification. The study adopted 'Survey design' considered to be pragmatic, realistic, and comprehensive. It gives a profound scholarly knowledge of the population. The Survey was carried out through questionnaire distribution on the sample population.

Defining the Population and Sample size
According to Creswell (2005), population is the broadest level in which a group of individuals, things or features under studies possess one characteristic that distinguishes them from other group. It consists of all observations in a particular research study and it could be finite or infinite in size or scope. Since financial sector deepening is focused primarily on developments of financial markets, institutions and instruments, the Population consists of employees of all financial markets and institutions who are in the lower, middle and top managerial categories in Nigeria.

However, the study was carried out using a sample population from where inferences of general application were deduced for the population. Again, Creswell (2005), opined that a Sample population is the actual list of sampling units from which the sample or research data are selected. The sample population for this study is derived from the commercial and metropolitan centers in Edo and Delta States namely: Benin City, Warri, Asaba, Auchi, Ughelli and Uromi towns. Six hundred (600) employees from the financial markets and institutions situated in the above mentioned commercial centers in the said managerial categories constituted the sample size of the study.

Sampling Techniques and Questionnaire Design
The 'Random sampling technique' conservatively considered free from self-interest, biases and deception but conforming to established standard and rules was employed in sourcing for data. The instrument of survey was a structured

questionnaire sub-divided into two distinct sections namely: the Demographic section and the Questions with Answers options section. They were randomly administered on the sample population in various centers to elicit responses from respondents.

The questionnaire design adopted an innovation known as 'Item-Specific-Response-Options (ISRO). Wronski (2018), averred that 'Item specific' means that response options are specific to a particular survey question, however, different questions may have different set of response options. ISRO strategic item specific rating scales are considered less prone to response biases and allow respondents give superior judgment to answer response options unlike the Likert scale. Its similarity to five point Likert scale is that the ISRO item specific rating scales range from Very Affirmative; Somewhat Affirmative; Neither Affirmative nor Negative; Somewhat Negative to Very Negative and the scale from Very affirmative to Very negative are weighted 5, 4, 3, 2 and 1 respectively. The weights are employed in the computation of Pearson Product-Moment Correlation Coefficient (PPMCC) or

'r'- the statistical tool adopted for empirical analysis.

Data analysis technique and model specification

The statistical technique employed for the data analysis in this study is the Pearson's Product-Moment Correlation Co-efficient (PPMCC) denoted by the letter 'r'. PPMCC or 'r' is the 'Sample coefficient' and is considered a strong and veritable statistical parameter for measuring the correlation between variables having linear relationship. This is because of its ability to attests the direction of the relationship between the variables under study, specifying whether the direction is positive or negative and the magnitude it assumes shows the strength of relationship specifying whether it is a weak or strong relationship. Its value may be expressed in percentages or in absolute decimal figure. Obadan, (2012), averred that in order to have a precise quantitative measurement of the degree of correlation between the variables Y and X, a measure called correlation coefficient (r^{xy}) is used to refer to the Sample correlation. He defined the PPMCC or r^{xy} between the variables X and Y as:

$$\text{PPMCC or } r^{xy} = \frac{\sum (X - \overline{X})(Y - \overline{Y})}{\sqrt{\sum (X - \overline{X})^2 \sum (Y - \overline{Y})^2}} \quad \dots \quad \dots \quad \dots \quad \dots (1)$$

Where: r^{xy} = Pearson's Product-Moment Correlation Coefficient (PPMCC) between X and Y variables

X = Weighted answer response options with respect to the variables

Y = Frequency of answer response options

$\sum$ = Summation sign

$\overline{X}$ = Mean of weighted response options

$\overline{Y}$ = Mean of frequency of response options

The mathematical expression in formula 1 uses the actual values of the variables and it is pretty hard to derive or compute. To reduce the complexity of computing 'r' using

formula 1, Obadan, (2012), posits that a simpler formula expressed in deviations form, that is, the deviations of the variables from their means was derived as depicts by

equation 2. We employed formula 2 to compute the values of 'r' in the hypotheses

tested.

$$r^{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

Where   x = $X - \overline{X}$ and
          y = $Y - \overline{Y}$

Decision rule:
i.   According to Obadan (2012), as a measure of the degree of co-variability of the variables X and Y, Pearson Product-Moment Correlation Coefficient (PPMCC) or 'r' may assume values ranging   -1 to +1.
ii.   When 'r' value is zero, it implies that there is no relationship between the variables.
iii.   When 'r' value is +1, it implies is a perfect positive correlation between the variables.
iv.   When 'r' value is -1, it implies is a perfect negative correlation between the variables under study.
v.   When 'r' is squared, it is referred to as 'Coefficient of Determination (r^2)' and it portends the goodness of fit of the overall model.

Data Presentation and Analysis of Results
Presentation of data
In section 1.1 above, three hypotheses were formulated for testing. In this section, data obtained from survey are presented first in a tabular form and to fully appreciate the characteristics of the data as per each category of answer options, the data were represented on a Column chart. As noted earlier, six hundred (600) structured questionnaires were distributed randomly. However, a total of five hundred and forty two (545) questionnaires

constituting approximately 90.83% of total distribution were retrieved. The percentage of questionnaires retrieved is considered large enough to make valid inferences on the sample population.

Hypothesis one (H01): Development of Financial Markets and Economic Productivity in Nigeria
In the structured questionnaire administered, question number 4 (Q4) captured the relationship between Development of financial markets and Economic Productivity in Nigeria. We reproduce the question here as follows.

'How satisfied or dissatisfied would you say that Development of Financial Markets has enhanced Economic productivity in Nigeria?

Table 1 displays the response frequencies obtained for the question and their percentages. The table brought to light that only 23.30% of respondents were very satisfied that development of Financial Markets has enhanced Economic productivity in Nigeria. The percentage of respondents who are somewhat satisfied stood at 29.91 % thus, a total of 53.21% of respondents could be said to be in agreement that development of financial markets has moderately impacted on productivity in Nigeria.

Table 1: Responses frequencies for Development of Financial Markets and Economic Productivity in Nigeria

Response Options to Q 4	Response Frequencies for Q4	Frequencies in Percentages (%)
Very Satisfied	127	23.30 %
Somewhat Satisfied	163	29.91 %
Neither Satisfied nor Dissatisfied	65	11.93 %
Somewhat Dissatisfied	135	24.77 %
Very Dissatisfied	55	10.09 %
Total	545	100 %

Source: Field Survey, 2019.

Figure 1 Responses frequencies for Development of Financial Markets and Economic Productivity in Nigeria in Column chart.
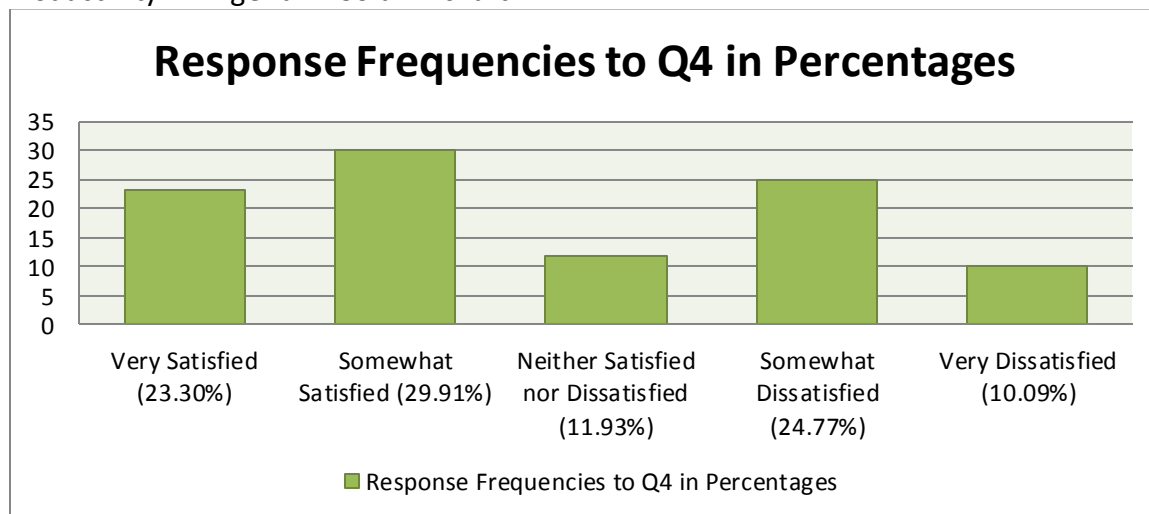
Source: Author's computation using data from field survey, 2019.

By implication, it means that financial markets have moderately contributed to economic productivity and hence economic growth in Nigeria. The two major financial markets in Nigeria are the Money market for short term funds and Capital market for long term funds. Indeed, Money market cannot be said to have proper and organized structure put in place to meet expected goals in Nigeria and the performance of the Capital market, has sort of dwindled particularly in post recapitalization era, - not many companies are patronizing it for funds lately. However, we do hope that more facts about this variable will be revealed from the empirical computation of its PPMMCC or 'r'. The data obtained for the variable were further employed in computing a Column

chart as per figure 4 to show the distinctive characteristics of the response options.

Hypothesis two (H02): Development of Financial Institutions and Economic Productivity in Nigeria.
Question number 7 (Q7) in the structured questionnaire captured the relationship between Development of Financial Institutions and Economic Productivity in Nigeria. The question is repeated below for ease of reference.

'How delighted or displeased would you say that the Development of Financial Institutions has promoted Economic Productivity in Nigeria?'

Table 2: Responses frequencies for Development of Financial Institutions and Economic Productivity in Nigeria.
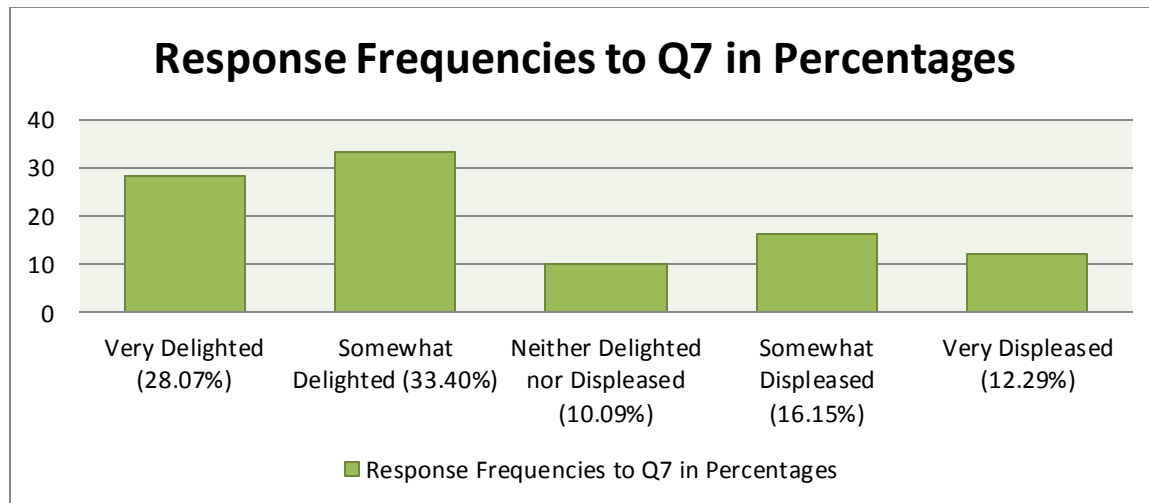
Response Options to Q7	Response Frequencies for Q7	Frequencies in Percentages (%)
Very Delighted	153	28.07 %
Somewhat Delighted	182	33.40 %
Neither Delighted nor Displeased	55	10.09 %
Somewhat Displeased	88	16.15 %
Very Displeased	67	12.29 %
Total	545	100 %

Source: Field Survey, 2019.

Table 2 presents the response frequencies obtained in figure and in their respective percentages. The table revealed that a total of 28.07% of respondents are delighted that development of Financial Institutions has enhanced Economic productivity in Nigeria and so, mat have aided economic growth. Beside, 33.40% of respondents are somewhat delighted, meaning that a total of 61.47% of respondents attested positively that development of financial institutions contributed immensely to productivity in Nigeria. Figure 4.2 exhibits the extraordinary characteristics of the response frequencies for each answer option to the question.

Figure 2 Responses frequencies for Development of Financial Institutions and Economic Productivity in Nigeria in Column chart.

Response Frequencies to Q7 in Percentages

Categories: Very Delighted (28.07%), Somewhat Delighted (33.40%), Neither Delighted nor Displeased (10.09%), Somewhat Displeased (16.15%), Very Displeased (12.29%)

Legend: Response Frequencies to Q7 in Percentages

Source: Author's computation using data from field survey, 2019

Hypothesis three (H03): Diversity in financial instruments and Economic Productivity in Nigeria.

The relationship between Diversity in Financial Instruments and Economic Productivity in Nigeria was captured by question number 10 (Q10) in the structured questionnaire. The question states as follows:

'How contented or discontented would you say that Diversity in Financial instruments has effectively aided Economic Productivity in Nigeria?'

The response frequencies obtained for the question are displayed in table 3 alongside their percentages. The characteristics or distribution of the response frequencies for Diversity in Financial Instruments and Economic Productivity appear slightly different from those of other variables. While 21.83% of respondents are very contented that diversity in financial instruments has aided economic productivity, 25.14% are to a small degree contented. Both constitute a total of just 46.97% of respondents that are positive to the fact that diversity of financial instruments has impacted on economic productivity.

Table 3: Responses frequencies for Diversity in Financial Instruments and Economic Productivity in Nigeria

| Response Options to Q10	Response Frequencies for Q10	Frequencies in Percentages (%)
Very Contented	133	21.83 %
Somewhat Contented	158	25.14 %
Neither Contented nor Discontented	47	18.53%
Somewhat Discontented	129	22.02 %

	78	12.48 %
Very Discontented		
Total	545	100 %

Source: Field Survey, 2019.

Unlike the first two variables, the positive response result is less than an average of 50% of total responses. By implication, it suggests that the variable failed the test of significance. Deductions are that 53.30% of respondents are either not certain or are somewhat or very discontented with the impact of Diversity of financial instruments on Economic productivity. One reason that can be used to explain this scenario is the fact that most respondents appear not to have comprehended the roles of financial instruments in economic activity as they do or may have of financial markets or institutions. To most of them financial instruments are just instruments of transaction, the link to economic productivity appears to elude them. However, more explicit facts about this variable will be revealed on computation of its correlation coefficient. To show clearly the distinctive characteristics of the response frequencies to the question, a Column chart displayed in figure 4.3 is constructed with the data derived from table 3.

Figure 3: Responses frequencies for Diversity of Financial Instruments and Economic Productivity in Nigeria in Column chart.
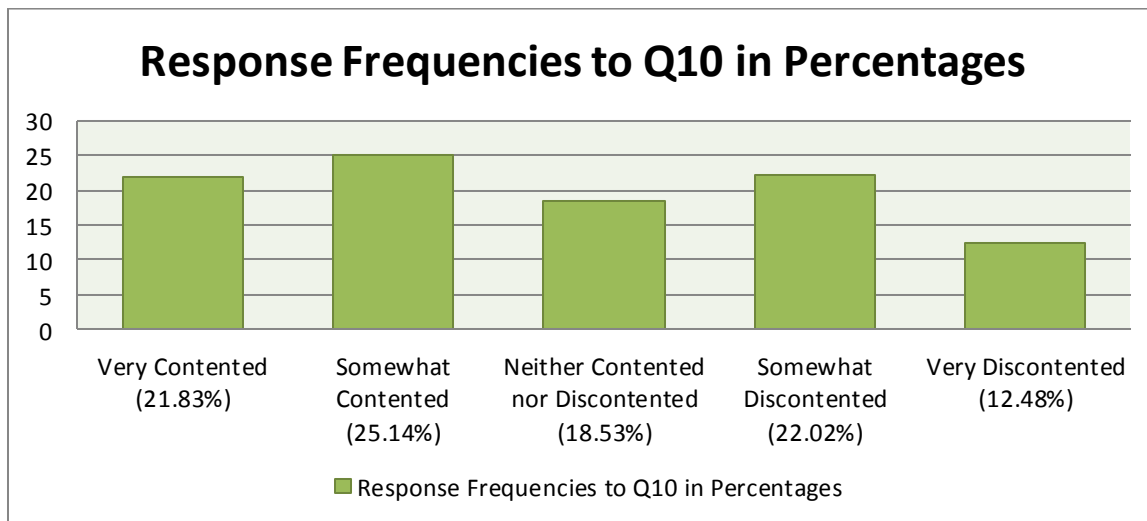
Source: Author's computation using data from field survey, 2019.

Empirical Estimation of the Model (Hypotheses Testing)
In this section, the values of Pearson Product-Moment Correlation Coefficient (PPMCC) or ('r') were estimated using formula 2 given in section 3.3. Also derived were the Coefficients of Determination (r^2) to aid our discussion of results.

Estimation of Hypothesis 1 (H01):

In table 4, the totals or summation of the 'Weighted Response Options' (X) and 'Response Frequencies (Y) employed in computing the value of PPMCC or 'r' for hypothesis one (H01) were derived; that is, the derivation of totals (∑) of variables for Development of Financial Markets and Economic Productivity in Nigeria. The Response frequencies displayed in table 4.1 were employed in the empirical estimation using formula 2.

Table 4: Derivation of totals (∑) of variables for Development of Financial Markets and Economic Productivity in Nigeria.

	X	Y	$x = X - \ddot{X}$	$y = Y - \bar{Y}$	Xy	x^2	y^2
Very Satisfied	5	127	2	18	36	4	324
Somewhat Satisfied	4	163	1	54	54	1	2916
Neither Satisfied nor Dissatisfied	3	65	00	- 44	00	00	1936
Somewhat Dissatisfied	2	135	-1	26	-26	1	676
Very Dissatisfied	1	55	-2	-54	108	4	2916
Total (∑)	15	545	00	00	172	10	8768`

Source: Authors' computation, 2019.

Mean of Weighted Answer Options;

$$\overline{X} = \frac{\sum X}{n} = \frac{15}{5} = 3$$

Mean of Frequency Response Options

$$\overline{Y} = \frac{\sum Y}{n} = \frac{545}{5} = 109$$

From equation 2; PPMCC; $r^{*Y} = \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{172}{\sqrt{10 x 8768}} = \dfrac{172}{296.11} = 0.5809$

Therefore:

The Pearson's Product-Moment Correlation Co-efficient (PPMCC) or r^{*Y} = 0.5809 and
The Coefficient of Determination (r^2) = $(0.5809)^2$ = 0.3374 or 33.74%.

Estimation of Hypothesis 2 (H02):

Table 5 was employed in estimating the total values or summation of the 'Weighted Response Options' (X) and 'Response Frequencies (Y) utilized in computing the value of PPMCC or 'r' for hypothesis two (H02). This is with respect to the derivation of totals (∑) of variables for Development of Financial Institutions and Economic Productivity in Nigeria. The Response

frequencies displayed in table 4.2 were   formula 2.
employed in the empirical estimation using

Table 5: Derivation of totals (∑) of variables for Development of Financial Institutions and Economic Productivity in Nigeria.

	X	Y	$x = X - \ddot{X}$	$y = Y - \bar{Y}$	Xy	x^2	y^2
Very Satisfied	5	153	2	44	88	4	1936
Somewhat Satisfied	4	182	1	73	73	1	5329
Neither Satisfied nor Dissatisfied	3	55	00	-54	00	00	2916
Somewhat Dissatisfied	2	88	-21	-1	21	1	441
Very Dissatisfied	1	67	-2	-42	84	4	1764
Total (∑)	15	545	00	00	266	10	12386

Source: Authors' computation, 2019**.**

Mean of Weighted Answer Options; $\overline{X} = \dfrac{\sum X}{n} = \dfrac{15}{5} = 3$

Mean of Frequency Response Options $\overline{Y} = \dfrac{\sum Y}{n} = \dfrac{545}{5} = 109$

From equation 2; PPMCC; $r^{xy} = \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{266}{\sqrt{10x12386}} = \dfrac{266}{351.94} = 0.7558$

Therefore:
The Pearson's Product-Moment Correlation Co-efficient (PPMCC) or r^{xy} =   0.7558   and
The Coefficient of Determination (r^2)   = $(0.7558)^2$ =   0.5712 or   57.12%.

Estimation of Hypothesis 3 (H03): The computation of the totals (∑) of 'Weighted Response Options' (X) and 'Response Frequencies (Y) used for the derivation of "r" for hypothesis three (H03) was carried out using table 4.6. This is with respect to the variables Diversity of financial instruments and Economic Productivity in Nigeria. The Response frequencies shown in table 3 were utilized in the empirical estimation using formula 2.

Table 6: Derivation of totals (∑) of variables for Diversity in Financial Instruments and Economic Productivity in Nigeria.

	X	Y	$x = X - \ddot{X}$	$y = Y - \bar{Y}$	xy	x^2	y^2
Very Satisfied	5	133	2	24	48	4	576
Somewhat Satisfied	4	158	1	49	49	1	2401
Neither Satisfied nor Dissatisfied	3	47	00	-62	00	00	3844
Somewhat Dissatisfied	2	129	-1	20	-20	1	400
Very Dissatisfied	1	78	-2	-31	62	4	961
Total (∑)	15	545	00	00	139	10	8182

Source: Authors' computation, 2019**.**

Mean of Weighted Answer Options;

$$\overline{X} = \frac{\sum X}{n} = \frac{15}{5} = 3$$

Mean of Frequency Response Options

$$\overline{Y} = \frac{\sum Y}{n} = \frac{545}{5} = 109$$

From equation 2; PPMCC; $r^{xy} = \dfrac{\sum xy}{\sqrt{\sum x^2 \sum y^2}} = \dfrac{139}{\sqrt{10 x 8182}} = \dfrac{139}{286.04} = 0.4859$

Therefore:
The Pearson's Product-Moment Correlation Co-efficient (PPMCC) or r^{xy} = 0.4859 and
The Coefficient of Determination (r^2) = $(0.4859)^2$ = 0.2361 or 23.61%

Discussion of Findings, Conclusion and Recommendation
Discussion of findings

This research study examined Financial Sector Deepening and Economic Productivity in Nigeria. We wish to reiterate that the independent variables, namely: Development of Financial Markets, Development of Financial Institutions and Diversity in Financial instruments served as proxies for Financial Deepening and Pearson Product-Moment Correlation Coefficient (PPMCC) or 'r' was employed for the empirical estimation. The computed values of 'r' for the three hypotheses tested are

displayed in table 5.1 for ease of reference. Also displayed in the table are the Coefficients of determination 'r^2' computed to complement the robustness of findings.

The values of both parameters; r and 'r^2' are expressed in absolute decimal and in percentages for each of the hypotheses tested.

Table 1: Summary of Results for the three null hypotheses tested

Hypotheses tested	PPMCC (r)	Coefficient of Determination (r^2)
H01: On the Development of Financial Markets and Economic Productivity in Nigeria.	0.5809 or 58.09%	0.3374 or 33.74%
H02: On the Development of Financial Institutions and Economic Productivity in Nigeria.	0.7558 or 75.58%	0.5712 or 57.12%
H03: On the Diversity in Financial Instruments and Economic Productivity in Nigeria.	0.4859 or 48.59%	0.2361 or 23.61%

Source: Authors' computation, 2019

Also mentioned earlier is the fact that Pearson Product-Moment Correlation Coefficient or 'r' serves to measure the strength and direction of linear relationship or association between a dependent variable and one or more independent variables. The table 5.1 reveals that all the values of 'r' for the three hypotheses estimated exhibited positive signs. This is an indication that the independent variables given above are all positively correlated to Economic development in Nigeria, implying that all the variables relate mutually. However, the strength of relationship or association differs for each variable. The coefficient of correlation between the variables Development of Financial Institutions and Economic Productivity in Nigeria stands highest at 0.7558 or 75.58%. This coefficient tilts towards a near perfect positive relationship. In terms of magnitude, the next coefficient of correlation is that between the variables Development of Financial markets and Economic Productivity in Nigeria standing at 0.5809 or 58.09%. A correlation

coefficient of 58.09% indicates a middling relationship. The strength of relationship appears unremarkable or best described as modest, being a little above 50%. The relationship of the variable Diversity in Financial Instruments and Economic Productivity in Nigeria may be termed inadequate or considered a fairly weak relationship with a correlation coefficient standing at 0.4859 or 48.59%. However, judging by the positive signs that all variables exhibited which indicate positive relationship, they could be considered fairly relevant in formulating policies that affect Economic productivity in Nigeria.

The second parameter employed in analysis in this study is the Coefficient of determination (r^2); the parameter that gives the total variation in the dependent variable Y that is explained by the independent variables X. In other words, r^2 gives some information about the goodness of fit of the estimated model. Based on the forgoing, the independent variables; Development of

financial markets, Development of financial institutions and Diversity of financial instruments explained 33.74%, 57.12% and 23.61% respectively, variation in Economic productivity in Nigeria. Of the three variables, only Development of financial institutions passed the test of significance because at 57.12%, it means that the variable has moderately explained variation in Economic productivity or gave fair information about the goodness of fit of the model. The values of r^2 standing at 33.74%, and 23.61% for the variables Development of financial markets and Diversity of financial instruments respectively failed the test of significance and therefore cast doubts as to their relevance in formulating policies that would affect Economic productivity in Nigeria.

Conclusion

The conclusions reached in this study are drawn from the findings discussed above. One very relevant finding was that all the estimated values of PPMCC or 'r' for all the independent variables, namely Development of Financial market, Development of Financial Institutions and Diversity used as proxies for Financial Deepening exhibited positives signs in relationship with Economic productivity in Nigeria. We therefore concluded that Financial Sector deepening is positively correlated with Economic productivity in Nigeria. What this means is that Financial Sector deepening and Economic productivity in Nigeria move in the same direction or are directly proportional. They are properly related in degree, that is, when Financial Deepening increases, Economic productivity increase and the reverse is also the case.

In another hand, the magnitude of the correlation coefficient of two independent variables namely: Development of financial markets and Diversity of financial instruments were low. However, the other variable; Development of financial institutions showed a moderately sufficient or middling coefficient. Based on these results, we concluded that Financial Sector Deepening has a somewhat weak or at best a fairly strong relationship with Economic productivity. The analysis of the Coefficient of Determination, r^2 showed that two of the independent variables failed the test of significance. The outcome of these variables countered apriori expectation and led us to conclude that they are not relevant in formulating policies that affect Economic productivity in Nigeria. However, with an r^2 value standing at 57.12%, the variable; Development of financial institutions moderately passed the test of significance and thus concluded that the variable is relevant to policies formulated to affect Economic productivity in Nigeria.

Recommendations

The concept of Financial Sector Deepening as earlier mentioned refers to the development of financial markets, financial institutions and financial instruments. From a critical view, it is equivalent to or relates to the development of the financial system of a country. In terms of financing businesses, rejuvenating and stimulating economic activities in a nation, the role of the financial system cannot be over-emphasized. So, deepening it as an effective conduit for channeling funds to sundry economic units is important. The somewhat low or middling results exhibited by the coefficients could be as a result of several factors. Since Financial Deepening is a developmental concept, one of such fundamental factors may be as a result of the poor state of infrastructures in financial markets and institutions; the use of obsolete equipment's or better put, lack of

modern and updated equipment needed for present day transactions. So we recommend that stakeholders in the markets and institutions should endeavour to provide modern infrastructures to replace some of the aging and outdated equipment's presently in use.

It is a fact that most managers of businesses do not take cognizance of the expiry dates on or obsolete equipment's until they breakdown completely. Obsolete equipments slow down productivity, waste resources in repairs and often, most of the products may constitute industrial waste.

We recognize the fact that the data for the empirical analysis were sources through field survey. We took into consideration that the judgment of some employees may be faulty as a result of improper training or incompetence on the use of some financial instruments. Others may not have understood the roles of some instruments or may not have been acquainted with them. Their judgment may also have impaired the results. On that note, we recommend training and re-training for the workforce of the financial markets and institutions particularly now that most financial transactions are machine-driven – automation.

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