



THE INSTITUTE OF CHARTERED ACCOUNTANTS OF
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8TH ANNUAL INTERNATIONAL ACADEMIC CONFERENCE ON ACCOUNTING AND FINANCE

CONFERENCE PROCEEDINGS





THE NATIONAL ANTHEM

Arise, O compatriots
Nigeria's call obey
To serve our Fatherland
With love and strength and faith
The labour of our heroes past
Shall never be in vain,
To serve with heart and might
One nation bound in freedom
Peace and unity.

O God of creation,
Direct our noble cause
Guide our leaders right
Help our youth the truth to know
In love and honesty to grow
And live in just and true
Great lofty heights attain
To build a nation where peace
And justice shall reign.



THE NATIONAL PLEDGE

I pledge to Nigeria my country
To be faithful, loyal and honest
To serve Nigeria with all my strength
To defend her unity and
Uphold her honour and glory
So help me God



ICAN ANTHEM

Bless God ICAN fount of treasure
In triumph her banner raise
Standing stronger in harmony
Building our land together
Dreams of our founding fathers
We are striving to attain
Accounting values that we share
Through all ages be sustained.

*Chorus:-
Institute of Chartered Accountants of Nigeria
Noble ICAN
Your accuracy we cherish
We uphold your integrity.*

How pleasant to see a new dawn
Building on good foundation
Moulding Accountants full of trust
To raise ICAN's banner higher
Wearing new hopes and visions
Sowing seeds of greatness
Steering ICAN to victory
A bright future is now assured.

*Chorus:-
Institute of Chartered Accountants of Nigeria
Noble ICAN
Your accuracy we cherish
We uphold your integrity*

ICAN CREED

I pledge to serve ICAN my great Institute
With all my strength and might
To be accurate, diligent and uphold integrity in all
dealings
To defend the ICAN act, Code of Ethics and its
regulations
To ensure the unity and progress of the Institute
So help me God



OPENING REMARKS BY THE CHAIRMAN, CONFERENCE ORGANIZING COMMITTEE OF THE 8TH ANNUAL INTERNATIONAL ACADEMIC CONFERENCE ON ACCOUNTING AND FINANCE

All protocols observed.

It is a great privilege to deliver the opening remarks at this 8th International Academic Conference on Accounting and Finance (ACAF), holding at the great citadel of learning, Godfrey Okoye University, Enugu, Enugu State. We are delighted to collaborate with this promising university. Our special appreciation goes to the Vice Chancellor, Rev Professor Christian Anieke, Ph.D, and the entire University Management for the kind gesture.

Our immense gratitude also goes to the Governing Council of The Institute of Chartered Accountants of Nigeria, under the leadership of our 58th President, Mallam Tijani Musa Isa, FCA. It is a rare honour, bestowed on our subcommittee by the Governing Council, to coordinate the organization of this Conference. We also appreciate the Chairman of the Technical, Research and Public Policy Committee of the Institute, Chief D.C.S. Alaribe, FCA for his support during the planning of this Conference.

I encourage every delegate to optimize the benefits that a Conference of this nature provides. The organisers have made deliberate efforts to guarantee that we have a hitch-free and intellectually rewarding programme. As much as possible, facilities have been put in place to ensure that both physical and virtual delegates have seamless participation.

As academics that are desirous of competing in the global scholarship space, you should welcome constructive criticisms of your articles. We have assembled respected experts to provide their thoughts on the numerous articles submitted for presentation at this Conference. I admonish the authors to be receptive to the various perspectives that will be canvassed on their articles. They would be worth it and eventually contribute to enriching the quality of your articles.

It is our hope that this programme will be an engaging and rewarding one for all participants. We also anticipate that you would cooperate with us in hosting the most successful academic conference of the Institute.

Once again, I express our gratitude to you all for being part of this significant event of our great Institute. I wish you all intellectually engaging and fruitful sessions.

Thank you and God bless.

Professor Julius Otusanya, FCA

Chairman, Conference Organizing Committee of 8th ACAF.



Godfrey Okoye University, Ugwuomu-Nike, Emene, Enugu State, Nigeria

ADDRESS OF THE CHAIRMAN, TECHNICAL, RESEARCH, AND PUBLIC POLICY COMMITTEE (TRPPC), CHIEF D.C.S. ALARIBE, MA, CFA, FCA, AT THE 8TH INTERNATIONAL ANNUAL ACADEMIC CONFERENCE ON ACCOUNTING AND FINANCE

All protocols observed.

I am highly honoured to welcome you all to this 8th edition of the Annual International Academic Conference on Accounting and Finance of The Institute of Chartered Accountants of Nigeria (ICAN) in collaboration with Godfrey Okoye University, Enugu, Enugu State. In its 8th edition, this Conference continues to advance scholarship and mentorship among established and budding academics, especially in the accounting and finance disciplines.

I want to assure all the delegates that, like past editions of the Conference, this 8th edition will interrogate contemporary topics with the sole aim of pushing back the limit of knowledge in areas such as financial reporting, digitalisation, and sustainability. Essentially, this Conference was borne out of the need to provide a platform for our colleagues in academia to cross-fertilize research ideas, improve the quality of their research works and establish a mentor-mentee relationship for academic scholarship.

The Ph.D. Colloquium, as one of the flagship activities at the Conference, continues to encourage the discovery of new and promising researchers who are challenging the status quo in different knowledge areas. Beyond the financial reward that the Institute has attached to the best paper at the Colloquium, the in-depth review of the submissions has significantly helped in improving the qualities of students' Ph.D thesis.

Ladies and gentlemen, let me emphasize that the discussions at this Conference will be led by well-respected academics, experienced Chartered Accountants as well as renowned Administrators. We are indeed most honoured to have Professor Austin Uchechukwu Nweze FCA, in our midst as the Lead Paper Presenter on the topic ***Sustainability and Digitalisation of Accounting and Finance for Development in Emerging Economies***.

I want to express our immense appreciation to the Vice Chancellor, Rev Professor Christian Anieke, Ph.D and the entire management of Godfrey Okoye University, Enugu, Enugu State. Thank you for relentlessly committing to the successful organisation of this Conference in collaboration with our Institute.

I wish to thank our two guest Speakers, Professor Kemi Yekini, FCA and Associate Professor Olayinka Moses, CPA (Australia) for accepting to be the Guest Speakers during this Conference.

I must tender our unreserved gratitude to the Chairman and members of the Academic Conference subcommittee of the Institute, ably led by Prof Julius Otusanya, FCA. Thank you for working tirelessly to



Godfrey Okoye University, Ugwuomu-Nike, Emene, Enugu State, Nigeria

ensure we have a productive and impactful Conference. We also acknowledge the efforts of the Local Organising Committee under the leadership of Dr Modesta Egiji, FCA. Thank you for your sacrifices towards the success of this programme.

Once again, I welcome all our guests and delegates, attending physically and virtually to this Conference.

I wish you all intellectually engaging sessions.

Chief D.C.S. Alaribe, FCA

1st Deputy Vice President & Chairman, Technical, Research, and Public Policy Committee (TRPPC), ICAN.



Godfrey Okoye University, Ugwuomu-Nike, Emene, Enugu State, Nigeria

**WELCOME ADDRESS BY THE 58TH ICAN PRESIDENT,
MALLAM TIJJANI MUSA ISA, B.Sc., MlOd, FCA
AT THE 8TH ANNUAL INTERNATIONAL ACADEMIC CONFERENCE ON ACCOUNTING AND FINANCE**

All protocols observed.

It is with utmost pleasure that I welcome you all to the 8th edition of the Annual International Academic Conference on Accounting and Finance of The Institute of Chartered Accountants of Nigeria (ICAN) hosted by Godfrey Okoye University, Enugu, Enugu State. This Conference provides an invaluable opportunity for the development of innovative and thought-provoking research in Accounting and Finance.

We unreservedly thank the Vice Chancellor, Godfrey Okoye University, Rev Professor Christian Anieke, PhD, for accepting our partnership proposal on the 8th Academic Conference on Accounting and Finance. We are indeed proud to collaborate with the University in our mutual commitment to promote quality research.

I want to take this moment to acknowledge the presence of the lead paper presenter at this Conference, an eminent scholar and a Chartered Accountant of repute, Professor Austin Uchechukwu Nweze FCA, the Rector of the Institute of Management and Technology, IMT, Enugu. I equally welcome all delegates; both those physically present and those joining us online. Your presence here is greatly appreciated and we look forward to your contributions and participation towards a productive and engaging Conference.

Dear Esteemed participants, this hybrid Conference themed **Sustainability and Digitalisation of Accounting and Finance for Development in Emerging Economies** could not be more apt. We now live in a time of exciting technological innovations. Economic paradigms are shifting, and digitalisation is driving transformational change. Digital technologies including Artificial Intelligence (AI), blockchain technologies, and many others have emerged to be one of the various suitable solutions to aid growth in developing economies.

Sustainability in Accounting refers to the integration of environmental, social, and governance (ESG) criteria into business or investment decisions. When combined, sustainable digital finance can take advantage of emerging technologies to analyse data, power investment decisions and grow jobs in sectors supporting a transition to a low-carbon economy. I am confident that the papers that are going to be presented will elucidate the main theme and the diverse sub themes of the Conference.

As customary of the Conference, this 8th edition provides a valuable platform for academics to explore the latest studies in different areas of expertise, as well as gain insight into diverse contemporary issues in the accounting profession. This Conference also avails participants the golden opportunity to network and initiate good connections, especially promising academics who wants to be mentored in the conduction of quality and globally accepted research.



Godfrey Okoye University, Ugwuomu-Nike, Emene, Enugu State, Nigeria

In the Institute's unwavering commitment to continually bridge the gap between the practicality of the market and research theories, we put platforms like this conference in place annually to create an avenue for practising professionals and our academic counterparts to proffer workable solutions to the several social economic challenges rampaging our Nation. While we admit that it's quite unfortunate to have a good number of initiatives that have emanated from past recommendations from the ivory tower and the academic neglected, we remain undeterred in contributing to the national growth and development.

Therefore, this Conference does not only serve as a pathway for academics to exchange knowledge and receive inputs on their research papers, it also serves as an opportunity to deliberate on the state of the Nation and make our voices heard as stakeholders. I am pleased to inform you that exceptional papers and profound recommendations from this Conference will be recommended for publication in the prestigious International Journal of Contemporary Accounting Issues (IJCAI) of the Institute.

Dear esteemed participants, let me reemphasize that the Institute remains dedicated to partnering with relevant stakeholders for capacity building and continuous professional development of both academics and practitioners in our noble profession. We will continue to utilize our various platforms to support Nigerian academics to participate in thought provoking and globally acceptable research.

As I mentioned earlier, papers submitted will go through a detailed review by seasoned professionals on the various subject matters, I, therefore, encourage all presenters to be open minded to receive criticisms and inputs made on their research. I equally implore all participants to not hold back from providing constructive criticisms and quality input on the papers to be presented at this Conference.

I want to express our profound gratitude to the Technical, Research and Public Policy Committee (TRPPC) of the Institute ably led by the 1st Deputy Vice President of the Institute, Chief D.C.S. Alaribe, FCA. We also appreciate the dedication of the Academic Conference sub-committee of TRPPC, ably led by Prof. Julius Otusanya, FCA. Thank you all for sacrificing your time and contributing your professional knowledge to ensure the success of this conference. I equally acknowledge the committed efforts of the Local Organising Committee (LOC), led by Dr Modestus Egiji, FCA towards the successful organisation of this Conference.

Once again, I welcome all our guests and delegates to this Conference.

Thank you for your rapt attention and I wish you all an intellectually productive time at the Conference.

Mallam Tijjani Musa Isa, BSc, MlOD, FCA
58th President
The Institute of Chartered Accountants of Nigeria
February 15, 2023.



Godfrey Okoye University, Ugwuomu-Nike, Emene, Enugu State, Nigeria

**A KEYNOTE ADDRESS BY THE VICE CHANCELLOR OF GODFREY OKOYE UNIVERSITY DURING
THE 8TH ANNUAL INTERNATIONAL ACADEMIC CONFERENCE ON ACCOUNTING AND FINANCE
ORGANIZED BY THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA IN
COLLABORATION WITH GODFREY OKOYE UNIVERSITY HELD ON 15/16 FEBRUARY 2023**

Protocol

On behalf of the Governing Council, the senate, the staff and students at Godfrey Okoye University, I heartily welcome all participants to the 8th Annual International Academic Conference on Accounting and Finance to our University, the Catholic University of Enugu. I welcome particularly the President and all members of the Institute of Chartered Accountants of Nigeria (ICAN) to our University. I am delighted that this ICAN Conference is taking place in our University and in collaboration with us.

I was exceedingly happy when I received the favourable report of the ICAN inspection committee on facilities for hosting this conference. It again confirmed that our effort in providing necessary facilities that promote sound teaching and learning here in Thinkers Corner and at our incredibly beautiful main campus are steps in the right direction. The hosting of the conference here will certainly give us the motivation to beat our won record.

The theme of this conference “Sustainability and Digitalization of Accounting and Finance for Development in emerging Economies” is not only relevant but also imperative now that our economy is far from being rosy. Everyone can see and feel the putrefying state of the Nigerian economy. Many are asking today what we can do save the sinking ship of the Nigerian economy. I believe that the accounting profession with its vast knowledge in integrated reporting, sustainability accounting and digital technologies will certainly provide answers and solutions as well as produce the direction we should go in the quest for our economic growth.

The principles of integrated reporting give companies the opportunity to communicate their strategies, governance, performance, and prospects in their operating environment in order that value may be created in the short, medium, and long terms. For integrated reporting to be meaningful in an organization, it must have strategic focus and future orientation. It must have connectivity of information that will emphasize interrelatedness and dependencies of factors that are useful in value creation. It must also maintain adequate stakeholder relationships to respond appropriately to legitimate needs. Furthermore, reliability and completeness of information about all material matters must be pursued in a balanced form without material errors. For accounting information to make meaning over time, it needs to be consistently and comparably presented. These are the inevitable principles of integrated reporting that accountants must pursue in a new era of accounting practice.

Sustainability accounting appears to have been popularized by globalization. External stakeholders now demand to know more about a firm’s performance through disclosure of non-financial information. In this era of high information, accountants can no longer afford to withhold information from relevant stakeholders. Any attempt to do so will be counterproductive. This is because informed stakeholders now see sustainability



accounting as a veritable tool to identify, evaluate and manage both social and environmental risks through proper identification of resource efficiency and cost savings that will help in utilizing financial opportunities.

Accounting, as a management science, must evolve with changes in the human society. As humanity is moving towards digital technology, accounting cannot be left behind; otherwise, it will lose its essence. Accountants must be abreast of all forms of digital technology that include, but are not limited to, computers, soft wares and artificial intelligence that guarantee speed, accuracy, and reliability of results of operations for global competitiveness as well as relevance.

Accounting all over the world is regarded as the language of business. This implies that improvement in accounting processes will directly and significantly affect business outcomes. Accountants must, therefore, be conscious of this and prepared to influence business outcomes always. In a technology-driven society, accountants must be fully involved in the principles of integrated reporting, sustainability accounting and digital technologies to influence accounting and businesses.

Finally, that the Nigeria economy is falling apart is no breaking news. Many businesses are in a messy condition and require urgent resuscitation. The role of accountants is crucial in reviving the economy and businesses in this country. I, therefore, urge the Institute of Chartered Accountants of Nigeria as the foremost accounting professional body to take a leading role in the onerous task of revamping Nigeria's shattered economy and businesses.

Thanks for being here. God bless you!

Rev. Fr. Prof. Dr. Christian Anieke

Founding Vice Chancellor of Godfrey Okoye University

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DIGITAL CURRENCY AND ITS CHALLENGES ON AUDIT PRACTICE

AUDU, Solomon Ibrahim

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Abstract

A review of the anticipated Finance Act in Nigeria 2022 shows that taxes are intended to be raised on cryptocurrency transactions even though the law in Nigeria does not recognize cryptocurrency. However, there is the e-Naira which is also a digital currency that utilizes the block-chain technology. In the light of this the auditing profession needs to ensure that the understanding of these set of transactions are understood otherwise, it poses a risk to audit engagement and audit might lose its relevance. This study is therefore designed to examine the challenges that digital currency transactions will pose to the practice of auditing. The qualitative research method was adopted in this study and the desk review research design was used to extract the challenges pointed out from existing papers in accounting literature. This study shows that digital currency transactions pose a risk to the auditing profession due to lack of full understanding of the dynamics that revolve around such transactions. It is recommended that auditing standards be created to guide auditors in practice and education curriculums for accountants both in study and practice be updated with detailed information on such contemporary issues.

Keywords: Audit evidence, Audit Standards, Block chain technology, Digital currency, Distributed Ledger

1. Introduction

Auditing involves the independent examination of financial reports by a professional (competent individual) to give an independent opinion and improve the credibility of the financial report. However, this function of independent examination might require the auditor to examine financial transactions of specialized businesses in which the auditor might need to rely on other specialists to carry-out their function. This means that auditors in such circumstances cannot competently give a report on a technical matter without considering the work of another competent specialist. This is the aim of the International Standards on Auditing (ISA) 620.

Block chain technology which is a twenty-first century disruption has come with its benefits and challenges (Lombardi *et al.*, 2021). One of such challenges is the full understanding of how it is operated, evaluating the risk of block chain transactions, amongst others (Lombardi *et al.*, 2021). For instance, the custody of this set of assets are held by various custodians which provides a reliability challenge for auditing.

It's important to point out that the big 4 audit firms are skeptical in rendering audit service to the cryptocurrency firms (Roberts, 2022). On the other hand, firms that once rendered audit service to firms that deal with cryptocurrency have begun reviewing their operations towards bitcoin trading firms. Various studies have been carried out to examine the contribution of cryptocurrency on various economies. For instance, Siyanbola *et al.* (2021) showed how cryptocurrency transactions did not significantly contribute to economic development. Furthermore, their study showed how cryptocurrency did not have a significant influence on illicit funds but revealed that it positively affected the flow of illicit funds in Nigeria. Mazikana (2018) opined



that cryptocurrency has a lot of prospective benefits but also have challenges which comes along with it. Agu (2020) reported on the wide use of cryptocurrency among various territories on the African continent even though some countries haven't legalized its use. Dion-Schwarz *et al.*, (2019) however pointed out that the low level of regulation on cryptocurrency has led to its misuse in illegitimate activities aside from the genuine economic interest.

Also, the development of cryptocurrency as a form of digital asset has come with its challenges on accounting which is described as the language of business as it is used to represent all commercial transactions into meaningful summary so that intended users can take the right decision.

Audu *et al.*, (2022) opined that the accounting profession value is a function of the public perception, therefore, with the challenges presented by the advent of cryptocurrencies, this can dampen the perception of the public on the accounting profession as with the case of FTX which failed in December 2022 and led to speculations on the audit reports provided prior to its failure (Roberts, 2022). Hence, to maintain the value placed in the accounting profession, there is a need to better understand the challenges posed by the advent of digital currencies and the measures that can be taken to mitigate the identified challenges.

Various studies (Gokoglan *et al.*, 2022; Jakovljevic, 2022) have been carried out to evaluate the influence of cryptocurrency on the accounting profession. Despite these studies, Adeleke (2019) shows that there still exists paucity of studies in this direction from the African continent which creates a knowledge gap. They also pointed out that the few studies carried out on the African continent employed the survey research technique which creates a methodology gap. Therefore, this study intends to fill the identified gaps by examining the influence of digital currency on audit practice.

The remaining part of this paper shows a review of the concepts, theory and existing literature. The study further shows the methodology of the study, the discussion of the findings, conclusion and recommendation.

2. Literature Review

2.1 Conceptual Review

The main concepts in this studied are briefly examined in this section as shown below:

Digital Assets

Digital assets are intangible assets that are stored in a digital form. Digital assets can be described as virtual assets which suggests that the assets are real but not in a real form. They are stored in a digital form which suggests that their values are created not because of their physical form (Nian & Chuen, 2015). Digital assets can exist in the form of digital documents, motion picture, audible content, and any other form which are

stored electronically with computers or with the aid of telecommunication devices such as cryptocurrencies (Zhang & Gourley, 2009).

Broby and Paul (2017) opined that block-chain technology is malleable by providing a unique identity for each digital coin that allows it to retain its value. They are maintained by digital autonomous organization (DAO) which are not entities that are recognized by law such as companies, but they operate just as companies to provide services that are required for the transmission and storage of the digital money (Ringelstein & Staab, 2009).

Auditing Challenges of Digital Assets

Hegazy and Nahass (2012) explained that in auditing digital assets, the challenge of multiple jurisdictions arises whereby the issues bordering on the laws of the various jurisdictions will impact the nature of the audit. Broby and Paul (2017) pointed out that digital assets also have a challenge of being able to initiate transactions remotely without being able to easily identify the initiator of such transactions. In addition, they pointed out that transactions of digital assets are not time stamped thus making it difficult for the auditor to recognize the period where the transaction falls into. Furthermore, digital currencies such as cryptocurrency have ephemeral values which are determined by the amount of confidence generally held by holders of such asset. This makes it highly volatile, and the value cannot be reliably maintained even though the quantity of coins remains unchanged. In the auditing process, verification of transactions is critical to the overall quality of the audit process. However, digital currencies have the challenge of not being able to ensure that such currencies reliably belong to the firm under review. Audit opinions are carefully formed based on the audit evidence gathered. Audit evidence can be described as the documentary trail shown on which audit opinions are formed (Broby & Paul, 2017).

In addition, Jakovljevic (2022) opined that there is a need for auditors to be trained such that auditing skills are upgraded to handle the peculiarity posed by the operations of cryptocurrency. Balde (2020) further mentioned that most auditors lacked the capacity and the required skill to handle such tasks.

Auditing process involves gathering of audit evidence that shows the valuation of assets or transactions. Pimentel *et al.*, (2020) revealed that fair value was not easily determined which is used in cryptocurrency transactions. Therefore, the valuation of cryptocurrencies is volatile and can put the auditor at risk.

Confirming the existence of the cryptocurrency is a challenge as the movement of cryptocurrency can be carried out without the initiator being restricted to a particular geographic location and without clearly identifying the initiator of such transfers (Broby & Paul, 2017).

The above is like the confirmation of ownership of cryptocurrency balance (Gauthier & Brendan; 2021) where the amount of cryptocurrency presented cannot be truly traced as all belonging to the reporting entity due to the anonymous nature adopted in the distributed ledger.

Furthermore, Balde (2020) showed how there is a need for full understanding by auditors of the operations of the distributed ledger. Jackson (2018) therefore suggested the need for training of accounting professionals.

Finally, a current challenge being faced is the absence of regulation or standards (Vincent & Winkins, 2020; Khan, 2022). These challenges are a compilation of various studies that need to be handled within the accounting profession for it to remain relevant.

2.2 Theoretical Review

Two theories are reviewed in this study which are:

Technology Acceptance Model Theory

The theory states that there is a process for users of a new technology to follow before they adapt to its use. The theory identifies behavioral intention and the attitude of the users as the main influence on their use of the new technology put in place. These are being moderated by the users' perception of the new technology's usefulness and ease of use. The development of the theory is credited to Davis, F.D. in 1989. The theory is seen to be an extension of the theory of reasoned action.

Benbasat and Barki (2007) opposed the theory for not being to accurately predict the point where users of the new technology will align with its use. In addition, Bagozzi (2007) laid credence for the variations to the theory as a weakness on its own. However, Workman (2007) opined that ease of use and users' perception do indeed influence users' acceptance of a new technology.

From the foregoing, as it relates to audit practice, regulation on digital currency is seen to be influenced by the understanding of auditors about cryptocurrency and the perception of the auditing regulatory body on the use and legitimacy of cryptocurrency.

Theory of Institutional Isomorphism

The development of the theory of isomorphism is credited to Paul DiMaggio and Walter Powell in the year 1983. Isomorphism theory states that a change is carried out in an institution in line with a change in its environment (DiMaggio & Powell, 1983). This change can be because of pressure by professional regulatory bodies (normative), pressure from other bodies in which the institution is dependent upon (coercive) and voluntarily imitation due to the perceived benefits (mimetic). Therefore, the accounting profession needs to

take deliberate actions in channeling a guide on how it members (professional accountants) handle digital asset transactions.

2.3 Empirical Review

Some of the existing literature carried out in the direction of block-chain technology and auditing are reviewed in this section. For instance, Khan (2022) assessed the issues with audit regulation on block-chain technology. Qualitative research method was used in the study. The study showed that block-chain technology has a lot of prospects, but it is not fully understood now hence, the challenge to set audit regulation around it. In a similar attempt on the examination of the need for auditing standards, Gauthier, and Brendan (2021) assessed the influence of block-chain technology on reporting and auditing procedure. A qualitative research method was employed, and interviews were conducted on selected auditors to view their perception of how block-chain technology influences the auditing procedure. The outcome from the study revealed that there is demand for IT audit standards. Similarly, Vincent and Wilkins (2020) evaluated the issues associated with auditing cryptocurrencies. Qualitative research method was used in the study. There are no standards to govern audit procedure of cryptocurrency. However, Shehada and Shehada (2020) examined the potential challenges that cryptocurrency transactions present to accounting. The survey method was employed with primary data collected the conduct of questionnaire. They revealed that IFRS deals sufficiently with the complexities presented by cryptocurrency transactions which is contrary to earlier calls for the development of standards to handle digital assets.

Jakovljevic (2022) examined the challenges that cryptocurrency presents to auditors. A qualitative research method was used, and primary data was gotten after administering questionnaire on selected 329 respondents. There is a need for auditors to be trained sufficiently to overcome the challenges of auditing posed by cryptocurrency. Similarly, Jackson (2018) showcased the result of block-chain technology on auditing. The survey method was employed with primary data collected the conduct of questionnaire. There is a need for training existing professionals and regulation on how to audit such transactions.

Pimentel et al (2021) showed reasons why there is a need for training among audit professionals. They arrived at this by examining the challenges associated with block-chain technology and auditing. Qualitative research method was used, and primary data was collected after conducting interview on the selected respondents. Highlighted that the determination of fair value, third party holding and the variations in its practice among geographical territories could serve as factors that will hinder the audit procedure. Prux et al (2021) also provided a rationale for training of auditors. This was shown from their study after assessing the potential and threats of using block-chain technology in public sector transactions. Descriptive research

design was used, and primary data extracted using questionnaire which was administered. Blockchain technology is not fully understood by accounting professionals. In addition, Balde (2020) assessed the level of awareness amongst Malaysian auditors on block-chain technology. Primary data was gathered after administering questionnaire on 65 selected auditors. Auditors still understand little about block chain technology. Finally, Barandi et al (2020) examined the impact of block-chain technology on continuous auditing. The survey method was employed with primary data collected the conduct of questionnaire. There is a need for auditors to update their knowledge of block-chain technology too remain relevant.

Despite these challenges, some other studies have shown some of the potential benefits of digital assets. Gokoglan et al (2022) examined the challenges that block-chain technology has on audit activities. Qualitative research method was used, and a desk review design was employed. Block-chain technology will reduce the cost of monitoring as it provides an audit trail through its system.

Lombardi *et al* (2021) investigated the influence of block-chain technology on Auditing. Desk review was carried out on existing literature. The study showed a guide for future research and showed how block chain can assist audit implementation.

Broby and Paul (2017) assessed the auditing techniques in existence used in auditing digital assets. Desk review was carried out on existing literature. They pointed out that the nature of digital assets provides that they are self-audited. However, these assets still have challenges which need to be addressed and the current audit techniques cannot effectively handle the auditing process of digital assets.

3. Methodology

The qualitative research method was employed in carrying out this study by reviewing exiting literature to extract information that sharpened the discussion of this study. The desk research design was then used to extract information that sharpened the discussion in this study.

4. Discussion of Findings

The result of the review carried out in this study shows that the challenges that face auditing can be summarized into problems associated with gathering audit evidence, problem of auditors fully understanding the nature of cryptocurrency transactions and the absence of regulation or standards to guide the practice of auditing on issues that revolve around cryptocurrency.

Based on the technology acceptance model, it suggests that the accounting profession in general need to brace up and recognize that distributed ledger is an innovation that has come to stay which have been in existence since about 2010 (Broby & Paul, 2017). Furthermore, from the theoretical base of the institutional isomorphism which shows how change is being affected based on the environment, the accounting profession is not aliened to change as the level of commercial activities over time has influenced the

accounting profession. Therefore, the distributed ledger system should be seen and recognized as such a change that will also influence the accounting profession and as such technical guide should be provided in the form of both financial reporting and auditing standards.

5. Conclusion and Recommendation

This study was carried out to examine the challenges posed on audit practice by digital assets. The study shows that indeed there are challenges which face the accounting profession which have not yet been fully taken care of. Based on the outcome from this study and in a bid to surmounting these challenges, the following recommendations are given:

- i. Laws need to be enacted by the legislature in Nigeria to ensure that sufficient audit evidence can be provided on cryptocurrency transactions in Nigeria.
- ii. Accounting and auditing standards should be clearly given such so that accountants can properly handle such transactions; &
- iii. Tertiary education curriculums in accounting and continuous membership training of professional accountants in practice should be updated with the modification to standards created around digital currency. Such that, newly graduated accountants and already existing accountants are equipped on ways to handle cryptocurrency transactions.

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THE ROLE OF WHISTLEBLOWING IN CURBING CORRUPTION IN THE PUBLIC SECTOR

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Abstract

This study was set out at exploring the role whistleblowing can play at combating corruption in the health sector and the public sector in general. Survey design was adopted, and data were collected from respondents in University of Benin Teaching Hospital. From a population of 500 respondents made up of Accountants, Auditors and top civil servants, a sample of 232 was selected. Data were collected and analysed using tables and percentages while the hypothesis were tested using chi-square test statistic. The outcome of the study shows that there is positive relationship between whistleblowing and combating corruption in the health sector. The study concludes that the role of whistleblowing in combating corruption in the health sector is vital. Based on this, the study recommends among others that government should introduce financial and non-financial incentives that will encourage staff in public service to blow the whistle as soon as corrupt cases are established.

Keywords: Corruption, fraud triangle, governance, public trust, whistleblowing.

1. Introduction

According to Gbegi & Adebisi (2015), financial fraud in advanced countries is often reported in both private and public sectors. The problems faced by third world nations particularly Nigeria is that fraud is common and affects a lot of citizens and in most cases the perpetrators go scout free. This is to say that, only in a few instances are the nefarious act uncovered on time, investigated, prosecuted and adequate punishment given. Fraud has been cited as Nigeria's biggest single problem both in public and private sectors (Rabiu & Noorhayati, 2018). It has not only broken public trust in government, but it has cost the government and people of Nigeria #billions of naira, due to corrupt management of public companies, unrealized public projects and deteriorated infrastructure caused by looted maintenance budget (Eliezer & Emmanuel, 2015; Gbegi & Adebisi, 2015).

Overtime, it has been recognized that most of the fraud in the public sector has been perpetrated by persons in positions of power, and the same group of individuals are expected to be in charge of these assets, and the set of internal controls in place are not adequate to deter, track and discourage such activities (Adebisi & Gbegi, 2015). Internal auditors in place in the public sector are faced with the issue of being hired by



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organisations and thus their integrity cannot be counted on. Much literature review has not been undertaken to decide whether accounting can help identify and avoid financial misconduct in the public sector (Popoola, Che-Ahmad & Samsudin, 2014).

A leading professional services firm, PricewaterhouseCoopers (2016) recently presented a report titled Impact of Corruption on Nigeria's Economy to the Vice President, Prof. Yemi Osinbajo, at the Presidential Villa, Abuja. The Price waterhouse Coopers (PWC) team was led by Mr. Uyi Akpata. The results of the study show that corruption in Nigeria could cost up to 37% of Gross Domestic Products (GDP) by 2030 if it's not dealt with immediately. This cost is equated to around \$1,000 per person in 2014 and nearly \$2,000 per person by 2030. Corruption is said to be associated with poor public finance management and provision of public goods.

It is considering the above that this research intends to focus on the relevance of investigate the opinions of health workers in UBTH about the ability and capability of the Civil Servant in curbing financial corruption through whistle blowing. Specifically, the objectives of the study are as follows:

- (i). To determine the role Civil Servant should play in whistleblowing to curb financial corruption in Nigeria Public Sector
- (ii). To ascertain possible hazards inherent in whistleblowing in curbing financial corruption in Nigeria Public Sector

The hypotheses of the study seek to find out if there is a significant relationship between Civil Servant and curbing financial corruption through whistleblowing in Nigeria Public Health Sector. If the identified inherent hazards have no statistically significant effect on Civil Servant as regards their role in curbing financial corruption in Nigeria Public Health Sector.

Previous research work on corruption has always highlighted traditional methods, like audit, segregation of duties and the use of anticorruption agencies. Since the introduction of whistle blowing policy during the President Jonathan administration, not much emphasis has been placed on that mode of curbing corruption, hence this work is focused on investigating the role whistleblowing has had on the checking corruption on the health sector.

2. Literature Review

2.1 Concept of Corruption

Safiullah (2017), the word corruption is a complex and beguile phenomenon. Corruption takes place not only in the finance field, but in multifarious domains. There are many kinds of corruption in our social environment such as administrative corruption, political corruption, financial corruption etc. Corruption does not merely refer to the unethical behavior of people in a society. The United Nations calculations claim that more than \$1 trillion is disbursed in bribes each year while an estimated \$2.6 trillion is carried off annually through financial corruption.

Oboh (2012), corruption, for most of us, almost immediately evokes images of the third world especially countries like Nigeria, Mexico, and India. Whilst we may concede that corruption exists in developed countries it is generally thought to be under control. It seems like a comfortable zone for us as a nation. Safiullah, (2017), corruption is a Nigerian way of life, no matter how we want to pretend otherwise. It is endorsed by our masses, supported in the religious circle and above all encouraged by the faulty system, the institutions. The politicians, businessmen and women, Civil Servants, Academics, religion personalities, teachers, traders, judiciary, etc cannot operate or go in a different direction towards probity and accountability because they are all in the same bus driving in one direction and fueled by impunity. Similarly, the Economic and Financial Crimes Commission (EFCC) – was created to eradicate economic and financial crimes through prevention, enforcement, and coordination.

2.2 Financial Corruption

Financial corruption in government has directly and indirectly led to retarded economic growth and development in Nigeria. In 2013, Transparency global barometer mentioned the Nigerian Police and Political parties as the two most corrupt institutions in Nigeria. The Nigerian Pole is more occupied with bribery, extortion, and blackmail, while the political parties are rooted with financial corruption running into billions of Naira, dollars, and pound sterling.

Ncheta (2016) noted that at Independence, Nigeria was projected as the nation to lead Africa out of its third world status, into a continent of pride, worthy of competing with the developed world on every aspect of human development index. Abubakar Tafawa Balewa promised the rest of the continent and the world, that Nigeria “shall not fail for want of determination”. However, Fifty six (56) years down the line, Nigeria has

recorded remarkable progress, and equally tremendous failure. Corruption has been seen as the bane of our democracy and development as a nation.

Furthermore, the fulfillment of rules implies several costs, the cost of a rule is a function of time- loss and the information needed to fulfill it. One possible explanation for corruption is because people may pay illegal and informal taxes (bribes) which allow them to avoid a rule, a penalty, etc. Consequently, rules and laws modify the decision-making process (Gherzi, 2006).

In general terms, corruption perception has favored the growth of institutional instability and the deterioration of the relationships among individuals, institutions, and states. Moreover, the perception of economic corruption would have more devastating effects than corruption itself; it generates a “culture of distrust” towards some institutions.

2.3 Forms of Corruption in the Health Sector

As noted by Transparency international (2022) in their report on Nigeria, notable corruption cases in health sector ranges from.

1. Corruption associated with construction/rehabilitation of health facilities such as bribes, kickbacks and political considerations influencing the contracting process, contractors fail to perform and are not held accountable, which result to high cost, low quality facilities and construction work, Location of facilities that does not correspond to need, resulting in inequities in access, biased distribution of infrastructure favouring urban- and elite-focused services.
2. Purchase of equipment and supplies, including drugs such as bribes, kickbacks and political considerations influence specifications and winners of bids. Collusion or bid rigging during procurement, lack of incentives to choose low cost and high-quality suppliers, unethical drug promotion, suppliers fail to deliver and are not held accountable. It led to high cost, inappropriate or duplicative drugs and equipment, inappropriate equipment located without consideration of true need Sub-standard equipment and drugs, inequities due to inadequate funds left to provide for all needs.
3. Distribution and use of drugs and supplies in service delivery such as theft (for personal use) or diversion (for private sector resale) of drugs/supplies at storage and distribution points, sale of drugs or supplies that were supposed to be free, which lead to lower utilization, patients do not get proper treatment, patients must make informal payments to obtain drugs, interruption of treatment or incomplete treatment, leading to development of anti-microbial resistance
4. Regulation of quality in products, services, facilities, and professionals such as bribes to speed process or gain approval for drug registration, drug quality inspection, or certification of good manufacturing

practices, bribes or political considerations influence results of inspections or suppress findings, biased application of sanitary regulations for restaurants, food production and cosmetics, biased application of accreditation, certification or licensing procedures and standards. Which lead to sub-therapeutic or fake drugs allowed on market, marginal suppliers are allowed to continue participating in bids, getting government work, increased incidence of food poisoning, spread of infectious and communicable diseases, poor quality facilities continue to function, incompetent or fake professionals continue.

5. Education of health professionals such as bribes to gain place in medical school or other pre-service training, bribes to obtain passing grades, political influence, nepotism in selection of candidates for training opportunities, which lead to incompetent professionals practicing medicine or working in health professions.

6. Provision of services by medical personnel and other health workers such as use of public facilities and equipment to see private patients, unnecessary referrals to private practice or privately owned ancillary services, absenteeism, informal payments required from patients for services, theft of user fee revenue, other diversion of budget allocations. which lead to government loses value of investments without adequate compensation, employees are not available to serve patients, leading to lower volume of services and unmet needs, and higher unit costs for health services actually delivered, reduced utilization of services by patients who cannot pay, impoverishment as citizens use income and sell assets to pay for health care, reduced quality of care from loss of revenue, loss of citizen faith in government.

7. Diversion of revenue by revenue and other staff in the hospital: Revenue expected to be paid by patient for services rendered are usually under remitted or diverted by some revenue staff and other member of staff in the hospital this have been a major financial fraud in the hospital as revenue staff connive with other health profession alike to perpetuate this unwholesome act/.

2.4 The Effects of Corruption on Nigeria's Health Sector

Nigeria is tagged with some of the worst health care statistics in the world. This makes the country one of the least in virtually all development indexes. Ironically, Nigeria has not suffered any major natural or man-made disaster like the countries who rank higher. The World Health Organization currently positions the Nigerian health system at the 197th place of 200 WHO countries evaluated. According to a report by UNDP, life expectancy in Nigeria has declined drastically from 47 to 43 years. Nigeria accounts for 10% of the world's maternal mortality rate in childbirth whereas it constitutes only 2% world's population (WHO, 2015). One in

every five Nigerian children die before their 5th birthday while over a million Nigerian children die from preventable diseases yearly. The immunization records of Nigeria also show that only 18% of Nigerian child receive full immunized by their first birthday (WHO, 2015). Malaria also kills the Nigerian child more than any other disease.

Despite these indices of poor health services in the country, the Nigerian Government at all levels budget less than 5% on health, despite its signatory to the 2000 Abuja Declaration to increase health budget to 15%. Corruption, therefore, has placed the Nigerian Primary Health Care system in a state of total breakdown. Primary Health Care centres are in disarray with structures adorned with 'expired drugs and cobwebs. (Hadi, 2015). Evidence from an International Monetary Fund (IMF) reports show that corruption has a devastating negative effect on health indicators like infant and child mortality, female education, health budget and spending. Corruption therefore lowers the immunization rate of children as stated above, and thwarts the delivery of essential treatment, especially for the poor; and as well dampens the use of public health facilities (Dike, 2005). Certainly, the drugs used for treating some of the common diseases of the world, such as malaria, tuberculosis, and bacterial infections, are filled with counterfeit. This sometimes causes more problems to the health of individuals, groups, and the entire nation, and as well puts the integrity of the country into question. It is noteworthy that corruption has a great effect on the health status of the majority poor in Nigeria by denying them access to quality health services thereby endangering their health.

2.5 Whistleblowing

Whistle blowing usually refers to the process by which individuals raise concerns at work. It originates from when a pit whistle was blown at times of accident in a mine; or it is analogous with a referee 'blowing the whistle' because of a foul in a football match, or a policeman apprehending a criminal (Ozekhome, 2014).

Ozekhome (2014) further posited that the connotation of whistle blowing has come to mean taking concerns outside the organization, usually by informing the media about a dangerous or illegal activity that they are aware of through their work. In this respect, many often resort to making these illegal activities known through WikiLeaks, or through other social media, thus making it go viral. Blowing the whistle externally in this way is usually a last resort, occurring when concerns have not been listened to or acted upon internally. The terms 'whistleblowing' or 'speaking up' are often used interchangeably and can refer to the disclosure of a wide range of illegal or unethical conduct to the media or authorities about the happenings in a corporate or

government entity. Any breach of an organization's code of ethics can be a reason to blow the whistle (e.g. conflicts of interest, sexual harassment, unfair treatment of staff, corruption, discrimination, racial prejudice etc).

2.6 Who is a Whistleblower?

Obviously speaking, "Whistle-blower" comes from the common practice of law enforcement officers and referees blowing a whistle to indicate an illegal action. Today, a whistleblower is any individual who reports a corporate or government entity's illegal or unethical conduct to the media or authorities. In common parlance, someone is said to blow the whistle when they tell their employer, a regulator, customers, the police or the media about a dangerous, unwholesome, inimical or illegal activity or practices that they are aware of and going on in their workplace (Ozekhome, 2014).

A 'whistle-blower' on the other hand has been defined by the Oxford Advanced Dictionary (2005, online) as, "a person who informs people in authority or the public that the company they work for is doing (something) wrong or illegal."

Types of Whistleblowers

According to Ozekhome (2014), there are basically two types of whistleblowers that have been identified: The Internal whistleblowers - Report the misconduct or illegal behavior of a fellow employee or superior within a company. Most whistleblowers are internal. One of the most interesting questions with respect to internal whistleblowers is why and under what circumstances people will either act on the spot to stop illegal and otherwise unacceptable behavior, within an organization, if there are complaint system (also known as Internal Conflict Management System) that offer not just options dictated by the planning and control organization, but a choice of options for absolute confidentiality.

The External whistleblowers - Not directly involved in a company/organization but report their actions to entities such as the media, law enforcement, and watchdog agencies. Whichever group we tend to classify as a whistle blower, whether as internal or external, the underlining factor usually common to both is the need to preserve the 'public interest'.

Use of Whistle Blowing in fighting Corruption in the Health Sector

1. The notion that health is wealth serves as a precondition for both personal productivity and national development. For any country to keep its citizens healthy, it must invest heavily in the health sector and create opportunities for individual investment as well. Good investment in the health sector must portend good equipment, adequate staffing, easy access, and affordable medical services with a possible good insurance scheme in place. However, citizens will not have good health services where corruption prevails, and self-interest is the focus of political participation. Besides, where corruption prevails there is difficulty in the implementation of state policies on effective health care delivery. This is the situation Nigeria has found itself. Nigeria has been dominated with personal, ethnic, religion and regional interest which is greatly affecting the health sector in all ramifications (Akinnaso, 2014).
2. Corruption in the health sector could be dictated by scrutinizing the roles and relationships among all the actors to identify potential abuses that may occur in the course of service delivery. On this note, Vian (2008) is of the opinion that most often there is hardly any difference between bribe and gift, and other forms of reciprocity which are usually regarded as normal in some countries but may be considered illegal in other countries. For example, if informal payments or unofficial fees are paid to medical personnel for services that should have been free, this constitutes corruption.
3. Similarly, if a head of department decides to employ an unqualified relation or friend, or an agent procures a new, expensive drug above the required price or in quantities that is greatly above what is needed to benefit from the purchase, this amounts to corruption. However, it is noteworthy that what constitutes corruption in real sense is subjective and tied to prevalent norms in different societies. But we can on a general stance speculate that any abuse of power or privileges for personal gains while rendering medical services amount to corruption.
4. However, many more cases of wrongdoing could have been prevented if more people had come forward to expose problems to their organizations, the authorities, or the media. Unfortunately, reporting often comes at a high price: whistleblowers risk their career, their livelihood and sometimes their personal safety to expose wrongdoing that threatens the public interest. They may be fired, sued, blacklisted, arrested, threatened or, in extreme cases, assaulted or killed. And in some societies, whistleblowing carries connotations of betrayal rather than being seen as a benefit to the public.
5. It is noteworthy that the critical apparatuses of quality care in all healthcare systems all over the world comprises competent staff, well-constructed policies and procedures that guide practice, safe healthcare environments, interdisciplinary evidence-based disease management processes, however, when this

structured system does not achieve its aim, it means there is a leakage. Within this fold, corruption may be prevalent.

Ultimately, societies, institutions and citizens lose out when there is no one willing to cry foul in the face of corruption.

What needs to be done?

- The three main reasons people give for not reporting corruption are:
- Fear of the consequences (legal, financial, reputational)
- The belief that nothing will be done, that it will not make any difference.
- Uncertainty about how, where and to whom to report.

Protecting whistleblowers from unfair treatment, including retaliation, discrimination, or disadvantage, can embolden people to report wrongdoing and increase the likelihood that wrongdoing is uncovered and penalised. Companies, public bodies, and non-profit organisations should introduce mechanisms for internal reporting.

What we're doing about it?

Transparency International would like to see more people speaking up against corruption and other wrongdoings, ultimately reducing misconduct. A protective environment for whistleblowers is crucial to allow them to report instances of malpractice without having to face the dilemma of doing the right thing and risking one's career and livelihood or remaining silent, at the expense of the public good.

To make this happen, Transparency International is.

- Advocating for the adoption of robust and comprehensive whistleblower protection legislation
- Advocating for the effective enforcement of whistleblower protection legislation by the responsible authorities
- Working with public institutions and private companies so that whistleblower protection legislation is effectively implemented in the workplace.
- Supporting and advising individuals who are considering or have already blown the whistle, through our Advocacy and Legal Advice Centres

2.7 Authorization of Government Expenditure

Any government expenditure must be properly authorized and approved. The authority which confers power on the Officer controlling expenditure or a vote, to incur expenditure, is called "Warrants." All Warrants should

be issued and signed by the Minister of Finance. Warrants can be divided into two groups as follows: Recurrent Expenditure Warrants and Capital Expenditure Warrants.

3. Empirical Review

Research carried out by Otalor and Eiya (2015) on Combating Corruption in Nigeria: The Role of the Public Sector Auditor. Their work seeks to identify the role of the Auditor General who heads the Supreme Audit Institution in Nigeria and the public sector auditor in fighting corruption, and it concludes on the premise that effective corruption control requires the commitment and involvement of all citizens of the society. In addition, a study on Anatomy of Corruption in the Nigerian Public Sector: Theoretical Perspectives and Some Empirical Explanations by Ogbewer (2015) reviewed the concept of corruption in line with its forms and effects on the Nigerian State, as well as corruption in public service from Prime Minister Tafawa Balewa's era to President Goodluck Jonathan's administration. The article examines the idealistic, resource curse, two public, low risk-high benefit and anomie theories, and consequently adopts resource curse, low risk-high benefit theories to explain causes of corruption in Nigeria. Also, some personal observations and data from Transparency International are utilized to explain corrupt practices in Nigeria. The article concludes that there is corruption in the Nigerian Public Sector because of societal pressure, tribalism, nepotism, low risk-high benefits of involving in corruption among others.

A paper presented at the International Conference on Development of Social Enterprise and Social business for Eradication of Extreme Poverty and Street Begging, held at Chittagong, A research on Corruption in Nigeria: The Possible Way Out by Okolo and Akpokighe (2014), analyzed corruption in Africa using Nigeria as a case study. It states that corruption is alien to Africa and that a sizeable number of African pre-colonial nations were founded on strong ethical values ensuring social justice and compliance. The paper therefore argues that colonialism imported corruption to Africa and by extension to Nigeria. It explains corruption from different perspectives and concluded that corruption is innate and deep seated in Nigeria particularly in the Public Sector. The paper also identified non-conformity religious tenets, values, culture, ethnicity, favouritisms, nepotism and weak legal systems among others as the causes of corruption in Nigeria. Finally, four factors were identified as the cause of corruption in Nigeria - political, economic, social, and environmental. The paper also put forward some points as possible options and frame- work for curbing corruption in Nigeria.

Sheriff (2014) in his work *Corruption, Politics and Governance in Nigeria* examines the implication of corruption for governance in Nigeria since independence. It argues that corrupt and other related acts would inevitably thwart democratic governance, pollute the political space and create a spatial economy and lead to a “massification” of the poor. He centers its opinion on the fact that corruption throws spanners in the wheels of national development and hinges its argument on the fact that governance of Nigeria has suffered lack of accountability, transparency, and honesty for too long. He recommended that anti-corruption agencies should rather be controlled and answerable to the judiciary, be made up of persons with records of integrity, and be led by a judge with a track record of forthrightness and fearlessness.

4. Theoretical Underpinning

The work was guided by white collar theory which try to relate fraud to four other theories such as Fraud Triangle Theory, Fraud Diamond Theory, Police Theory, Fraud Pentagon Operant Theory but the underpinning theory which anchors this study is the white-collar theory.

4.1 White Collar Crime Theory

The study is anchored on White collar crime theory propounded by Sutherland in 1939. White-collar criminals are opportunists, who over time take advantage of their circumstances and position to accumulate financial gain. He was the first to coin the term and hypothesis “white-collar criminals” He defined his idea as “crime committed by a person respectability and high social status during his occupation (Sorunke, 2018). They are educated, intelligent, affluent, individuals who are qualified enough to get a job which allows them unmonitored access to often large sum of money. Fredrichs (2007) stated that the only way one crime differs from another is in the backgrounds and characteristics of its perpetrators. Most, if not all white-collar offenders are distinguished by lives of privilege, much of it with origins in class inequality. It is estimated that a great deal of white-collar crimes is undetected or if detected, it is not reported. Because of the high status of the perpetrators of these crimes, a highly trained and experienced examiner or investigator like the Professional Forensic is needed to forestall the occurrence of such high-profile fraud.

5. Research Method

The study is an ex-post facto and field of survey type of research. The researcher made use of descriptive/survey design.

The target population would be staff of the finance and accounts department, Audit Department, Medical Record Department, Human Resources and Procurement Department of UBTH. The population size considered for this study is 500 respondents drawn from the staff of UBTH. The population is focused on the staff that have knowledge of corruption and whistleblowing. To gain the advantage of an in-depth study and effective coverage, samples are drawn using random using Taro Yamane's formula,

Where n = sample size; N = population; e = margin of error (0.05 based on 95% confidence level);

Therefore, $n = 500/1 + 500(0.05)^2$

$n = 500/2.25$ $n = 232$

Using a population of approximately 500 Nigerians with an error of 5%, a sample size of 232 considered adequate as computed above.

Two hundred and thirty-two questionnaires were distributed equally among the staff of five selected department chosen as detailed in the table below. All the 232-questionnaire representing 100% of the total sample were returned as shown in the table below. Five-point likert scale was adopted in structuring the question from strongly agree to strongly disagree.

6. Data Analysis

The findings present the analysis of data based on the research objectives presented in previous sections. Specifically, this chapter presents data and results of descriptive statistics, chi-square, and finally discussion and interpretation of findings. Data analysis herein was done with the aid of the Statistical Package for Social Sciences (SPSS) version 23.

The table below summarizes the percentage of respondent to the opinions available for the questions under these categories.

Table 1

S/N	Section A: Specific Roles of Accountants	SA	A	U	D	SD
1	Public Sector Accountants should play specific roles in curbing/reducing financial corruption in Nigerian Public Sector through whistleblowing	41 18%	149 64%	12 5%	30 13%	0
2	Providing dedicated online real-time portal, phone numbers and social media handles will facilitate s role in blowing the whistle against financial corruption in Government	63 27%	120 52%	16 7%	14 6%	19 19%
3	Blowing the whistle against financial corruption in Government can be a source of threat/hazard to s in the Public Sector	49 21%	139 60%	33 14%	11 5%	0
4	Blowing the whistle against financial corruption in Government can threaten the job of s in the Public Sector	39 17%	121 52%	18 8%	24 10%	30 13%

Source: Fieldwork 2022

As shown in table 1 above, 18% and 64% of the respondents strongly agreed and agreed that Public Sector s should play specific roles in curbing/reducing financial corruption in Nigerian Public Sector through whistleblowing respectively. However, 5% and 13% were undecided and disagreed respectively. In the same vein, 27% and 52%% of the respondents strongly agreed and agreed that providing dedicated online real-time portal, phone numbers and social media handles will facilitate s role in blowing the whistle against financial corruption in Government respectively. However, 7%, 6% and 8% were undecided, disagreed and strongly disagreed respectively.

On the other hand, 21% and 60% of the respondents strongly agreed and agreed that blowing the whistle against financial corruption in Government can be a source of threat/hazard to s and Civil Servant in the Public Sector. However, 14% and 5% were undecided and disagreed respectively.

In the same table, 17% and 52% of the respondents strongly agreed and agreed that blowing the whistle against financial corruption in Government can threaten the job of s Civil Servant in the Public Sector respectively. However, 8%, 10% and 13% were undecided, disagreed and strongly disagreed respectively.

Testing Hypothesis

H0: Accountants and Civil Servant have no statistically significant role to play in curbing financial corruption in Nigeria Public Sector

H1: Accountants and Civil Servant have statistically significant role to play in curbing financial corruption in Nigeria Public Sector

Table 2

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	106.389 ^a	16	.471
Likelihood Ratio	95.328	16	.319
Linear-by-Linear Association	.018	1	.893
N of Valid Cases	232		

Source: SPSS Computation result 2022

Decision: Since the calculated chi-square value 106.389 is obtained in the study at probability level of 0.05 significant level is greater than the computed value of .471 observed. Hence, reject the null hypothesis and accept the alternative hypothesis which states that Accountants and Civil Servant have statistically significant role to play in curbing financial corruption in Nigeria Public Sector.

7. Summary of Findings

The following findings were made at the end of the study:

1. The result of the test showed that accountants and Civil Servant have roles to play in curbing financial corruption through whistleblowing in Nigeria public sector.
2. Majority agreed that government can introduce safeguards that will help mitigate hazards inherent in whistleblowing by Accountants and Civil Servant in curbing financial corruption in Nigeria Public Sectors.
3. Response from the respondents showed that accountants' and Civil Servant commitment to whistleblowing as regards curbing financial corruption in Nigeria Public Sector will be enhanced if government approves and implement peculiar conditions for them.

8. Conclusion

The negative effects of financial corruption in Nigeria cannot be overemphasized; it has eaten deep into the fabrics of our national life. It has to a great extent slowed down economic development and rewarded incompetence. Several important findings came to light:

- (i) corruption increases the volume of public investments (at the expense of private investments), as there

are many options that allow for public expenditure manipulation and are carried out by high-level officials to get gratification (which means that more general government expenditures or a large budget offer more opportunities for corruption).

(ii) Corruption redirects the composition of public expenditure from the expenditure necessary for basic functioning and maintenance to expenditure on new equipment.

(iii) Corruption tends to pull away the composition of public expenditure from the necessary fixed assets for health and education, as there is less chance of getting commissions than from other, perhaps unnecessary projects.

(iv). Corruption reduces the effectiveness of public investments and the infrastructure of a country.

9. Recommendations

1. Accountants and Civil Servant should be motivated to play specific roles in curbing financial corruption through whistleblowing in Nigeria Public Sector. There is need for government to provide quick response facilities to encourage timely reporting of financial corruption.
2. Government to identify hazards inherent in whistleblowing because of Public Sector accountants' and Civil Servant efforts to curb financial corruption and devise means of dealing with them. These hazards include threats to the job of accountants and Civil Servant, threat to their lives and that of their family members, exclusion from incentives and other motivational privileges, victimization which can lead to trauma, emotional stress, possible suicide, discrimination, blackmail, intimidation and malicious postings of accountant and Civil Servant whistleblowers.
3. Government should institute a reward system that includes financial and non-financial that can encourage Accountants and civil servants to whistle bow corrupt cases as they arise.

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ECONOMIC VALUE ADDED AND FIRM VALUATION IN NIGERIA

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Abstract

This study examined the impact of economic value added on firm valuation in Nigeria. The study used three proxies to capture firm valuation. The variables are income base of firm valuation that is measured as discounted cash flow (DCF), asset based of firm valuation using net book value (NBV) and market based approach of firm valuation using publicly traded prices in the stock exchange (SP), while the explanatory variables (EVA) was measured as the company's profit after full cost of capital, while Firm size (FZE) and Leverage (LVG) are use as control variable. The panel data set were analyzed using pooled, fixed, and random effect estimator while Hausman test was used to select the best estimates. In the sample of selected non-financial firms, from 2012 to 2020, the study shows that EVA has a significant effect on firm valuation. Specifically, the result revealed that EVA has a significant effect on discounted cash flow, which measured income-based approach of firm valuation. EVA depicted a significant effect on book value approach to firm valuation, which is measured using net book value of asset. Similarly, a significant relationship exists between EVA and market-based approach of firm valuation, measured using share prices. Based on the findings of this study, the study recommended that successful value-based management firms should maintain that the technical accounting requirement of EVA is straightforward and makes only minimal adjustments to their accounting procedures. To give investors a normal return on their investment in the company's shares, managers should work to boost future EVA. This is crucial for establishing success standards for management incentive compensation schemes by corporate compensation committees as well as securities analysts evaluating stocks.

Keyword: discounted cash flow, economic value added, firm valuation, ordinary least square, share price

JEL Classification: C23, G32 G34

1. Introduction

For corporations and firms, market valuation and shareholder value generation, as opposed to profit maximization and wealth maximization, has become an increasingly essential problem. Most organizations' financial statements reporting book values do not reflect their underlying financial status, hence value estimation is essential in the business world. Any financial endeavor, such as soliciting new investors or making investment decisions, requires that the equity value created by the endeavor be considered. This is especially true for many entrepreneurial and small businesses, which frequently require funds from outside investors to support rapid expansion. The primary goal of financial statements, according to the International Accounting Standards Board (1989), is to offer information about an enterprise's financial situation and

performance that is relevant to diverse investors in making investment decisions. For well-functioning capital markets and the economy, high-quality accounting data is essential. As a result, investors should place a high value on it. The value relevance of accounting information for equity valuation is a fundamental aspect of accounting quality. Value relevance appears to be more essential to investors than any other aspect, according to Francis and Chipper (1999). Four ways to studying the value relevance of accounting information are identified by Francis et al., (1999). The fundamental analytical view, prediction view, information view, and measurement view of value relevance are the four views. The measuring view of value relevance is used for the purposes of this article. Accounting figures are value relevant if they capture or summarize information that affects stock prices, according to the measurement approach of value relevance (Francis & Schipper, 1999). Traditional financial performance indicators are frequently criticised for ignoring a firm's cost of capital and are thus seen unsuitable for assessing value creation (Bognárová, 2017). Furthermore, because these indicators are almost entirely reliant on data from financial statements, they are susceptible to accounting distortions. It's worthless, and it's been suggested that conventional performance indicators do not often capture the actual surplus (Bantwa & Bhuva, 2020). Despite these limitations, traditional measurements are nevertheless commonly used by analysts and investors. Value-based financial performance metrics, on the other hand, were developed in response to the perceived inadequacies of traditional measures. The main distinction between traditional and value-based metrics is that value-based measures consider a company's cost of capital. They also seek to correct some accounting inconsistencies (Bognárová, 2017).

Stern Stewart & Company proposed the Economic Value Added (EVA) as a management technique (Stern, 1985; Stewart, 1991; Stern, Stewart & Chew, 1995). It provides a method for calculating the economic value a company has achieved or created over a given period. Economic Value Added (EVA) of an enterprise is the best indicator of financial performance for capturing the underlying economic profit (Awan, Siddique & Sarwar, 2014). EVA fills a critical role in today's financial and economic landscape that has received little attention from academics and practitioners. Because EVA is a performance metric, it is linked to shareholder wealth over time. Shareholders scrutinize the company for their specific interests and want management to operate in their best interests. Thus, EVA is significant in terms of determining how much economic value is added by management to shareholders' wealth, whereas other traditional techniques relied on accounted-for information. However, accounting only provides historical or distorted data that has no bearing on a company's actual performance, whereas EVA provides a viable performance measure for businesses (Shil, 2009). In recent years, the measurement of market value addition (MVA) has gotten a lot of attention (Athanasakos, 2007). Furthermore, previous research has concentrated on determining which metric best

measures value creation. Traditional measures such as operating income (OI), profit after tax (PAT), return on investment (ROI), return on asset (ROA), and others have been argued to be misleading, inept, and often result in creative earnings over time (Kaur & Naratng, 2009).

Since one view might not be adequate to provide a solution to the study, this study added to the body of existing knowledge by employing three proxies to capture firm valuation. The variables are the income-based approach of firm valuation, which is measured as discounted cash flow (DCF), the asset-based approach of firm valuation, which is measured as net book value (NBV), and the market-based approach of firm valuation, which is measured as publicly traded prices on the stock exchange (SP). The rationale for all of this is that the aim of investment is to earn future income (cash), which is calculated using predicted future income, which allows for a more accurate comparison with the substitution principle. Similarly, most Nigerian studies have not investigated whether EVA affects firm valuation using MVA; nevertheless, earlier studies have looked at the relationship between EVA and stock returns and ROA. As a result, the goal of this research is to assess the impact of EVA on business valuation in Nigeria, as well as to see if there is a significant difference between EVA and traditional performance measures. The rest of this work is arranged in the following ways. The literature review is discussed in the second section, and the data and empirical methodological issues are presented in the third section. The empirical results are presented in part four, and the final section concludes.

2. Literature Review

2.1 Conceptual Review

Economic value added (EVA) has gotten a lot of credence as a new way to measure performance for some period now. Traditionally, EVA as theory as posit that businesses should endeavour to generate shareholder wealth. Traditional indicators in use overtime namely: return on investment (ROI), return on assets (ROA) and earning before tax (EBT) were employed by the corporations to match managerial interests with shareholder interests (Siniak & Lozanoska 2019). Economic value added (EVA) being a value-based measurement of financial performance, a decision tool for investment purpose that reflects the total amount of value created to shareholders (Geysler & Liebenberg, 2003). Calculated by multiplying the excess return from an investment by the total amount (capital) put into the investment. Economic value added (EVA) is the subtraction of charge for the opportunity cost of all capital spent in a company or on a project from the net operating profit. It's a calculation of true economic profit, or the amount by which earnings exceed or fall short of the needed minimum rate of return that investors may get by investing in similar risky securities (Stewart, 1990). EVA is not new generated residual income, being an accounting performance measurement; it is subtracting capital charge from operating profit. As a result, EVA is a variation of residual income, with

changes to the way income and capital are calculated. EVA is generally seen as a single, straightforward metric that accurately depicts shareholder wealth creation. Value-based measurement systems can provide other practical benefits and also encourage managers to create value and serve as a basis for calculating management benefits (compensation). EVA system in an organisation assists managers in making informed and important decisions, which result in better investment, identifying opportunities that bring about overall improvement, weighing both long- and short-term firm benefits (Roztocni & Needy, 1998). EVA is a dependable indicator of a company's future growth in value and an effective gauge of the prowess of managerial overall decisions. Positive EVA numbers that are constant over time will raise company values, whilst negative EVA values may lower company values.

Some other forward-looking indicators, typically those that are non-financial in nature, should be regularly seen in the time-to-time performance report generated by managers, providing timely warning indicator of potential problem (Wood, 2000). In some industrial sector, EVA only is an inadequate indicator of financial performance. Yearly fluctuations in EVA, negative sometimes are not capable of explaining variations in the value of the firm for new firm with high growth, which include firms in industries that are technologically inclined because the value of the firm is mostly based on the Cashflow expected in the long run (Wood, 2000). Distortion by inflation is another major issue with EVA, this result in difficulty in using it to estimate actual profitability during inflationary periods. The adjusted EVA, a better measure, corrects for inflationary distortions. One of EVA's key flaws is that it is overly reliant on financial measures like capital invested, profit margins, and cost of capital, among others. According to empirical investigations, these measurements are frequently ineffective of predicting future performance (Fletcher & Smith, 2004). EVA is also thought to have a strong financial drive. Revenue realization and expense recognition play a big role in calculating EVA. Managers of firms can alter financial figures to get better financial performance (Horngrén, Foster & Datar, 1997). Another important issue with EVA is that, to increase EVA, managers often use already depreciated assets; this practice lowers the asset base in the books of accounts while also ensuring that no depreciation is charged or recognized, resulting in higher EVA. Managers, on the other hand, see a significant reliance on EVA to gauge their performance as dysfunctional since it fails to reflect the actual level of performance at a given point in time. Thus, accounting number manipulation would be legitimate if management are aware that they have significantly improved performance, but this is not instantly apparent in the accounting records (Brewer et al., 1999; Pustynick, 2011).

EVA, like other performance measures, tries to resolve the fundamental tension between the need to create a performance measure that is substantially associated with shareholder wealth while also being less

susceptible to random swings in stock prices. This is a challenging contradiction to reconcile, and it explains why all accounting-based performance indicators have a low year-to-year correlation with stock returns (Bognárová, 2017). Furthermore, successful value-based management firms are said to keep the technical accounting parts of EVA simple, making minimum changes to their accounting methods. They spend time and effort finding and evaluating the operational elements, or value drivers, that have the most impact on the development of economic profits (Fletcher & Smith, 2004). The valuation of a company is necessary for calculating stock prices, which is an important factor in many models (keys and Briggs, 1990). One of the most important companies aims is to maximize shareholder value. The market value of a company is a key measure of its shareholders' wealth. According to Biggs (1978), stock price occasionally, is the exclusive measure of performance in the model. It's more typically used as part of a weighted average that incorporates other measures. A firm's value can be determined using a variety of measures, each of which is likely to yield a value that differs from the others. The accounting net worth or book value of a company is the first and most accessible measure of its worth. However, because the accounting rule in a model may be at variance (in divergence) with generally accepted financial accounting principles, this measure might be problematic. This is because adhering to certain generally held principles, such as historical cost and conservatism, can result in values that are far from acceptable. The market value of all outstanding shares is the second metric. This is a widely used approach of valuing public firms in the real world. Its use, however, necessitates the existence of a functioning real-time stock market. This requirement is not met in models that do not allow participants to trade shares, and even when such trading is permitted, the trades are typically too few and infrequent to allow for reliable valuation. The capitalized value of its expected future performance is the third metric. Modigliani and Miller (1961) pointed out that, while four different methods of capitalization can be used for this goal, when the markets are ideal, they all result in the same valuation. People are perfectly rational, and the future is totally predictable.

However, if the Goosen's technique is used, the capitalized valued measure has a flaw because it requires at least one arbitrary parameter (m). The deductive application of human judgment is the fourth measure. Firms are graded on a psychometric scale using this procedure. The results are then translated to monetary values using a formula. The issue with this metric is that it necessitates subjective evaluation. The accounting net value of a firm, adjusted for intangibles and the idiosyncrasies of accounting rules employed in the simulation, is the sixth metric. Although a general principle for adjustment could be established, the precise principle must be determined by the model's specifics. The adjusted net worth metric, on the other hand, eliminates both issues because it does not require an arbitrary parameter and can be totally objective. The

challenge is that it necessitates a thorough understanding of the imitation techniques utilized in each model. The market value measure of establishing a firm's value, also known as market capitalization, is the most dependable and straightforward technique of determining a firm's value. It is also known as total value of all outstanding shares. It's worth noting that this strategy only works for publicly traded corporations with easily known share values. The number of outstanding shares multiplied by the current stock price yields a company's market capitalization (market value).

2.2 Empirical Review

Altaf (2016) investigated Stern Stewart & Company's argument that economic value added is a better measure for explaining market value in India than traditional earnings-based measurements. To achieve the study's objective, they used multivariate regression analysis. The study's findings show that operating income has a strong relationship with market value added in both the manufacturing and service industries. Ifeanyi and Chukwuma (2016) used publicly traded firms to investigate the impact of board size on financial performance (as measured by both economic values added (EVA) and return on assets (ROA)) in Nigeria's manufacturing sector. The study uses a quantitative panel approach to analyze secondary (panel) data from the audited financial statements of 46 listed manufacturing firms taken from 95 NSE subsectors over a twelve-year period (2003-2014). Manufacturing companies with smaller boards are more viable than those with larger boards, according to the study. Firms in the sector with larger board size, on the other hand, reported lower profitability. Bognárová (2017) uses regression models to investigate the incremental information of a series of performance measures from 2010 to 2015, analyzing MVA performance and the link between EVA and MVA. According to the results of the models, the dominance of a modern performance measure EVA over two other traditional performance measures in explaining changes in MVA in the case of selected companies over the studied period was affirmed. As well, Ceryova et al. (2018) used economic value added, economic value-added momentum, and economic value-added margin to evaluate the business performance of Microsoft Corporation, an American multinational technology corporation, from 2010 to 2015. They discovered that between 2010 and 2015, the value of economic value added increased significantly. As a result, Microsoft Corporation's executives have amassed a substantial amount of wealth. Thus, the company's excellent performance is highlighted by the economic value-added momentum, and the company's remarkable productivity performance is highlighted by the economic value-added margin. Pasha and Ramzan (2019) looked at the asymmetric impact of economic value-added dynamics on stock market value in Pakistan, using panel cointegration, FMOLS, and DOLS as new evidence. For the study period of 2006–2015, the study sample consisted of 70 non-financial Pakistan Stock Exchange listed firms from 13

industries. Panel cointegration, panel FMOLS, and panel DOLS are used in the study. In the long run, it was discovered that EVA has a negative weak but significant relationship with stock return.

In terms of working capital management, Maeenuddina et al. (2020) in their study evaluated and provided empirical fact about the economic value-added momentum in comparison to some conventional financial measurements. For a period of 11 years (2007-2017), the sample of the study was sixty-nine (69) quoted non-financial firms on the Pakistan Stock Exchange. The results showed positive significant relationship between working capital management and EVA momentum, demonstrating the addition of value by reduction in the company's cash conversion cycle. Shishany et al. (2020) in their study the impact of economic value added (EVA) adoption on stock performance; investigate whether adopting the EVA framework improves the firm's performance as well as the long-term impacts on the firm's value. It also evaluates how the market responds to the news that EVA will be used as a compensation mechanism. The paper also addresses this gap in the literature by demonstrating whether the adoption of EVA increases company value as measured by market prices over time. 89 US companies that have adopted EVA as a compensation method make up the study sample. The performance of adopting companies is compared to that of a few chosen matching companies as well as to market indices, especially the S&P500 portfolio. The CAR and BHAR aggregation methods are then used to evaluate the possibility of EVA adoption by various US firms. The findings, however, indicated a modest improvement in the performance of organisation that adopted EVA within five years of the adoption date. Does the EVA valuation model explain the market value of equity better under changing required return than constant required return? is a study by Behera S. (2020). Examined if the EVA valuation model could be carried out under changing required return by effecting changes to the model, as well as whether the valuation model under the assumption of constant required return had a better explanatory capacity than the model under the assumption of changing required return. The intrinsic worth of stocks as determined by valuation models and the market value of stocks of 69 large-cap, 88 mid-cap, and 79 small-cap companies were sampled using the relative information content analyses. The outcomes demonstrated that the EVA-based valuation model with varying normal market return did better than the EVA-based valuation model with fixed required return.

The question of whether economic value added (EVA) as a performance assessment metric encourages public administrators to improve the performance of public organizations is investigated by Subedi and Farazmand (2020). Using 2274 firm-year observations for the years 2009 to 2010 in China, the research uses data from the Wind Info Database (WIND). It employs first-difference change analysis methodology to handle firm-level unobservable heterogeneities and address endogeneity issues. It has been discovered that

using EVA as a performance evaluation metric encourages public officials to boost the total effectiveness of the public organizations under investigation. According to the research, after adopting EVA as their performance evaluation metric, public administrators make wise investment and operational decisions that improve the overall organizational performance. Omneya et al (2021) looked at Is EVA Momentum (Economic Value-Added Momentum) a Better Performance Measurement Tool? evidence from listed Egyptian firms. Return on assets (ROA) and return on equity (ROE), two financial performance indicators for businesses, were examined in the research. The financial industry was excluded from the data collection for companies listed on the Egyptian Stock Exchange between 2010 and 2019. By using relative information content analysis and stepwise regression, the study also aims to contribute to the announcement of the economic value-added measure with the greatest explanatory power pertinent to firm financial performance. Except for EVA with ROE, the results indicated a significant effect for both economic values added on the financial performance of the firm. Additionally, it was discovered that EVA Momentum was the best economic indicator for enhancing and explaining financial performance.

3. Methodology

The sample for this study was made up of thirty (30) non-financial firms quoted on the Nigeria Stock Exchange (NSE) covering the period of 2012-2020. The study employed the panel regression analysis.

Dependent Variable: Firm Valuation

We use three proxies to capture firm valuation as one view might not be enough to provide solution to the study. The variables are income base of firm valuation that is measured as discounted cash flow (DCF), asset based of firm valuation using net book value (NBV) and market-based approach of firm valuation using publicly traded prices in the stock exchange (SP). The reason behind all these is purpose of investment is to earn future income (cash) which is considering expected future income which is better to make reasonably comparison with principle of substitution.

Independent Variables

There are two categories of independent variables in this research. First, economic value added, the main independent variable, would be measured using the most popular proxies. (Biddle et al., 2009; Chen et al., 2011; Du et al. 2018). Second, firm size (FZE) and leverage (LVG), which are the control variable discussed based on prior research. We need accounting data from the financial statement to compute EVA. There must

be a few adjustments made. The following formula is used to compute the EVA, which represents the company's profit after total cost of capital:

$$EVA = \text{Net Sales} - \text{Operating Expenses} - \text{taxes} - \text{Capital Charges}$$

Net Sales – Operating expenses = Operating profit (EBIT, Earnings before Interest and Tax) - Taxes = Net operating profit after tax (NOPAT) - Capital charges (Invested capital cost of capital) = Economic Value Added (EVA)
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profit after tax, or NOPAT. It gauges profits from ongoing business operations. It is comparable to EBIT (Earnings before interest and tax) less taxes, which is a common beginning point in analysts' valuation models. EVA can be thought of as NOPAT fewer capital charges for a business. Capital charges are calculated by multiplying the amount of capital invested by the company by the weighted average cost of capital (WACC). WACC is the additions of each component of capital minus short-term debt, long-term debt, and shareholders' equity minus weighted for its relative proportion, at market value, in the company's capital structure:

$$WACC = \frac{D}{D + E} .i.(1 - t) + \frac{E}{D + E} .r.....(3.1)$$

Where.

i = the average interest rate,

r = the required return on equity,

t = the tax rate,

D = the amount of debt capital, and

E = the amount of equity capital.

Based on the general form of panel data regression model, the econometric models of Moghaddam and Shoghi (2012); Onger (2014); Atlaf (2016) and Omneya et al (2021) are adapted in this study.

$$FV_{it} = f(EVA_{it}) \tag{3.2}$$

Where the above equation of (3.1) is decomposed into three econometric equations to meet up specific objectives of this study with control variables added.

Objective One:

$$DCF_{it} = \beta_1 + \beta_2 EVA_{it} + \beta_3 FZE_{it} + \beta_4 LVG_{it} + \epsilon_{it} \tag{3.3}$$

Objective Two:



$$NBV_{it} = \beta_1 + \beta_2 EVA_{it} + \beta_3 FZE_{it} + \beta_4 LVG_{it} + \varepsilon_{it} \quad (3.4)$$

Objective Three:

$$SP_{it} = \beta_1 + \beta_2 EVA_{it} + \beta_3 FZE_{it} + \beta_4 LVG_{it} + ROA + \varepsilon_{it} \quad (3.5)$$

Where:

DCF_{it} = Discounted Cash Flow (Dependent Variable)

NBV_{it} = Net Book Value (Dependent Variable)

SP_{it} = Company Stock Prices (Dependent Variable)

ROA_{it} = Return on Asset

EVA_{it} = Economic Value Added (Independent Variable)

FZE_{it} = Firm Size (Control Variable)

LVG_{it} = Leverage (Control Variable)

4. Analysis results and Discussion

This section deals with the analysis and discussion of empirical findings. This covers the descriptive statistics, correlation matrix, Hausman Test and fixed & Random Effect Model.

Table 1: Descriptive Statistics

	SP	DCF	NBV	EVA	FSIZE	LEV	ROA
Mean	61.09689	15.92478	15.39237	20.63065	18.07881	17.17127	17.86283
Median	12.36092	16.01745	15.29082	20.56441	17.88088	17.25798	13.18641
Max	1046.322	17.23761	18.26163	25.00800	20.64449	18.30771	81.37550
Min	0.044437	9.040944	11.96270	14.57101	16.85637	15.54876	0.017132
Std. Dev.	168.2845	0.975599	0.867621	1.831811	0.755281	0.528534	15.08813
Skew.	4.721448	-2.912093	0.129761	-0.332930	1.992108	-0.702383	1.342773
Kurt.	25.16596	19.95077	5.552430	3.515814	6.313762	3.496257	4.744783
Jarque-Bera	3628.113	2007.811	41.13906	4.345285	167.8437	13.87273	64.10269
Prob.	0.000000	0.000000	0.000000	0.113876	0.000000	0.000972	0.000000
Obs.	270	270	270	270	270	270	270

Authors' Compilation, (2022).

From the above table, it is observed that the mean value of all the variables are positive suggesting that the variables on the average increased over the period studied. Share price (SP) has the highest mean value (#61.09), suggesting that for the firms sampled, the average share price is #61.09k. Similarly, the mean of EVA is 20.63 while firm size (FSIZE) has a mean value of 18.07 while return on asset (ROA) as a measure of financial performance recorded (17.86) mean value. Conversely, the mean values of all the variables are closer to the median, suggesting that the variables are symmetrical and normally distributed.

On the other hand, it was observed that all the variables range from positive-to-positive value as depicted by the result of the minimum and maximum. Also, among the variables studied, share price has the highest value for standard deviation while others were relatively low. Thus, implying that the share price of the firms sampled is unstable and unpredictable. Furthermore, it was discovered that all the variables are positive skewed except for DCF, EVA and LEV. Also, all the variables are leptokurtic since their value is greater than three (3) which implies that the variables produce higher extreme outliers than those of the normal distribution.

Regression Analysis

Table 2: EVA and Income Based Firm Valuation

Dependent Variable: DCF			
Variable	Pooled	Fixed	Random
C	13.50044 (3.5360) 3.8179*	22.48881 (6.0005) 3.7478*	16.00504 (4.2736) 3.7450
EVA	0.008870 (0.0477) 0.1858	-0.079522 (0.0558) -1.4234	-0.034610 (0.0486) -0.7170
FZI	0.177556 (0.1157) 1.5344	-0.304945 (0.2529) -1.2057	0.087962 (0.1501) 0.5858
LEV	-0.056549 (0.1560) -0.3622	0.034475 (0.2460) 0.1401	-0.055839 (0.1845) -0.3024
R-squared	0.023190	0.492137	0.005496
Adjusted R-squared	0.002698	0.349579	-0.015368
F-statistic	1.131642	3.452188	0.263429
Prob(F-statistic)	0.338435	0.000001	0.851652
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.5225	3	0.0000

Authors' Computation (2022)

The result for the pooled effect, fixed effect and random effect is reported in Table 2 above. As for the results obtained from the pooled regression models, the coefficient of EVA and FSIZE all shows a positive relationship with discounted cash flow (DCF) which measures the Income Based Firm Evaluation (DCF). This implies that Economic Value Added is poised to improve Income Based Firm Evaluation of the firms sampled. Similarly, the firm size (FSIZE) also improves Income Based Firm Evaluation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will improve positively. However, leverage (LEV) depicted a negative relationship. Furthermore, given the value of the r-squared from the

pooled regression analysis, only about 2.3% of changes in the explanatory variable are influenced by the variables considered in this study. The F-statistics on the other hand shows that the variables considered have insignificant impact on Income Based Firm Evaluation of the firm sampled.

On the other hand, the result of the fixed effect model shows the coefficient of EVA and FSIZE all shows a negative relationship with Income Based Firm Evaluation (DCF). This implies that Economic Value Added has the potential to negatively influence the income Based approach to Firm Evaluation of the firms sampled. Similarly, the firm size (FSIZE) also depicted a negative coefficient Income Based Firm Evaluation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will be affected negatively. However, leverage (LEV) depicted a positive relationship, suggesting that an increase in leverage is expected to improved income-based approach to firm valuation The r-squared from the fixed effect model shows that 49% of changes in the explanatory variable is influenced by the variables considered in this study, suggesting that the model is fit and can be used for decision making. The F-statistics on the other hand shows that the variables considered have significant impact on income-based approach to firm valuation of the firm sampled.

While the result of the random effect model reveals that, EVA and LEV depicted a negative coefficient, suggesting that they both have a negative effect of income-based approach to firm valuation, while FSIZE depicted a positive relationship with income-based approach to firm valuation. The r-squared and F-statistics from the random effect model reveals that EVA has no significant relationship with income-based approach to firm valuation.

Furthermore, the above table also revealed that the constant of each of the model is positive and significance. It can also be seen from the result obtained above that the r-square for each of the models is relatively low, with only fixed effect model having value greater than 45%. It is also noteworthy to also mention that the F-statistics for the entire models were insignificant except for fixed effect model. The result of the Hausman Test favours the use of fixed effect which gave an appropriate result for the analysis. Thus, the conclusion of this hypothesis is based on the fixed effect model and the result obtained revealed that the EVA has a significant effect on income-based approach to firm valuation. This is consistent with the work of Geysers & Liebenberg (2003).

Table 3: EVA on Book Value Based Approach of Firm Valuation

Dependent Variable: NBV			
Variable	Pooled	Fixed	Random
C	15.92893 (3.1193)	22.42699 (4.8180)	19.16370 (3.7495)

	5.1065*	4.6547*	5.1109*
EVA	0.012599 (0.0420) 0.2993	-0.007477 (0.0448) -0.1666	3.5005 (0.0407) 0.0008
FZI	0.018288 (0.1020) 0.1791	-0.145150 (0.2030) -0.7147	-0.045254 (0.1360) -0.3326
LEV	-0.066717 (0.1376) -0.4845	-0.249024 (0.1975) -1.2604	-0.172776 (0.1605) -1.0761
R-squared	0.003336	0.570698	0.008719
Adjusted R-squared	-0.017573	0.450192	-0.012077
F-statistic	0.159559	4.735857	0.419243
Prob(F-statistic)	0.923362	0.000000	0.739465
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.053142	3	0.0702

Authors' Computation (2022)

The result of the effect of EVA on Book Value Based Approach of Firm Valuation for the pooled effect, fixed effect and random effect is reported in Table 4.3 above. As for the results obtained from the pooled regression models, the coefficient of EVA and FSIZE all shows a positive relationship with book value-based approach of firm valuation (NBV). This implies that Economic Value Added is poised to improve book value-based approach of firm valuation of the firms sampled. Similarly, the firm size (FSIZE) also improves book value-based approach of firm valuation suggesting that as firms acquire more assets which is a measure of firm size, book value-based approach of firm valuation will improve positively. However, leverage (LEV) depicted a negative relationship.

On the other hand, the result of the fixed effect model shows the coefficient of EVA and FSIZE and LEV all shows a negative relationship with book value-based approach of firm valuation (NBV). This implies that economic value added has the potential to negatively influence the book value-based approach of firm valuation of the firms sampled. Similarly, the firm size (FSIZE) also depicted a negative coefficient book value-based approach of firm valuation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will be affected negatively. While, leverage (LEV) also depicted a negative relationship, suggesting that an increase in leverage is expected to negatively influence book value-based approach of firm valuation. The r-squared from the fixed effect model shows that 57% of changes in the explanatory variable is influenced by the variables considered in this study, suggesting that the model is fit and can be used for decision making. The F-statistics on the other hand shows that the variables considered have significant impact on book value-based approach of firm valuation of the firm sampled. While

the result of the random effect model reveals that FSIZE and LEV depicted a negative coefficient, suggesting that they both have a negative effect of book value-based approach of firm valuation, while EVA depicted a positive relationship with book value-based approach of firm valuation. The r-squared and F-statistics from the random effect model reveals that EVA has no significant relationship with book value-based approach of firm valuation.

Furthermore, the above table also revealed that the constant of each of the model is positive and significance. It can also be seen from the result obtained above that the r-square for each of the models is relatively low, with only fixed effect model having value greater than 55%. It is also noteworthy to also mention that the F-statistics for the entire models were insignificant except for fixed effect model. However, the result of the Hausman Test favours the use of fixed effect which gave an appropriate result for the analysis. Thus, the conclusion of this hypothesis is based on the fixed effect model and the result obtained revealed that the EVA has a significant effect on book value-based approach of firm valuation.

Table 4: Effect of EVA on Market Based Approach of Firm Valuation

Dependent Variable: SP			
Variable	Pooled	Fixed	Random
C	777.8356 (633.0416) 1.2306	227.5472 (237.6987) 0.9572	239.4257 (236.4861) 1.0124
EVA	3.970362 (8.2768) 0.4796	0.477283 (10.7686) 0.2341	0.489712 (2.0301) 0.2412
FZI	-26.78404 (22.2662) -1.2028	-2.327695 (10.7686) -0.2161	-2.843115 (10.5154) -0.2703
LEV	-15.99879 (27.0501) -0.5914	-7.879716 (8.9698) -0.8764	-8.043196 (8.8914) -0.9046
ROA	-2.210301 (1.0509) -2.1031	0.082433 (0.2670) 0.3086	0.056652 (0.2652) 0.2136
R-squared	0.034355	0.977993	0.007810
Adjusted R-squared	0.007154	0.971567	-0.020139
F-statistic	1.262994	152.1758	0.279448
Prob(F-statistic)	0.287408	0.000000	0.890890
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.164818	3	0.0427

Authors' Computation (2022)

The result of the effect of EVA on Market Based Approach of Firm Valuation for the pooled effect, fixed effect and random effect is reported in Table 4.3 above. As for the results obtained from the pooled regression models, the coefficient of EVA shows a positive relationship with share price which is a measure for Market Based Approach of Firm Valuation (SP). This implies that Economic Value Added is poised to improve share prices as a measure of market-based approach of firm valuation of the firms sampled. While FSIZE, LEV and ROA all revealed a negative coefficient, suggesting that when share prices is used in measuring the Market Based Approach of Firm Valuation, it will result in a reduction in share price as it presently has a negative influence on market-based approach of firm valuation.

On the other hand, the result of the fixed effect model shows that the coefficient of FSIZE and LEV all shows a negative relationship with market-based approach of firm valuation, measured using share price (SP). This implies that they have the potential to negatively influence the market-based approach of firm valuation of the firms sampled. While EVA the depicted a negative coefficient book value-based approach of firm valuation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will be affected negatively. While EVA and ROA depicted a positive relationship, suggesting that and increase in EVA and ROA is expected to positively influence market-based approach of firm valuation. The r-squared from the fixed effect model shows that 97% of changes in the explanatory variable is influenced by the variables considered in this study, suggesting that the model is fit and can be used for decision making. The F-statistics on the other hand shows that the variables considered have significant impact on market-based approach of firm valuation of the firm sampled.

While the result of the random effect model reveals that the coefficient of EVA and ROA shows a positive relationship with share price which is a measure for Market Based Approach of Firm Valuation (SP). This implies that Economic Value Added is poised to improve share prices as a measure of market-based approach of firm valuation of the firms sampled. While FSIZE, and LEV all revealed a negative coefficient, suggesting that when share prices is used in measuring the Market Based Approach of Firm Valuation, it will result in a reduction in share price as it presently has a negative influence on market-based approach of firm valuation. The r-squared and F-statistics from the random effect model reveals that EVA has no significant relationship with book value-based approach of firm valuation.

Furthermore, the above table also revealed that the constant of each of the model is positive. It can also be seen from the result obtained above that the r-square for each of the models is relatively low, with only fixed effect model having value greater than 70%. It is also noteworthy to also mention that the F-statistics for the entire models were insignificant except for fixed effect model. However, the result of the Hausman Test

favours the use of fixed effect which gave an appropriate result for the analysis. Thus, the conclusion of this hypothesis is based on the fixed effect model and the result obtained revealed that the EVA has a significant effect on share price as a measure for market-based approach of firm valuation.

5. Conclusion and Recommendations

The study evaluates the impact of economic value added on firm valuation in Nigeria. The study uses three proxies to capture firm valuation. The variables are income base of firm valuation that is measured as discounted cash flow (DCF), asset based of firm valuation using net book value (NBV) and market based approach of firm valuation using publicly traded prices in the stock exchange (SP), while the explanatory variables (EVA) was measured as the company's profit after full cost of capital, while Firm size (FZE) and Leverage (LVG) are use as control variable. Based on the findings of this study, EVA has a significant effect on firm valuation. Specifically, the result revealed that EVA has a significant effect on discounted cash flow- which measured income-based approach of firm valuation. Also, EVA depicted a significant effect on book value approach to firm valuation, which is measured using net book value of asset. Similarly, a significant relationship exists between EVA and market-based approach of firm valuation, measured using share prices. Thus, this study concludes that Economic Value Added has a significant effect on firm valuation. It therefore recommended that successful value-based management firms should maintain that the technical accounting requirement of EVA is straightforward and makes only minimal adjustments to their accounting procedures. To give investors a normal return on their investment in the company's shares, managers should work to boost future EVA. This is crucial for establishing success standards for management incentive compensation schemes by corporate compensation committees as well as securities analysts evaluating stocks. To increase the wealth of owners because they hold a particular position in the company and need the rate of return due to the risk, managers must work to satisfy both the needs of the company's customers and those of the owners. Firms should also strengthen internal financing to reduce financing from debt, as debt may affect the value of EVA.

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CRYPTOCURRENCY TRANSACTIONS AND THEIR APPLICATION TO STANDARD FINANCIAL REPORTING: A SYSTEMATIC REVIEW.

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Abstract

Cryptocurrency lacks standardization in the industry, thereby necessitating the difficulty in applying cryptocurrency transactions into standard financial reporting standards. This research examined the extent to which accounting standards have mutated to accommodate cryptocurrency. A systematic review protocol was conducted using extracted bibliographic data from the Web of Science, the Scopus, Google Scholar likewise, Research Gate. This research is rooted in a comprehensive examination of 137 studies using systematic literature review (SLR) method with the aid of VOS viewer and Rayyan. These studies were analysed using bibliometrics and evaluated critically in connection to two key areas: accounting for cryptocurrency and IFRS model for reporting crypto assets. This research established pooled research reports on cryptocurrency transactions and the adjustments made by standard financial reporting standards to accommodate crypto transactions. The study found that the IFRS framework does not provide a clear-cut direction on how to account for cryptocurrency transactions. This research work contributes to the evolvement of accounting in standardizing the inclusion of cryptocurrency as a financial reporting item.

Keywords: Accounting Standards; Cryptocurrency; IFRS Model; International Accounting Standard

1. Introduction

The cryptocurrency invention is gradually restructuring the delineations of auditing and financial reporting (Lombardi & Zecundo, 2020; Mancini et al., 2021; Marrone & Hazelton, 2019). Over the past decade, much research contribution as it impacts on innovations in technology for instance, automation (Egiyi & Chukwuani, 2021; Chukwuani & Egiyi, 2020; Kokina et al., 2017), big data (Vasarhelyi et al., 2015; Cockcroft & Russell, 2018), cloud computing (Egiyi & Udeh, 2020; Cleary & Quinn, 2016; Choudhary & Vithayathil, 2013), social media (Arnaboldi et al., 2017; Ramassa & Di Fabio, 2016) and artificial intelligence (Mosteanu & Faccia, 2020; Sutton et al., 2016) to facilitate the research and accounting practice. There is a need for business models to revolutionize to change management control processes and take charge of opportunities while avoiding some risks that may be emerging. The accounting, auditing and reporting of cryptocurrency is essentially recorded in a blockchain (Schmitz & Leoni, 2019). Blockchain can be said to be a digital ledger distributed in such a way in a network that it is partook by several associates to enable the recording of transaction and tracking of property in a way of tangible and intangible assets in an organized way. In the form of blocks, authorized transactions are added to blockchain, in a chain that is in a chronological order, secured by cryptology signatures (Bonson & Bednarova, 2019). Marked with a timestamp and linked to the previous one is a particular block, making it nearly impossible to alter the blockchain due to its decentralized ledger (Bonson & Bednarova, 2019).



Cryptocurrency transactions differ from traditional financial transactions in several ways. One of the main differences is that cryptocurrency transactions are not regulated by central authorities or intermediaries. This means that the responsibility for verifying and recording transactions lies with the nodes in the network for blockchain maintenance. To apply cryptocurrency transactions to standard financial recording standards, it is necessary to develop systems and processes that allow the data from the decentralized ledger to be incorporated into existing financial reporting systems. This can be achieved using APIs, data mapping, and other technologies that allow for the integration of cryptocurrency data into existing financial systems.

It is important to note that the current lack of standardization systems in the industry dealing on cryptocurrency, is making it difficult to apply cryptocurrency transactions into standard financial reporting standards. However, as the industry continues to evolve and mature, it is likely that more standardized systems and processes will be developed. This research work contributes to the evolvement of accounting in standardizing the inclusion of cryptocurrency as a financial reporting item.

1.1 Objective

To examine the extent to which accounting standards have mutated to accommodate cryptocurrency. This research work will be of benefit to accountants and auditors as there will be a clear-cut direction on how to account for such transactions.

1.2 Research Question

According to (Booth et al., 2012), research questions should be guided by a systematic review which will establish whether there is a focus, a subject and the research extent. With this in mind, we have formulated the following inquiries:

RQ1. What are necessary adjustments done to integrate cryptocurrency transactions into standard financial reporting?

2. Review of Literature

Scopus, Web of Science, Google Scholar, and Research Gate are the primary sources of information to assure scientific robustness and inclusivity. A primary set of keywords associated to the topic under study: crypto-assets or cryptocurrencies (crypto*), blockchain, accountant, accounting (account*), audit, auditor, auditing (audit*), report, reporting (report*). This research sequence was authenticated via an e-survey conducted on 3 experts accounting field and the blockchain technology including experts in 2 SLR into the management and business world. These experts appraised the significance of the search keys to be used

for the search sequence and recommended variations that made the literature review more sophisticated. Journal articles and conference papers are the selected article types. Only English-written papers that belong to accounting, business, management, and financial technology were included.

The gap that this research work will fill is the provision of a clear-cut direction on how to account for cryptocurrency transactions.

From the databases, 137 bibliographic data were extracted collectively as an RIS file, thereafter combined. The extracted data were sorted by 3 Reviewers with the aid of Rayyan Software for Systematic Review. After the sorting, the bibliographic data narrowed to 37 records. See Fig. 1 to for further detail.

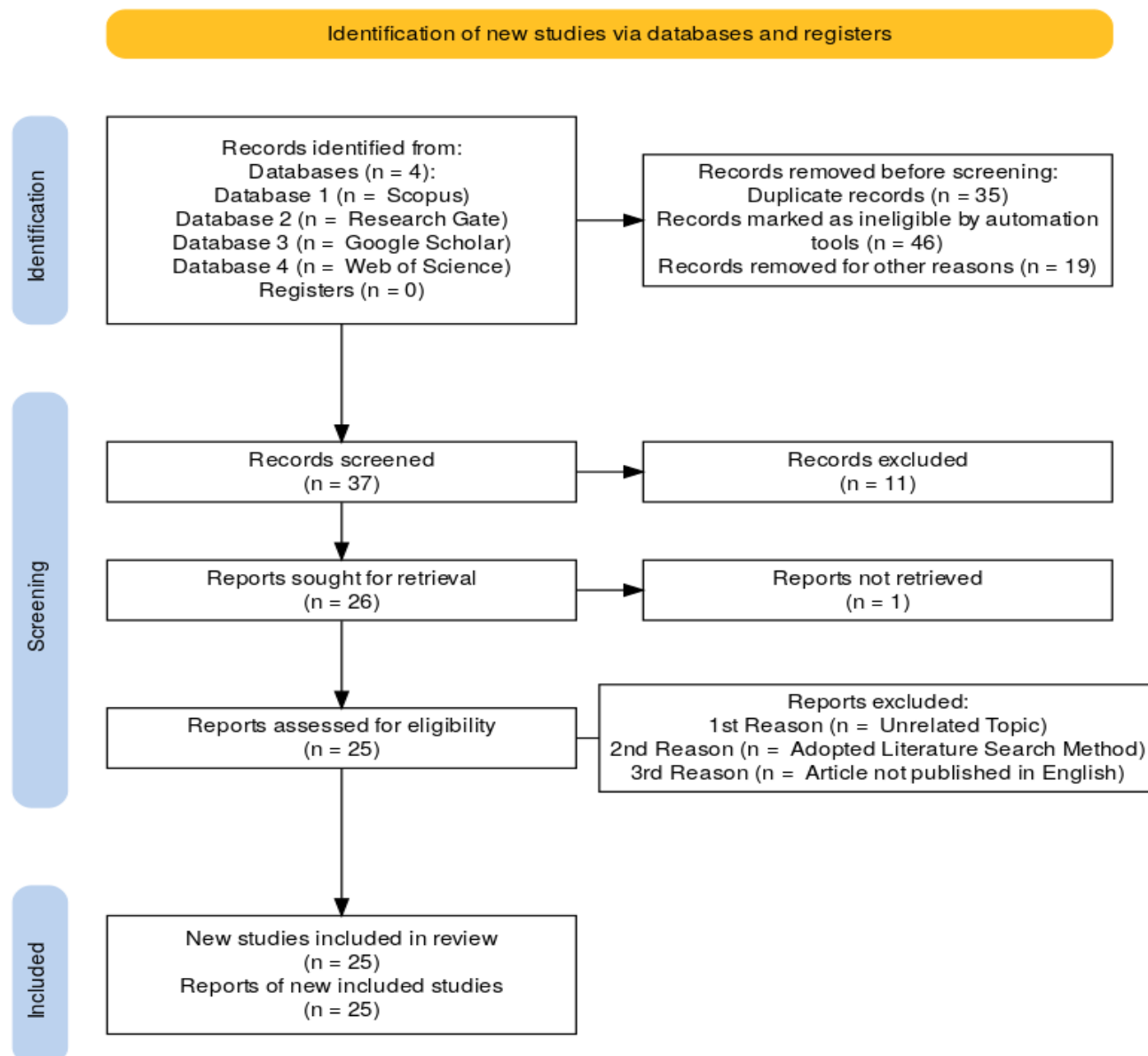


Fig. 1: Bibliographic Record Flowchart

Bibliometric Mapping/Visualization

Fig 2 presents a mapping of the bibliometric subnetwork comprised of the authors included in this study that are highly interconnected. The mapping is based on the literature citations and is generated using bibliographic coupling and VOSviewer software. Bibliographic coupling measures the similarity between two publications by counting the number of shared references (Manetti et al., 2021). The dot's size in the figure corresponds to the weight of each publication, determined by the number of citations it has received. This method helps to highlight the most significant, frequently cited works. The overlay colours in Fig 2 indicate each year of publication for each document.

Fig 3 displays the results of our cooccurrence analysis. The relatedness of keywords in this analysis is decisive on the number of documents they are seen together. The keywords used in at least three publications were included in the analysis. The keywords were arranged into groups, which are collections that are strictly related intersections found in a bibliometric web. VOSviewer uses colours that will indicate the cluster assignment of each node based on cooccurrence relations, and the clustering technique used by VOSviewer according to Waltman et al. (2010). The heaviness of the intersection is determined by such frequency of the associated catchword.

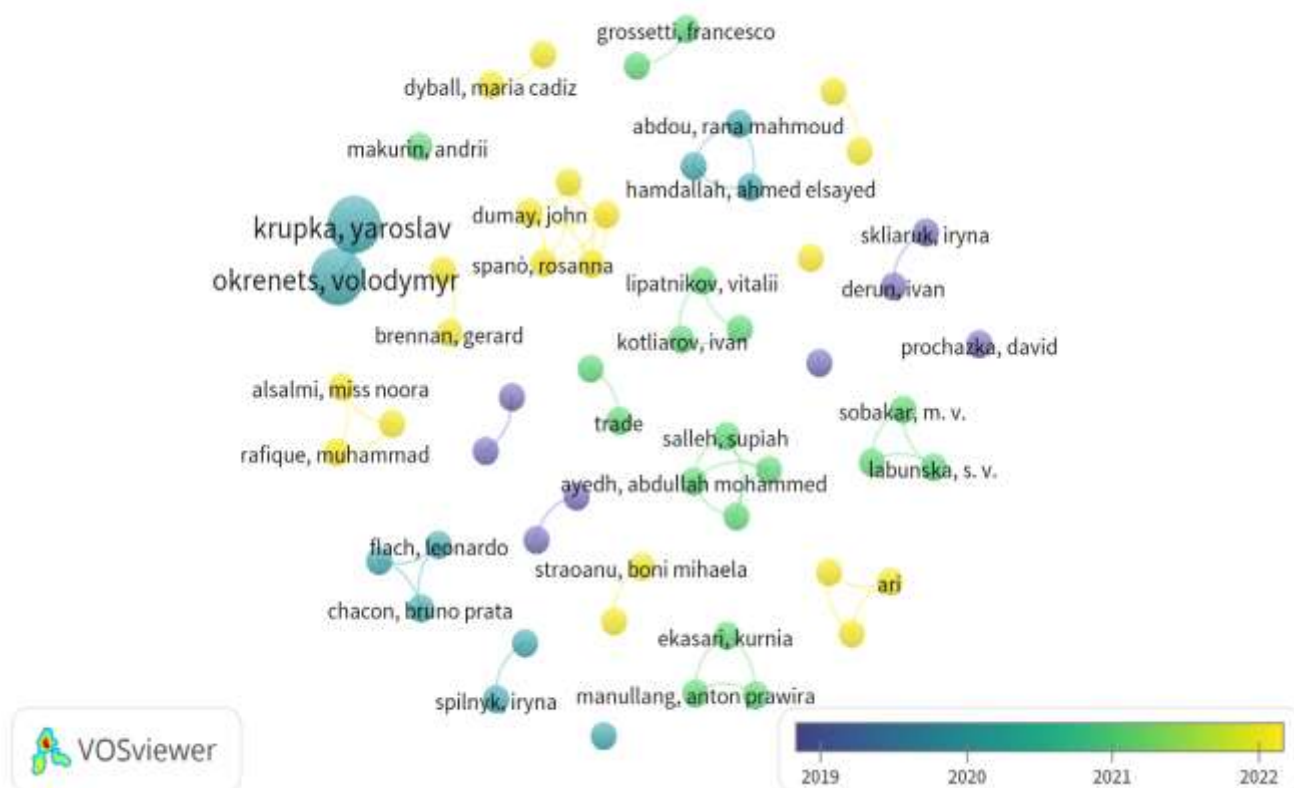


Fig 2: Overlay Mapping of Bibliographic Data

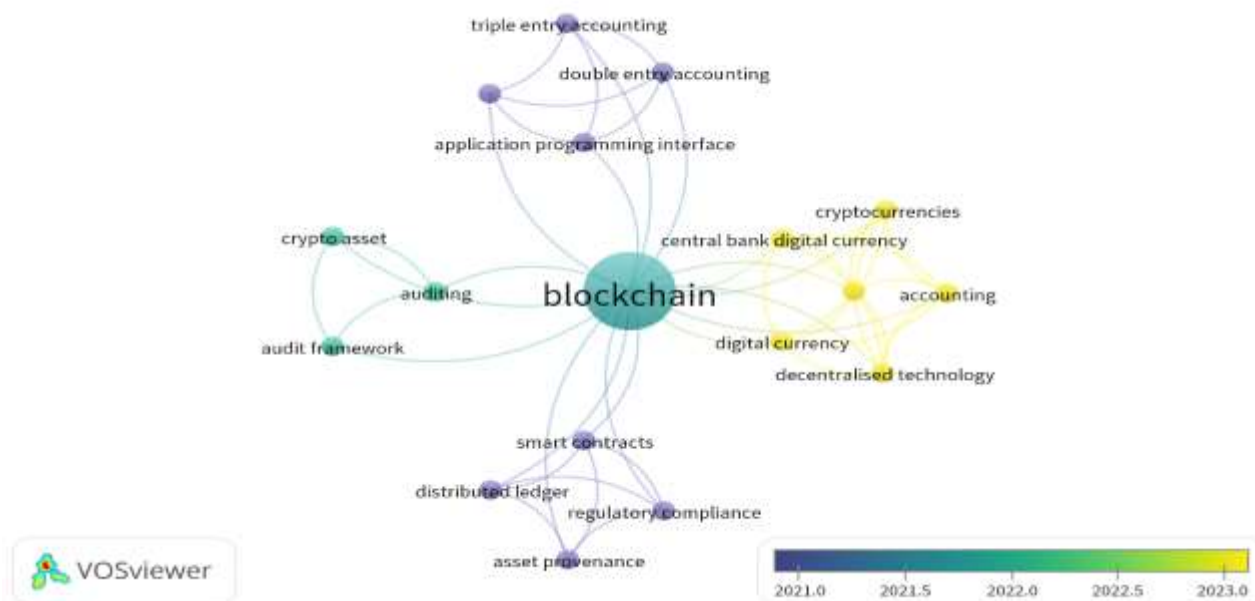


Fig 3: Overlay Mapping of Keywords

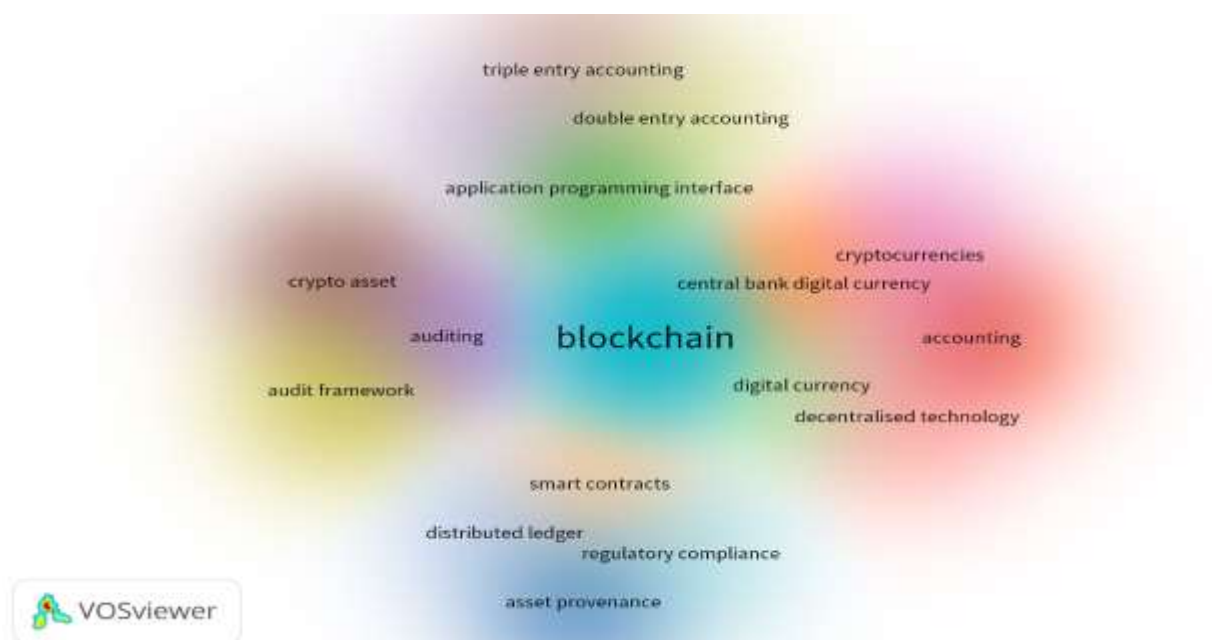


Fig 4: Density Visualization of Keywords

3. Methodology

Systematic review protocol was adopted in this study to reduce the confusion, thereby proffering scientific value to results. To guarantee sturdiness in this procedure, the research of Lombardi and Secundo (2020) and Fragoso et al. (2020) were built on. Also, Preferred Reporting Items for Systematic Reviews and Meta-Analyses, PRISMA, was used to present analysis. Using PRISMA helps to ensure that the results of

systematic reviews and meta-analyses are reported in a clear, transparent, and comprehensive manner, which helps to improve the quality and reliability of these studies (Page et al., 2021). PRISMA helps ensure that the results of the systematic processes in the reviews and meta-analyses were reported in a rigorous and systematic manner, which helps to reduce the risk of bias and increase the reliability of the results.

4. Discussion

Blockchain for accounting and auditing: from exploration to full exploitation. This topic includes 25 research products published between 2021 and 2023. Fig 4 shows a cooccurrence heatmap of the main authors' keywords in this cluster. Two blockchain accounting research areas within this specific topic, accounting for cryptocurrency and IFRS model for reporting crypto assets.

Cryptocurrency and Treatment in Recognized Reporting Standards: A Textual Analyses

Blockchain technology was initially developed to establish a decentralized cash payment system, rather than create a new currency (Rosic, 2017). The cryptocurrency that emerged was merely a secondary outcome, serving as a means of exchange which is a key feature of money (Kiyotaki & Wright, 1989). Ten years later, individuals are not only using cryptocurrencies for online transactions, but also as a form of investment, hoping for increase in capital assets value. Cryptocurrencies fulfil the next purpose of money as store of value (McCabe, 1989; Ram et al., 2016). However, like any new investment, cryptocurrency prices are highly unstable and can experience significant fluctuations. Additionally, their nature as digital raises questions about their value as intrinsic, contributing to their price volatility.

Cryptocurrencies make up a significant portion of wealth, regardless of their actual value. At the end of 2022, Coinmarketcap.com listed 22,452 cryptocurrencies which has a total market capitalization of \$1,062,450,416,043. At times, the total market capitalization of cryptocurrencies has exceeded that of Google, which is the second largest company based on capitalization. It was also comparable to the GDP of Switzerland (Haig, 2018). The creation of cryptocurrencies can also impact accounting. Blockchain technology is likely to change the method through which transactions in accounting may be recorded and audited, while companies use cryptocurrencies in their daily business and must account for them in their financial statements.

Recording cryptocurrency transactions as noted by the International Financial Reporting Standards, (IFRS) framework poses huge challenge as the IFRS framework does not provide a clear-cut direction on how to account for such transactions. The IFRS suggests that the most appropriate method to treat most cryptocurrency accounting cases would be through the IAS 38 'Intangible Assets' rule, which could be

accounted for either at cost or through revaluation (Ibrahim et al., 2021; Grant Thornton, 2018). Cryptocurrency is identifiable, separable and has future economic benefits but may not be controllable. These selected research works (Dyball & Seethamraju, 2021; Labunska et al., Malladi, 2022; Maiti et al., 2021; 2021; Ramassa & Leoni, 2021; Tan & Low, 2017) brings major research considerations and deliberations on the integration of Cryptocurrency into IFRS. Ramassa & Leoni (2021) discussed the challenge posed by the emergence of cryptocurrency, a rapidly evolving technology, to the International Accounting Standards Board, (IASB). They highlighted the tension between the constituents who are demanding new solutions and the IASB's role in resisting such pressures while maintaining its position. They also highlighted the increasing significance of agenda decisions in the International Financial Reporting Standards, (IFRS) environment and the limitations of the IASB's regulatory process which is usually long regarding the new and emerging issues in accounting related to cryptocurrency. Malladi (2022) suggests that there are shortcomings or limitations in the current treatment of cryptocurrencies under IFRS in accounting compared to the traditional accounting structure established by IFRS as the current IFRS accounting framework has limitations in dealing with the accounting of cryptocurrencies, which are different from traditional financial assets. These limitations are seen as deficiencies in the IFRS framework. Cryptocurrency transactions present new and unique risks to auditors due to their ambiguity and the absence of official guidance. These risks must be considered during the process of client acceptance and audit planning, including the consideration of the specific risks associated with these transactions. Dyball and Seethamraju (2021) evidence from Australia showed that blockchain technology presents distinct challenges to traditional audit methods. As a result, auditing firms may need to adjust the way they plan and design audit procedures and execute financial statement audits. Professionalism and commercialism principles are complementary in nature, offering both opportunities and obstacles for audit firms to broaden their expertise in this emerging field. Maiti et al. (2021) suggest that the design of a potential Triple-Entry Accounting (TEA) system has a capability to offer instant perception into the operations of the business, thanks to its architecture. Labunska et al. (2021) hold that there is need for accounting bodies to develop reporting models that will comprehensively accept transactions in cryptocurrency and cryptocurrency as assets. According to Tan and Low (2017), Bitcoin was created as a decentralized currency and is meant to complement, not replace, fiat money. Faithful representation as an accounting principle requires different interpretations for financial reporting based on the reporting body. Trading firms treat Bitcoin like a foreign currency and even measure revenue or expenses in terms of the currency it is reporting in, while exchanges in digital currency view Bitcoin in terms of goods and apply tax treatment on in during accounting.

5. Conclusion

As per IAS 2, the default approach to recognizing inventories implies recording them at the lowest of cost and net realizable value. When it comes to commodity broker-traders, the Standard requires that their inventories are measured at fair value less costs to sell. Changes are made in the fair value being recognized in profit or loss in the same period under review. This approach would only be suitable in limited circumstances where the reporting entity has acquired cryptocurrency assets with the intention of selling them soon and generating profits from price fluctuations or broker-trader margins.

IFRS does provide general guidance on how to account for financial assets and liabilities, that can be applied to cryptocurrencies in some cases. In the case of Bitcoin, this means that an organisation should recognize Bitcoin as an asset at the time it was acquired for the purpose of holding it for future use or for sale and also when the asset's cost can be measured reliably. The value of Bitcoin can be volatile, which could make it difficult to measure its cost reliably. This would need to be considered when determining if the criteria for recognition are met.

Financial assets are recognized on the statement of financial position when an organisation has an authority over the legitimate rights to the asset and it is likely that the entity will receive profits from the asset in the future. Cryptocurrencies may meet these criteria and could therefore be recognized as a financial asset.

Liabilities, including financial liabilities, are recognized when an organisation has a present responsibility to convey profit making resources because of a previous event and it is likely that the organisation will be required to convey the assets. Some obligations arising from cryptocurrency transactions may meet these criteria and could therefore be recognized as financial liabilities. It is imperative to note that recognizing cryptocurrencies as financial assets and liabilities will depend on the specific circumstances of each transaction and entity, and may also be influenced by the laws and regulations guiding the commission which the organisation operates in.

6. Recommendation

The IFRS framework should as a matter of importance, provide a clear-cut direction on how to account for cryptocurrency transactions.

The IFRS framework does not provide a clear-cut direction on how to account for such transactions.

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THROUGHPUT ACCOUNTING AND ECONOMIC VALUE ADDED OF FIRMS IN THE NIGERIAN MANUFACTURING SECTOR

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Abstract

This study examined the concept of throughput accounting as an operational accounting method which has a nexus with the theory of constraints in manufacturing concerns. Theory of constraints as a management strategy describes methods to maximise operating profit, but both must deal with bottleneck resource which can hamper the profit. The proxies which are common to throughput accounting and theory of constraints have effect on Economic Value Added in firms used in the study. The ex post facto research design was used as the data were extracted from the Nigerian Exchange Group fact books for the period 2015 to 2021. The population of the study was the average of 83 companies in the manufacturing sector which were listed in the stock exchange during this period. The sample size used was 69. Four research questions were answered, and four hypotheses were tested at 0.05 level of significance. Multiple and simple regression analysis were used to test the data collected. Findings indicate that a significant relationship exists between the joint measurement of throughput accounting with theory of constraints and Economic Value Added of listed manufacturing firms in Nigeria. It was recommended among others that management should consider the profitable use of the scarcest resources when operating expenses are treated. More so, management should see profit as a function of material cost, total factory cost, and throughput. Manufacturing companies should not recognize inventory as an asset but take it as the product of uncompleted manufacturing which stands between the company and profit.

Keywords: Throughput accounting, theory of constraints, economic value added.

1. Introduction

Throughput accounting is a management accounting approach that helps management to make decision for the improvement of profitability in the enterprise. It is a simplified approach to operational accounting. It uses more of analytical and systemic approach to make decisions clearer by using the precepts of the theory of constraints.

The throughput concept was introduced to divert attention of manufacturing firms from so much emphasis on cost and inventory to establishing a relationship between throughputs and operating expenses to have productivity and net profit. Theory of constraints as a management strategy describes methods to maximise operating profit. It starts from the principle which identifies the flow of money generated by an enterprise and identifying the limitation of this flow, caused by a single factor, the main constraint (bottleneck). Both principles must deal with bottleneck resource which can hamper the profit (Oanh, 2022).

Burch (1994) posited that the traditional role of management accountants has been to control and reduce cost over time. With the advent of just in time (JIT) philosophy, inventory is seen as a liability rather than an

asset, and manufacturing companies have scrambled to eliminate as much inventory as possible, to reduce the company's liability. The throughput concept was introduced to divert attention of manufacturing firms from so much emphasis on cost and inventory to establishing a relationship between throughputs and operating expenses to have productivity and net profit. The variables used in the construction of equations in throughput accounting are: Net Profit, which equals Throughput, less operating expenses; Return on inventory, which equals Net profit, divided by inventory; Productivity, which is derived as Throughput, divided by operating expenses; and Inventory turnover, which equals Throughput, divided by inventory.

By having relationships such as the above in place, Burch (1994) opines that companies can establish a base line for determination of continuous improvement on their performance by making decisions using throughput analysis. As this analysis helps management to reduce cost, investment decisions can be made on areas of cost minimization. Throughput therefore can be defined as the rate at which the system generates profit through sales which is equal to sales less material cost.

From the perspective of the theory of constraints, it could be referred to as contribution, or contribution margin. Simply put, throughput is the money that is available for settling all expenses, after the raw materials costs have been paid for. From the relationship shown above, the other variables seen are inventory and operating expenses. While inventory represents the money invested by the company in products it intends to sell, valued at only raw materials costs, operating expenses is the money spent to convert inventory to throughput (Baye & Prince, 2013). The aim of management is to reduce inventory and operating expenses, while throughput is increased. According to the Chartered Institute of Management Accountants (CIMA), the theory of constraint and throughput accounting have something in common, the maximization of throughput and reduction of inventory and operation costs.

The theory of constraints, according to Goldratt (1984) assumes the position that a chain is not strong when it has a weak link. Therefore, the constraints - those weak links - need to be identified and removed to ensure that the weakness can no longer damage or hinder the manufacturing progress and success of the company. Using the theory of constraints, a company can focus its efforts and attention on the business obstacles and optimize processes so that it sees improved performance or output (Uwah & Asuquo, 2016).

The theory of constraints states that any system contains a choke point that prevents it from achieving its goals. This choke point, which is also known as a bottleneck or constraint, must be carefully managed to ensure that it is operational at all the time as possible. If not, then goals may not be achieved. The reason is that no additional throughput (revenue minus all variable expenses) can be generated unless the capacity of the constraint is increased (Bragg, 2022).

According to CIMA (2005) the general hypothesis of throughput accounting and theory of constraint is that constraints are impediments to achieving a firm's goal and their impact reduces profits. This hypothesis is based on the belief that every business has constraints. A constraint can be a resource, a company policy or management mindset. This hypothesis has similarities with limiting factor analysis, which is defined as a factor or condition that impedes meeting goals.

Another major variable of this study, the Economic Value Added (EVA) is a commercialized performance measurement system that emphasizes the incremental income which an organization can make over and above the required income meant to cover costs of capital which is invested by both debt and equity holders in the organization (Hill, 2008). EVA focuses on the determination of the earnings that are above the required cost of capital for the shareholders and other providers of funds. Therefore, if the firm earns more than the required rate of return, then value has been created for the shareholders. Economic Value Added (EVA) emphasizes the accounting profit minus economic or implicit costs. Therefore, this study is to establish the relationship between throughput accounting with theory of constraints and economic value added, and how these variables can assist manufacturing companies in Nigeria to have value addition in their operations.

The major problem identified in this study is that most manufacturing concerns continue to make operational decisions, based on traditional generally accepted accounting principles (GAAP) accounting analysis, and cost-benefit analysis to try to return to profitability or sustain profitability. There exists a very strong opposition between traditional management accounting and throughput accounting because traditional accounting makes no distinction between the resources of the system. The gap to be filled however, is that manufacturing companies would now deviate from the norm. What is needed is an effective way to judge the impact of operational decisions on profitability (e.g. decisions about purchasing, inventory, pricing, staffing, production methods, promotions, sales channels, and more), using available operations data. This leads to the search for new growth paths for increase in sales (Uwah & Asuquo, 2016).

Throughput Accounting (TA) can help companies evaluate impact of operational decisions on profitability before they are made. This type of accounting can help manufacturing companies to monitor actual impact of each decision on profitability, and adjustments can be made to attain profitability. As Holcomb (2016) puts it, throughput accounting uses three key metrics to evaluate each decision, calculated from existing data: Throughput (T), Investment (I) and Operating Expense (OE). From these, it is possible to estimate other traditional financial metrics for day-to-day decision-support.

Therefore, the link between throughput accounting (TA) as the independent variable and economic value added (EVA) of firms, as the dependent variable is that EVA, being a value-driven concept uses non-financial

measurement with flexibility of adapting to the changes of internal and external environments to attract the benefits provided by TA, which uses cost reduction and efficiency techniques for decision making without relying solely on the information derived from the generally accepted accounting principles (GAAP).

2. Review of related literature

The manufacturing sector has to do with the real sector of an economy. Accounting for manufacturing is concerned with how resources are converted into work-in-progress and then finished goods that are value-adding to all other agents of the economy. Manufacturing companies will typically have a long production cycle with significant number of raw materials, unfinished and finished goods, hence a high level of inventory. This is when throughput accounting is expected to account for the details and recognize the constraints that would cause delay in production, increase production time and cost, hence a reduction in profit (Akinjare, Ojo, Adetiloye & Akinjare, 2019).

2.1 Conceptual review

Economic Value-Added based performance.

With the continuous reduction in profit, value continue to diminish, rather than add. Olusegun et al (2021) opine that firms use different methods to measure performance as this however depends on what their objectives are. Multiple performance measures provide a more comprehensive picture of performance that considers a wide range of possibilities.

Financial elements from the Generally Accepted Accounting Principles (GAAP) are not the only indicator for measuring performance of a firm. Non-financial measurement and the ease or flexibility of adapting to the changes of internal and external environments could also be used. This justifies why a value-adding approach should be adopted, rather than using just financial analysis, as value-creating activities are not identified by financial analysis. There are alternative performance measurement tools like customers' satisfaction, competitive advantage, product quality, resources, and value creation. Basically, how the management of the firm handles these categories will determine financial implications for shareholders' value (Olusegun, Alexander, Mojisola & Akinjare, 2021).

Economic Value Added (EVA) is performance measurement that measures the economic profit of an organization and not the accounting profit. The focus of EVA is to determine the earnings that are above the required cost of capital for the shareholders and other providers of funds. If the firm earns more than the

required rate of return, then value has been created for the shareholders. Economic Value Added (EVA) emphasizes the accounting profit minus economic or implicit costs. Olusegun et al (2021) posit that accounting costs or explicit costs are expenditures firms make to acquire the resources necessary for production, while economic or implicit costs consider the opportunity costs of using the resources provided by the owners of the firm. EVA therefore becomes a better measurement application used by firms during the decision-making process when capital expenditure in plant and equipment are made for the benefit of the stakeholders (Uwah, 2019).

EVA could be used as a capital allocation tool for capital rationing for a firm and the economy at large. Using EVA, a minimal acceptable performance rate could be set as the expected return of the sector. A return below this average return means that the owners of the firm and the economy at large could have allocated their fund to another company or industry and be better off in terms of net-worth (Sabol & Sverer, 2017).

Cost of capital and economic value added.

Albrecht et al (2008) say that economic value added (EVA) was proposed by a US firm, Stern Stewart, and Company in 1993, and that it is a commercialized performance measurement system that emphasizes the incremental income which an organization can make over and above the required income meant to cover costs of capital which is invested by both debt and equity holders in the organization. Hill (2008) also summarized this by saying that if firms make money profits that exceeds their overall cost of funds, they create economic value to its shareholders. This concept which is quite like the residual income concept is given as: (return on capital invested \times cost of capital). That is,

Capital Invested = after tax operating income – (cost of capital \times capital invested).

$$= \text{Net operating profit after tax} - (\text{cost of capital} \times \text{invested capital}).$$

There is similarity between the residual income formula and the economic value added (EVA) formula. But Meigs and Meigs (1995) pointed out that though the two concepts seem similar, there are remarkable differences which are that while the residual income concept focuses on operating profit before tax, the EVA insists on net operating profit after tax. This shows that EVA considers the effect of taxation when calculating profit. This assertion is corroborated by Albrecht et al (2008) who further pointed another difference, being that residual income considers a minimum required rate of return (hurdle rate) as a variable for measuring the minimum level of income which is earned from using the organization's assets. They maintained that the hurdle rate is normally set by the management and may be used on the cost of acquiring the assets or capital for the organization. EVA on the other hand, according to them is focused on using the firm's specific cost of capital to establish the rate of returns required on the capital used by the firm for the project(s). This return

must be the average, expected by both shareholders and debenture holders. *This is the concept of weighted average cost of capital*, which represents the investors' opportunity cost of taking risk by investing funds in a company.

According to Olusegun, et al (2021) the total cost of a company's capital is known as the weighted average cost of capital (WACC). Each type of finance's cost is weighted according to its share in the firm's finances to get the WACC. The proportions are often based on market prices. Since debt is typically less risky than stock, it tends to lower a company's cost of capital. This benefit is made even more appealing by the fact that interest paid on debt is tax deductible, a feature known as the "tax shield" on debt. A firm's economic value added is influenced by its averaged cost of capital, total assets, and operational profit after taxes.

WACC becomes the appropriate discount rate to value a firm. Considering a firm as a going-concern, which has an unlimited life span, the value of the firm is given as:

$$V = \sum_{t=1}^{n=\infty} \frac{FCF_t}{(1 + k_0)^t}$$

Where: V= Firm's value; FCF= Free cash flow; K_0 = Weighted average cost of capital (WACC).

In a firm where FCF remains constant forever (in perpetuity), the firm's value is:

$$V = \frac{FCF}{k_0}$$

A major difference between residual income and economic value added, as opined by Albrecht et al (2008) is that residual income has a combination of the hurdle rate and average total assets to determine the minimum income required by the firm, while EVA uses invested capital which is concerned with interest-bearing debt plus all the shares invested in the firm. It is also noted that non-interest-bearing operating liabilities, such as accounts payable are excluded by EVA in the residual income equation. This gives a new equation in invested capital assets as "Interest-bearing debt + total equity." It can also be computed as "Total assets – non-interest-bearing operational liabilities." Albrecht et al (2008) therefore submitted that operating liabilities are not included in this computation because they do not generate any explicit interest expense for the firm. The operating liabilities rather represent a free source of capital for the firm's use to generate further operating profits. It is carried that economic value added is the profit after-tax that is greater than the minimum return on capital. Many authors see EVA as the best measure of true profitability (added value) or otherwise (value reduction) of a firm, and it varies with the cash flow instead of earnings per share (EPS).

However, economic value added (EVA) can be measured using the three basic inputs in its definition, i.e. current value of capital in the investments; returns earned on capital invested; the initial cost of capital.

Though there is a difference between market value and book value, when EVA is measured, these variables can be taken only at book value and considered as proxy of the firm's market value. The invested capital in assets at hand and the expected future growth make up the market value while the book value reflects the accounting information of the current period and the accounting decisions made over time, regarding depreciation of the assets, valuation of inventory and dealing with acquisitions. Therefore, adjustments in the book value are made to get a value of the market that is reasonable. This adjustment is made by subtracting from the current value of capital, the book value of capital (Fabozzi & Peterson, 2003).

Throughput accounting practice and organisation's goal

In the manufacturing sector, the focus of management is on cost reduction and efficiency, and probably looking at automation but little consideration is given to knowing if these variables have major impact on profitability. The study of throughput accounting has revealed that efficiency in cost reduction may not support profitability on a standalone, as level of inventories may keep on increasing because of efficient production, but unsatisfactory sales and meeting of customers' needs may be played down factors (Udoayang, Uwah & Asuquo, 2020).

The Association of Chartered Certified Accountants (ACCA, 2022) opine that organisational goal in manufacturing is to make profit, but this needs to be more clearly defined. The operational goal should be achieved by increasing throughput whilst simultaneously reducing inventory and operational expense. This is based on the proposition that 'throughput' is the rate at which the system generates money through sales; 'inventory' is all the money that the system has invested in purchasing things that it intends to sell, while 'operational expense' is all the money that the system spends to turn inventory into throughput.

Bottleneck concept

Uwah (2019) avers that bottlenecks are the components of the manufacturing process which could be machine, facility, department, or resource which is already at its full capacity and cannot handle any additional manufacturing demand placed on it. It limits the throughput of the associated process. Within an organisation, the theory of constraints is implemented by concentrating on and following a few measures that could help with bottlenecks. To help organisations, deal with these restrictions (bottlenecks) in the system, Goldratt (1984) created tools, from identifying the bottlenecks, exploiting them and elevating same for the entire system rather than any discrete unit within the organisation. Asuquo, Udoayang and Uwah (2021) maintain

that identifying the bottlenecks is the initial step, and the company will next decide how to exploit the system's inefficiencies.

Ensuring that the resource at the bottleneck is actively exploited as much as feasible and creating as many units as possible is part of the system exploitation. Therefore, the crucial words in this context are "productivity" and "utilisation." Manufacturing processes cannot eliminate idle time because the process must wait for the bottleneck units to reach capacity once the non-bottleneck resources have completed their tasks. At this stage, the company's idle time is spent waiting for the bottlenecks to reach capacity (ACCA, 2022).

According to Uwah (2019), the bottleneck should receive more attention than other departments because its production capability should dictate the organization's overall production schedule. Idle time is inevitable, according to Zeyneb et al (2014), and must be recognised if the theory of constraints is to be successfully used. As the system becomes congested, adding more work than the constraint can handle causes extra work-in-progress, longer lead times, and the creation of what appear to be additional bottlenecks. The non-bottleneck resources must occasionally be idle because the system does not require that they be utilised to their maximum potential.

According to Uwah (2019), the company has a variety of options that can be used to elevate the bottlenecks. Elevation typically calls for greater financial investment. A new bottleneck will eventually develop once an existing one has been widened. This might take the shape of an additional device that can now process fewer units than the elevated bottleneck. But ultimately, market demand is likely to be the system's biggest obstacle. The theme of the theory of constraints is to never become complacent, regardless of what the next bottleneck is. Since nothing stays stable for a very long, the system should be one of continual improvement. A bottleneck can be exploited of by increasing throughput through the creation of an ideal production plan. This necessitates the use of the simple key factor analysis principles, also referred to as limiting factor analysis or principal budget factor (ACCA, 2022).

Limiting factor analysis and throughput accounting

An organisation must decide how to make the most of its bottleneck resource after it has identified it. Most firms produce more than one type of product, or they provide more than one sort of service, thus figuring out the best production strategy based on increasing throughput per bottleneck resource is a part of the exploitation process. Souren et al (2005) say the key factor analysis would first determine the contribution per unit for each product, and this then determines the contribution per unit of scarce resource by determining how much of the scarce resource each unit needs to produce it. A very similar calculation is made in the

context of throughput accounting, though it is not contribution per unit of scarce resource, which is calculated, but throughput return per unit of bottleneck resource.

The term "selling price less direct material cost" refers to throughput. This differs from the computation of "contribution," in which the selling price is reduced by variable overhead costs as well as labour costs. This is a crucial distinction because, according to the fundamental tenet of throughput accounting, all costs other than those for direct materials are largely fixed. As a result, working from the maximisation of contribution premise is flawed because it includes costs that are inherently uncontrollable in the short term.

The Association of Chartered Certified Accountants (2022) agrees with this assertion because, studies from many firms indicate that it is not feasible, for instance, to hire employees daily and fire them if they are not busy. Rather, if there is work to be done, a workforce must be employed by the company and if a worker is made to sit idle behind a machine for a while in the short run, the worker must be paid. This will reduce the incidence of high labour turnover.

Influence of firm's size on business success

The heterogeneous nature of manufacturing firms under study drew our curiosity. To satisfy this curiosity, we decided to look at the empirical research conducted by Pervan and Visic (2012) on "Influence of firm size on its business success". Business success here smacked of long-term firm value through profitability. This empirical research investigated a perceived problem of non-recognition of economies of scale by manufacturing companies in Croatia. A simple regression analysis of this model, $ROA = f(\text{firm size, current ratio, asset turnover, debt ratio})$ was used for the study.

The ex post facto research design was used for the study for a nine-year period (2002-2010) of which data on 2,050 firms was obtained from the Croatian Financial Agency. That study used total assets and number of employees as variables of firm size. They found out that a firm can use its size, as a factor, to undertake certain capital investment projects which can bring about high value to the firm in the short and long term. The results of their analysis however showed that size of firm has weak positive impact on the profitability of those firms. The reason for this weak relationship was however attributed to the agency theory, where management of modern manufacturing firms have shifted their focus from profit maximization to managerial utility maximization. Expectedly, the study showed that the growth in assets utilization will increase the profitability of the firm, while huge indebtedness of a firm will lead to its low profitability.

Lee (2009) however found out that firm size and firm value have a positive correlation. It was observed that the financial flexibility of large firms accounted for this because they have ability to present positive cash flow to take advantage of investment opportunities. Large firms also access funds with lower financial difficulties and have the possibility of future growth. But Ilaboya et al (2016) argued that there is no significant relationship between firm size and firm value. This assertion was supported by the earlier study made by Banchuenvilil (2012), Becker-Blease, Kaen, Etebari and Baumann (2010). While Becker-Blease et al (2010) maintained that better measure of firm size are transactions, agency and span of control costs rather than assets and sales because their study showed that transaction and agency costs as indicated by value added or number of employees have no effect on firm value; Banchuenvilil (2012) postulated that return on equity (ROE) which is an indicator of firm value is negatively correlated with the number of employees in the firm. The gap created in this study was that sales, a variable of firm size was not used to measure its effect on business success. This informed us to use sales as an indicator of firm size as a confounding variable in this study.

2.2 Theoretical Framework

2.2.1 Goldrat's Theory of constraints

In the last few decades, various management ideas have emerged, including the Theory of Constraints (TOC), which was created by Eli Goldratt at the beginning the 1980s. This theory plays a crucial role in the method of determining, analysing, and removing restrictions that limit the process of a firm adding value. Even though it cannot address every issue with decision-making, a constraint-oriented perspective on management processes offers a different perspective in the direction of increasing profits (Drazic, Loivic, & Markovic, 2018).

Theory of Constraints facilitates short- and medium-term production decisions since it is constrained-focused and intended to be a direct costing technique. As a result, both in theory and practice, product mix decisions have been the primary in the field of throughput accounting (Souren, Ahn & Schmitz, 2005).

2.2.2 Relevance of the theory of constraints

Theory of Constraints (TOC) focuses on the weakest ring(s) in the performance chain. The concept surrounding theory of constraints is that the theory views processes as they are rings of the same chain instead of thinking they are independent from each other. At the same time, the theory focuses on the weakest points which are bottlenecks for the entire company and try to determine the relationship of these

bottlenecks. This integrated management philosophy changes the way of thinking of managers and become an important tool for problem-solving. It can be used as a management philosophy which can be integrated with cost accounting system (Asuquo, Uwah, Effiong, Odey & Duke, 2021).

Zeyneb, Noyan and Ozalp (2014) stressed that the main aim of every company is increasing the profit. According to this point of view, constraints are main obstacles at achieving companies' aims. In this wise, everything which exists in the road of having more profit is considered as a constraint. So, if companies can handle constraints in their system and manage these constraints, they would have a continuous improvement management system which could help them achieve higher profits.

2.2.3 Net income theory by Durand

Net income theory, as propounded by David Durand in 1952 said that a firm can increase the value of the firm and reduce the overall cost of capital by increasing the proportion of debt in its capital structure to the maximum possible extent. Myers (1974) cited in Albrecht, et al (2008) stated that this theory was based on two considerations. One is that rates of interest are lower than rates of dividends owing to risk involved, and secondly, tax savings are derived, because interest is an expense that is tax-deductible. Durand (1952) also propounded the net operating income theory, otherwise called "Irrelevant Theory". Albrecht et al (2008) opines that Durand's theory believed that the total market value of a firm is not affected by a change in its capital structure. This is what keeps at constant, the overall cost of capital without considering the debt-equity ratio. It is to be noted that this theory assumes the absence of corporate income tax.

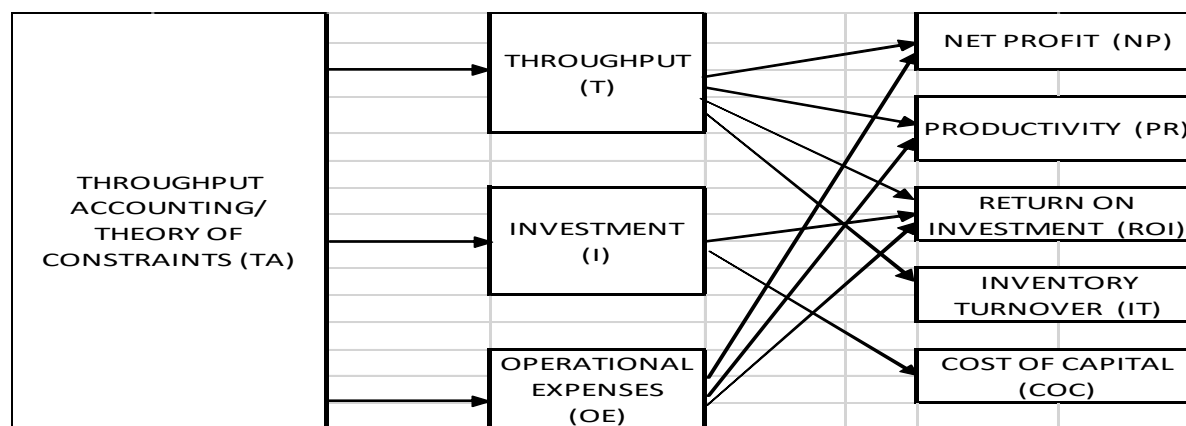


FIG.1: Schematic representation of conceptual framework, showing how indicators of Economic value Added (EVA) depend on throughput accounting/theory of constraint, Adapted from: Holcomb (2016)

From Fig. 1 above, “Throughput Accounting” (TA) helps Management to evaluate effect of operational decisions on profitability before they are made. TA uses three key metrics to evaluate each decision, calculated from existing data: Throughput (T), Investment (I) and Operating Expense (OE). The Economic Value-Added metrics, Net profit (NP), Productivity (P), Return on investment (ROI), Inventory turnover (IT), and Cost of capital COC) are indicated to depend on Throughput accounting/Theory of constraints’ metrics for day-to-day operational decisions for greatest business performance.

The foundation of throughput accounting is the division of the production cost items into groups based on how they interact with the raw material, which is the only variable factor. The remaining components are combined into a single category termed operating expenses, which are short-term fixed costs and predetermined costs. The number of inputs required to produce the product unit, which is manufactured and subsequently sold, should not be greater than or less than a specific amount since, in the event of a shortage, the product is not finished. If the amount increases, it will be moved into warehouses, and the organization's costs will rise because of loss, damage, and retention (Bragg, 2022).

From the foregoing, the hypothesis for this study is derived from the schematic representation in fig.1 above where Throughput accounting is categorised into three variables, throughput, fixed cost, and operational expenses. Throughput (T) is cash inflow from sales over a unit period, minus variable costs tied to each sale. Fixed costs are represented by Investment (I), which is the value of cash yet to be converted to Throughput (e.g., inventory, finished goods, work in progress and equipment). Operational expenses (OE) on the other hand are represented by all costs divided by the period required to generate Throughput (T) e.g., labour, utilities, and rent.

The dependent variable, Economic Value Added (EVA) is categorised into five variables: Net profit, $NP = (T - OE)$; Productivity = (T/OE) ; Return on Investment, $ROI = (NP/I)$; Inventory Turnover, $IT = (T/I)$, and Cost of Capital, WACC.

Development of hypotheses

From the conceptual model, null hypotheses were developed to test the relationship between throughput accounting and economic value added of firms. The conceptual model is based principally on the already stated Goldrat’s theory of constraints and the net income theory by Durand.

Hypothesis 1: Throughput does not significantly relate with net profit of manufacturing companies in Nigeria.

Hypothesis 2: Throughput has no significant relationship with productivity of manufacturing companies in Nigeria.

Hypothesis 3: Throughput does not have any significant relationship with return on investment of manufacturing firms in Nigeria.

Hypothesis 4: Throughput has no significant relationship with inventory turnover of manufacturing firms in Nigeria.

Hypothesis 5: Investment as fixed cost does not significantly relate with cost of capital of Nigerian manufacturing companies.

Hypothesis 6: There is no significant joint relationship between Throughput accounting/Theory of constraint and combined value of Net profit, productivity, return on investment, Inventory turnover & Cost of capital, representing Economic value Added of manufacturing companies in Nigeria.

3. Methodology

The study used an ex post facto and correlational research design and a quantitative panel methodology. This study's co-relational topic called for a design that would assess the link between two variables, specifically the relationship between throughput accounting and economic value added in Nigerian manufacturing firms. The Nigerian Exchange Group (NGX) Fact Books and the companies' published financial statements for a seven-year period were utilised as the primary sources for secondary (panel) data analysis (2015-2021). Thus, "Throughput accounting" was used as an independent variable in this study while "Economic added value" served as the dependent variable.

The population of this study was the 83 manufacturing companies that were listed on the Nigerian Stock Exchange, as of December 2021. These companies are in the various sectors in the manufacturing industry. The Taro Yamane formula was used to arrive at the sample size of 69 manufacturing companies, and the researcher adopted the non-census sampling (probability sampling). The stratified random sampling technique was used so that the sample could be truly representative of all units or strata of the population. The strata include manufacture of consumer goods, construction, food and agricultural processing, manufacturing of healthcare and pharmaceutical products, industrial goods manufacturing, mining, oil and gas production and processing of beverages.

The sampling procedure used was the proportional stratified sampling. The percentage composition of the manufacturing companies listed in the NSE were 12 percent of agricultural and food processing sector, 20 percent of consumer goods sector, 33 percent of industrial goods sector, 10 percent of healthcare and

pharmaceutical, 5 percent of mining and construction sector, 10 percent of oil and gas production and 10 percent of food and beverages sector. This means that the researcher studied 69 manufacturing companies quoted in the Nigerian Stock Exchange, as sample size made up of 8 in agriculture and food processing, 14 in consumer goods, 23 in industrial goods, 7 in healthcare and pharmaceutical products, 3 in mining and construction, 7 in the oil and gas production, and 7 in the manufacture of beverages. The percentages were calculated thus: Number per sector divided by sample size \times 100. Data for this study were sourced from the Nigerian Stock exchange fact books as secondary data.

Model specification

A relationship was established among the variables, using an adopted model from Uwah (2019), following the general equation for regression,

$Y = f(X)$, indicating that Y depends on X,

Model: *Economic value added (EVA) = f (Throughput Accounting)*

i.e. EVA = f (TA).

Therefore, $EVA = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots \dots (1)$

Where: $i = 1, 2, 3, \dots \dots \dots 69$, and $t = 1, 2, 3, 4, 5, 6, 7$.

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \mu$$

Where, α is the intercept, and $\beta_1, \beta_2, \beta_3$, are the coefficients of variables X_1, X_2, X_3 , respectively, which show the kind of relationship existing between dependent and independent variables and μ is known as the error term. The control variable in this model is the firm's size (FS), which is shown as the natural logarithm of sales for the sampled manufacturing companies.

In this model, i represents the i^{th} cross-sectional unit and t represents the t^{th} time. The dependent variable is Economic Value Added (EVA), here hypothesized to depend on the natural logarithm of: Throughput (TPT); Investment (INV), Operation expenses (OEP), and Firm size (FS) as control variable. These are all proxies of Throughput accounting/Theory of constraints. The hypotheses are for each manufacturing firm, i on the sample over the t , 2015 – 2021 analysis period.

EVA as a dependable variable is indicated by Net profit (NPF), Productivity (PRD), Return on investment (ROI), Inventory turnover (ITO) and Cost of capital (COC). Vector variables for measuring Throughput accounting (TA) were represented by TPT, INV, and OEP were regressed against the vector variables for measuring Economic value added, represented by NPF, PRD, ROI, and ITO, for hypotheses 1 to 4. Other

vector variables of TA were INV and OEP which were used to regress against ROI and COC as vectors of EVA, for hypothesis 5 and NPF, PRD and ROI respectively for hypothesis 6. The measurement is shown as follows:

$$\text{Hypothesis 1: NPF} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (2)$$

$$\text{Hypothesis 2: PRD} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (3)$$

$$\text{Hypothesis 3: ROI} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (4)$$

$$\text{Hypothesis 4: ITO} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (5)$$

$$\text{Hypothesis 5: COC} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (6)$$

$$\text{Hypothesis 6: NPF} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (7)$$

$$\text{PRD} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (8)$$

$$\text{ROI} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (9)$$

$$\text{ITO} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (10)$$

$$\text{COC} = a_0 + \beta_1 \text{LogTPT}_{it} + \beta_2 \text{LogINV}_{it} + \beta_3 \text{LogOEP}_{it} + FS_{it} + \mu_{it} \dots \dots (11)$$

Testing of Hypotheses and Analysis

Hypotheses one to six were tested using SPSS. Proxies of Economic value added as the dependent variable were used against the proxies of Throughput accounting and the theory of constraints, as representatives of the independent variable. A confidence interval of 95% was taken and the decision rule was to reject the null hypothesis if the calculated value, p, is less than the alpha value of 0.05 ($p < 0.05$) and to accept, if otherwise.

Table 1. Calculation methodology for analysed variables

S/N	Variables	Description
1	Throughput accounting/ theory of constraints	Vector variable represented by natural logarithm of TPT, INV, and OEP.
2	EVA	Natural log of data collected and calculated as (Net investment) × (Actual ROI - Cost of capital). Cost of capital = WACC. Cost of equity = $d/mve \times 100$. Cost of debt = $F(1-t)/mvd \times 100$.
3	TPT	Data on cash from sales/period collected from NSE fact books (The Natural log).
4	INV	Natural log of data collected and calculated as: Cash value of capital expenditure not yet converted to throughput (Inventory and equipment)
5	OEP	Natural log of all costs value from financial statements ÷ period required to generate throughput (labour & utilities)
6	NPF	Natural log of TPT - OEP

7	PRD	Natural log of data collected and calculated as TPT/OEP
8	ROI	Natural log of Accounts NP/INV
9	ITO	Natural log of data collected from the NSE. TPT/INV
10	COC	Natural log of Cost of capital = WACC. Cost of equity = $d/mve \times 100$. Cost of debt = $F(1-t)/mvd \times 100$.
11	FS	Firm size is taken as Natural log of sales value collected from NSE.

Source: Researcher's compilation.

4. Results and Discussion

This section shows the tables and the findings from the study with the associated results.

Table 2. Showing multiple regression of the relationship between throughput and net profit of quoted manufacturing companies in Nigeria.

Model	R	R ²	Adjusted R ²	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Result
				B	Standard Error	Beta			
TPT	0.852	0.053	0.0572	0.864	0.357	0.852	2.595	0.007	Significant (Reject H0)
ANOVA									
Model		Sum of Squares	df	Mean Square	F	Sig.			
TPT	Regression	1703.344	1	1703	6.215	0.007			
	Residual	15476.366	67	346.2					
	Total	17179.710	68						
Dependent variable: Net profit (NPF)									
Source: Field work Results									

Hypothesis one

Through-put does not significantly relate with Net profit of manufacturing companies in Nigeria.

The data in table 2 dealt with the data showing the extent to which throughput (TPA) relate with the net profit of 69 sampled companies for the period 2015 to 2021, used in the study. Table 2 shows a Beta value of 0.852 for throughput by Nigerian firms and its corresponding dependent variable, net profit. The analysis shows that about 85% of throughput contribute to the economic value added of firms in Nigeria, through the net profit approach. The two variables show significant values at 0.007 Sig. level. The table revealed that a value of 0.007 is the p-value. As this value is lower than the alpha value of 0.05, our Hypothesis one was rejected, following our decision rule. This decision therefore means that there is a significant relationship between throughput accounting by manufacturing firms in Nigeria with the net profit of these firms,

representing the economic value added. This is reflected in the 0.007 Sig. value realized in the ANOVA of throughput accounting and theory of constraints as it relates to the economic value added of those firms.

Table 3. Showing simple regression analysis and its associated ANOVA of the relationship between throughput and productivity of quoted manufacturing companies in Nigeria.

Model	R	R ²	Adjusted R ²	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Result
				B	Standard Error	Beta			
TPT	0.087	0.008	-0.007	0.023	0.032	0.087	0.717	0.476	Insignificant (Accept H ₀)
ANOVA									
Model		Sum of Squares	df	Mean Square	F	Sig.			
TPT	Regression	1.721	1	1.721	0.514	0.476			
	Residual	224.198	67	3.346					
	Total	225.919	68						

Dependent variable: Productivity (PRD)

Source: Field work results

Hypothesis two

Through-put has no significant relationship with Productivity of manufacturing companies in Nigeria.

The analysis shown in table 3 is on the relationship between Throughput and productivity, a proxy of the Economic value added of manufacturing firms in Nigeria. From the Table, both R² and the adjusted R² values which measure the proportion of the variation in the dependent variable (PRD) are shown. The adjusted R² shows the modification for the limitation of R² and it is considered as a measure of the model's fitness. As shown in the table, the value of adjusted R² is -0.007, which indicates that the independent variable (TPT) explains less than 1% variation on the dependent variable. The multiple correlation coefficient (R) shows a value of 0.087, an insignificant 8% relationship between TPT and PRD. The R² value of 0.008 was realized, which shows a very insignificant relationship between the two variables. The table also reveals a p-value of 0.476 which is greater than the alpha value of 0.05. Therefore, hypothesis two was accepted which means that there is no significant relationship between Throughput (TPT) and Productivity (PRD), both proxies of Throughput accounting/Theory of constraints and Economic value added (EVA) respectively.

Table 4. Showing multiple regression of the relationship between throughput and return on investment of quoted manufacturing companies in Nigeria.

Model	R	R ²	Adjusted R ²	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Result
				B	Standard Error	Beta			
TPT	0.281	0.079	0.065	0.894	0.373	0.281	2.395	0.019	Significant (Reject H0)
ANOVA									
Model		Sum of Squares	df	Mean Square	F	Sig.			
TPT	Regression	1401.685	1	1402	5.734	0.019			
	Residual	16377.376	67	244.4					
	Total	17779.061	68						
Dependent variable: Return on Investment (ROI)									
Source: Field work Results									

Hypothesis three

Throughput does not have any significant relationship with Return on Investment of manufacturing companies in Nigeria.

Data presented on Table 4 above reveal the relationship between Throughput and Return on Investment (ROI) of manufacturing firms in Nigeria. From the Table, TPT has a Beta value of 0.281, indicating an approximate contribution of 28% to ROI in the manufacturing firms under study. This result shows a positive correlation coefficient and a relatively average relationship. A p-value of 0.019 realized also shows that the value is less than the 0.05 alpha level, which makes us to reject the null hypothesis three. This indicates that there is a significant relationship between TPT and ROI in the companies under study. The unstandardized B value of 0.894 also explains that for any additional increase in the unit of Throughput, there is an increase of about 89% in the value of Return on Investment. The associated analysis of variance (ANOVA) reveals that the sum of squares for regression which is same as mean of square was 1401.685 and 16377.376 was the residual value for TPT. The mean squares value for TPT, in relation with ROI however shows 244.438. All these show a strong relationship, which supports the rejection of the hypothesis.

Table 5. Showing multiple regression of the relationship between throughput and inventory turnover of quoted manufacturing companies in Nigeria.

Model	R	R ²	Adjusted R ²	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Result
				B	Standard Error	Beta			
TPT	0.925	0.856	0.854	0.502	0.025	0.925	19.945	0	Significant (Reject H0)
ANOVA									
Model		Sum of Squares	df	Mean Square	F	Sig.			
TPT	Regression	3910.149	1	3910	397.783	0			
	Residual	658.6	67	9.83					
	Total	4568.749	68						
Dependent variable: Inventory turnover									
Source: Field work Results									

Hypothesis four

Throughput has no significant relationship with inventory turnover of manufacturing firms in Nigeria.

As could be seen from Table 5, the relationship between Throughput and Inventory turnover is shown. The Table's analysis shows a Beta value of 0.925 which is about 93% of the total contribution of throughput to the economic value added of the firm. A multiple correlation coefficient (R) of 0.925 which also indicates a high correlation was observed to correspond with this beta value. The R² value of 0.856 which shows a relationship of about 86% between the independent and dependent variables was also observed. However, the value of the adjusted R² which is the modification for the limitation of R² was 0.854. This indicates that the independent variable in the model explains about 85% variation on the dependent variable. The unstandardized B value of 0.502 shows that as throughput increases or decreases by one unit in value, there is a corresponding 0.502 unit in the economic value received which increases or decreases in the sampled manufacturing firms. More so, the associated analysis of variance (ANOVA) reveals the sum of squares for regression and residual to be 3910.149 and 658.600 respectively, while the mean squares values are also shown as 3910.149 and 9.830 respectively, which indicates a significant relationship between the variables. Finally, the Sig. value reveals 0.000, which is less than the alpha value of 0.05 level and as such, the null hypothesis four was rejected, meaning that a significant relationship exists between throughput and inventory turnover, a proxy of the economic value added of the firm.

Table 6. Showing multiple regression of the relationship between Investment and Cost of capital of quoted manufacturing companies in Nigeria.

Model	R	R ²	Adjusted R ²	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Result
				B	Standard Error	Beta			
INV	0.034	0.001	-0.014	0.057	0.205	0.034	0.279	0.781	Insignificant (Accept H ₀)
ANOVA									
Model		Sum of Squares	df	Mean Square	F	Sig.			
INV	Regression	0.701	1	0.701	0.078	0.781			
	Residual	603.841	67	9.013					
	Total	604.542	68						
Dependent variable: Cost of capital									
Source: Field work Results									

Hypothesis five

Investment as fixed cost does not significantly relate with cost of capital of Nigerian manufacturing companies.

Table 6 shows what relationship exists between Investment (INV) and Cost of capital (COC) as proxies of Throughput accounting/Theory of constraint and Economic value added respectively. The data show R² and the adjusted R² values to be 0.001 and -.014 respectively. The value of 0.034 was also seen as the multiple correlation coefficient (R), showing a meagre 3% of the relationship with the variables. The total sum of squares of 604.542 as a result of regression and residual values of .701 and 603.841 respectively was also revealed. It is indicative that when the sum of squares values is higher, the relationship becomes significant, but if the values are lower, there is an insignificant relationship. The table also shows a lower mean square of 0.701 which, in regression depicts an insignificant relationship. A Sig. value of 0.781 which is higher than the alpha level of 0.05 was observed. Therefore, using our decision rule, null Hypothesis five is accepted. This goes to show that Investment has no significant relationship with Cost of capital. This is at variance with the research result by Gilchrist and Zakrajsek (2007) which showed that a 1 percent point increase in the user cost of capital implies a reduction in the investment rate in the selected companies.

Table 7. Analysis of variance associated with multiple regressions on the joint relationship between variables of Throughput/Theory of Constraints and variables of Economic value added of quoted manufacturing companies in Nigeria.

Model	R	R ²	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Result
			B	Standard Error	Beta			
Constant	0.086	0.65	-15.499	6.493		-2.387	0.02	Significant
TA			0.540	0.074	0.568	7.291	0.000	Significant
Firm size			0.742	0.143	0.405	5.205	0.000	Significant
ANOVA								
Model	Sum of Squares	df	Mean Square	F	Sig.			
Regression	14686.606	2	7343.303	61.344	0.000			
Residual	7900.717	66	119.708					
Total	22587.323	68						

Source: Field work Results

Hypothesis six

There is no significant joint relationship between Throughput accounting/Theory of constraint and combined value of Net profit, Productivity, return on investment, Inventory turnover & Cost of capital, representing Economic value Added of manufacturing companies in Nigeria.

The data in table 7 shows the extent to which throughput accounting (TA) relate with the economic value added (EVA) of 69 sampled companies for the period 2015 to 2021, used in the study. The multiple regression analysis in Table 7 shows the SPSS result of what the relationship looks like when the control variable, firm size, was introduced. The multiple regression analysis shows a Beta value of 0.568 for throughput accounting by Nigerian firms and its corresponding dependent variable, economic value added of firms. A Beta value of 0.405 was revealed for firm size as control variable showing its relationship with economic value added of firms in Nigeria. These data inform us that about 57% of throughput accounting decisions contribute to the economic value added of firms in Nigeria, while about 40% of firm size contributes to the economic value added of firms. The variables, one independent and the other control, show significant values at 0.000 Sig. level. A multiple correlation between the dependent variable, economic value added of the firm (EVA) with

the independent variable, throughput accounting (TA), and the control variable, firm size (FS) was also made. A multiple regression correlation coefficient (R) of 0.806 was seen. This indicates a high correlation of about 80%. The R square (R^2) value of 0.650 was also realized. This implies that while about 80% of multiple correlations (R) were established between the independent and dependent variables, about 65% was realized as the contribution of the independent variable to the economic value added of firms in Nigeria with the firm size as a control variable factored in. The p-value here showed a value of 0.000. As this value is lower than the alpha value of 0.05, our Hypothesis one was rejected, following our decision rule. This decision therefore means that there is a significant relationship between throughput accounting decisions made by manufacturing firms in Nigeria with the economic value added of these firms. Even though there is heterogeneity in the size of firms in the manufacturing industry, this result also shows that the sizes of firms do not affect this significant relationship. This is reflected in the 0.000 Sig. value realized in the multiple regression analysis of throughput accounting and firms' size as it relates to the economic value added of those firms.

5. Conclusion and Recommendations

Conclusively, the study showed that throughput accounting and theory of constraints have a significant relationship with the economic value added of the manufacturing firms in Nigeria. Though there were insignificant relationships between some sub-variables used in the study, it did not affect the overall result which showed a significant relationship between the independent and the dependent variables. This result was revealed when there was a joint regression of all the sub-variables of throughput accounting with the all the proxies of economic value added in the perspective of the theory of constraint.

The following recommendations were therefore made from the study.

1. Management of manufacturing companies should see profit as a function of material cost, total factory cost and throughput. This is a paradigm shift from the provisions of the Generally accepted accounting principles that profitability can only be measured by price to earnings ratio.
2. Productivity should be seen as a measure of throughput and operating expenses by management. Though it is normally computed by dividing average output per period by the total costs incurred or resources consumed in a period, with throughput accounting it is a major determinant of cost efficiency when the bottlenecks are properly managed.

3. It is recommended that management of manufacturing companies in Nigeria should use throughput techniques to reduce costs which would increase their profitability, while still ensuring that its long-term return on investment is higher than its cost of capital.
4. Management of manufacturing companies should take a paradigm shift by not recognizing inventory as an asset but take it as the product of uncompleted manufacturing which stands between the company and profit.

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REAL EARNINGS MANAGEMENT AND FIRM VALUE: EVIDENCE FROM NIGERIA

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Abstract

The study assesses how Real Earnings Management (REM) affects a firm's value. Specifically, the study focuses on non-financial firms listed in Nigeria as of December 31, 2020. Tobin's Q was used as a proxy for firm value while abnormal operating cash flow, abnormal production costs, and abnormal discretionary expenses was employed for REM. Seventy-six (76) companies with the necessary data needed for the study were chosen using a purposive sampling technique, for the period 2010–2020. The results show that abnormal discretionary expenses had a positive and significant influence on firm value, while abnormal operating cash flow and abnormal production costs had no significant effect. Also, it was discovered that return on equity and firm growth have no significant impact on the firm's value. However, leverage and firm size have a positive influence on firm value. The study concludes that abnormal discretionary expenses significantly affect the firm value of Nigeria's listed non-financial companies. Thus, the study recommends that managers make efficient use of discretionary expenses to smooth out fluctuations in earnings and present more consistent profits to boost firm value.

Keywords: firm value, real earnings management, non-financial listed firms, Nigeria

1. Introduction

One of the crucial elements for businesses, especially publicly traded ones, is firm value. The firm value can be used by the market to assess the success of the company. The business is therefore highly motivated to raise its company value. One metric to evaluate a company's success is firm value. The firm's stock price affects the value of firms. Thus, the company's valuation can be used to determine the shareholders' wealth. A high business valuation indicates greater shareholder prosperity. Stock prices can be used as a yardstick to measure firm value because they are believed to represent the value of the company (Mahendra *et al.*, 2012; Darmawan *et al.*, 2019). For businesses to draw in investors, the firm's worth must remain high. If a company's value declines, it indicates that investor confidence in the company is also declining, which poses a threat to the company's ability to survive. Earnings generated by companies have an impact on how the firms makes decisions (Al-Absy *et al.*, 2020). More so, analysts and investors utilize these figures to assess a company's investment potential and profitability. Since they want to show that the business is successful, management will therefore try to publish earnings that are high. To generate a significant amount of revenue to raise the firm's value in the face of intense competition, a company must make numerous efforts to improve

the quality of their product as well as providing smooth channel for getting feedback from customers. Regardless of how earnings are acquired, financial statements are solely used to report earnings information. The substantial amount of earnings demonstrates the company's efforts to raise firm worth. According to Ernayani and Robiyanto (2016), Purwanti and Natser (2016) as well as Shittu *et al.* (2022), companies use earnings management to boost or display high levels of earnings. Investors who prefer to see growth and stability may be concerned by the shifts even though significant swings in income and expenditures may be a regular component of a company's operations (Suryani & Putri, 2019).

Accrual or Real Earnings Management (REM) are both earnings management techniques for managing earnings by managers. While REM includes deviating from standard operating procedures to manipulate earnings numbers, it has a direct impact on both present and future corporate cash flows. Accrual earnings management involves changing estimates and accounting principles to boost or decrease earnings (Zang, 2012). According to Onaolapo and Shittu (2022), managers choose REM instead accrual earnings management because it makes it easier to achieve the desired profit goal and is more difficult to spot by auditors or regulators. The shortcoming of REM is that the company's future cash flow will have a bigger impact on company's decision than other earnings management techniques. Because it puts the firm's survival in jeopardy, stakeholders must genuinely anticipate this deception. Shittu and Amao (2022) disclose that managers tend to utilize both earnings manipulation approaches to meet their intended profit objective and choose both with distinct factors in mind. Roychowdhury (2006) asserts that there are three ways to manage earnings in favour of managers: through overproduction in the production process, manipulation of sales, and reduction of discretionary spending. There have been previous studies on how earnings management affects corporate value. However, earlier research had different findings and had mostly concentrated on accrual-based earnings management (Ridawan & Hunardi, 2013; Indriani *et al.*, 2014; Abbas *et al.*, 2017). More so, few studies worked on REM both in developed and developing countries were conducted outside Nigeria context (Ferdawati, 2009). In addition, none of these studies assessed the influence of REM on firm value by proxying REM in three ways as considered in this study. As a result, this study filled a research gap by examining the effect of REM proxied by abnormal operating cash flow, abnormal production costs, and abnormal discretionary expenses on firm value of selected listed non-financial firms in Nigeria separately. More so, the study considered leverage, Firm Growth (FG), Firm Size (FS) and Return on Equity (ROE) as control variables in line with (Elikala, 2017; Rahamon & Xiong, 2021).

2. Literature Review and Hypothesis Development



2.1 Real Earnings Management and Firm Value

Financial statements are said to be of high quality if users of financial statement can use earnings reported by to deduce company value and make better judgments as well as forecast future cash flows of firm (Bernard & Stober, 1998). Earnings management will be linked to lower business valuations if investors experience information risk due to uncertain accounting earnings. The financial statement offers crucial data that can be used to forecast future profits. Investors assesses the stock market's worth of companies through earnings reported by firms (Cohen *et al.*, 2011). The basic assumption is that management will use earnings management to change the outcome of the accounting system and enhance signal and performance moving forward (Mulyasari *et al.*, 2016; Suryani & Putri, 2019). In a similar vein, Ewert and Wagenhofer (2004) and Gunny (2005) demonstrate how managers convert to real activity manipulation even though doing so has drawbacks (greater costs for businesses) and subsequently lowers company value. Similarly, (Zang, 2006; Cohen & Zarowin, 2008) confirmed that managers move to real activity manipulation if using accrual earnings management is more challenging for them. Previous researchers that have worked on REM and firm value observed different results; for instance, positive and significant influence of REM was revealed on firm value in a study conducted by Fernawati (2009) in Indonesia as well as Abass and Ayub (2019) among non-financial listed firms in Pakistan. However, negative influence of REM was revealed on firm value in a separate study carried out by Challen and Siregar (2012) as well as Darmarwan *et al.* (2019) among manufacturing firms in Indonesia. This result is aligned with the claim made by Rowchowdhury (2006) that REM can lower firm value because it can boost earnings for short time while it will reflect negative influence on the firm's future cash flows. There is a need to empirically analyze the influence of REM on firm value in developing nations such as Nigeria, where we have an unstable economy. Hence, the study formulated hypothesis as follows:

H₀: Real earnings management has no significant influence on firm value of non-financial listed firms in Nigeria.

2.2 Theoretical Review

The study anchored based on stewardship theory developed by Donaldson and Davis (1989), which is based on the collective behavior of stewards who prioritize achieving corporate goals like profitability, over pursuing personal objectives. Stewardship theory encourages managers to improve a firm's value by motivating them, which results in an exemplary way of reporting earnings when the adopted principles of the firm are aligned with the firm's value. This behavior benefits the principal and has a good impact on financial objectives

including profitability, share price and dividend. The interests of managers and the owners of the company are thought to be aligned. Therefore, optimal firm value should effectively coordinate inside the firm, in accordance with stewardship theory. According to the stewardship hypothesis, both managers and directors should be good stewards of the company to increase shareholder wealth. According to the sociological and psychological perspective known as stewardship theory, corporate leaders behave in the way that will add value to the system as well as in the interests of the shareholders (Albrecht *et al.*, 2004). According to Davis *et al.* (1997), attaining corporate goals rather than personal ones leads to greater steward satisfaction. The study further stated that meeting organizational objectives can also satisfy stewards' personal desires. As a result, the stewardship theory views non-financial motives as being crucial and highly motivating for managers. This study was based on stewardship theory because its motives include the need for achievement and recognition, respect for authority and the work ethic, and the intrinsic satisfaction required for successful job performance as well as improving value of the firms, among others.

3. Methodology

The study employed *ex-post facto* research design. As of the end of 2020, 113 Non-Financial Listed Companies (NFLC) on the Nigerian Stock Exchange made up the study's population. Seventy-six (76) NFLC having the necessary data for the study were purposefully chosen for the eleven-year period from 2010 to 2020 which cover pre, during and post COVID 19 period. More so, eleven years was chosen due to the fact most of previous studies reviewed particularly in Nigeria were less than ten years. Generalized Method of Moments (GMM) estimator was employed to analyze collected data.

Model Specifications

Models used in this study were adapted from the work of Elkalla (2017), who employed Rowchowdhury's (2006) model to measure REM are in three different forms as shown below:

$$\text{Operating cash flow: REM1} = \frac{CFO_t}{A_{t-1}} = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{S_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \varepsilon_t \dots \dots \dots \text{eqn (1)}$$

$$\text{Production costs: REM2: } \frac{PROD_t}{A_{t-1}} = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{S_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \alpha_4 \left(\frac{\Delta S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \text{eqn(2)}$$

$$\text{Discretionary expenses REM3: } \frac{DISX_t}{A_{t-1}} = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{\Delta S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \dots \dots \dots \text{eqn (3)}$$

Thus, study models go as follows;

$$FVAL = \beta_0 + \beta_1 \text{REM1it} + \beta_2 \text{FGit} + \beta_3 \text{LEVit} + \beta_4 \text{ROEit} + \beta_5 \text{FZit} + U \dots \dots \dots \text{eqn (4)}$$

$$FVAL = \beta_0 + \beta_1 \text{REM2it} + \beta_2 \text{FGit} + \beta_3 \text{LEVit} + \beta_4 \text{ROEit} + \beta_5 \text{FZit} + U \dots \dots \dots \text{eqn (5)}$$

$$FVAL = \beta_0 + \beta_1 REM3it + \beta_2 FGit + \beta_3 LEVit + \beta_4 ROEit + \beta_5 FZit + U \dots \dots \dots \text{eqn (6)}$$

Where, $At-1$ = Total assets of firm i in year $t-1$; St = Total sales of firm i in year t ; ΔSt = Change in Total sales of firm i in year t ; $FVAL$ =Firm Value; $REM1$ = represent Abnormal Operating Cash Flow (AOCF) ; $REM2$ = represent Abnormal Production Costs (APCO); $REM3$ = represent Abnormal Discretionary Expenses (ADIXE); FG = Firm Growth; LEV = Leverage; ROE = Return on Equity; FZ =Firm Size.

Table 1. Measurement of Variables

S/N	Variable	Acronym	Type	Measurement and Sources
1	Firm Value	FVAL	Dependent	Measured by Tobin's Q using Equity Market Value (EMV) + book value of total debt % Equity Book Value (EBV) + book value of total debt (Darmawan <i>et al.</i> , 2019).
2	Abnormal Operating Cash flow	REM1	Independent	As shown in eqn. (1), Elkalla (2017)
3	Abnormal Production Costs	REM2		As shown in eqn. (2), Elkalla (2017)
4	Abnormal Discretionary Expenses	REM3		As shown in eqn. (3), Elkalla (2017)
5	Firm Growth	FG	Control	Natural log of revenue of a firm, Nanik and Nur (2019)
6	Leverage	LEV		Ratio of debt to Total Asset (TA) (Ahmed <i>et al.</i> , 2021).
7	Return on Equity	ROE		Earnings % Capital employed, (Challen & Siregar, 2012).
8	Firm Size	FZ		Natural log of total asset of firm (Rahman & Xiong, 2021)

Source: Authors' Compilation, 2023

4. Results of the Analysis

4.1 Descriptive Statistics

Table 2 shows descriptive statistics of study variables. Firm value, $REM1$, $REM2$, FG , LEV , ROE , FZ have positive mean values of (43.09, 0.037, 0.053, 3.11, 29.68, 18.647 and 4.917) respectively. This implies that there is an improvement in firm value of selected manufacturing firms in Nigeria. However, $REM3$ has negative mean value of (-0.202). More so, all the variables have positive standard deviation of 24.18, 0.20, 0.33, 0.21, 7.37, 17.69, 15.42 and 5.06 for firm value, $REM1$, $REM2$, $REM3$, FG , LEV , ROE , FZ respectively.

Table 2. Descriptive Statistics

Variables	Obs.	Min.	Max.	Mean	Std. Dev.
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FVAL	836	.079	98.823	43.090	24.178
REM1	836	-1.795	2.031	.0368	.2006
REM2	836	-4.696	3.089	.0535	.3329
REM3	836	-1.084	4.218	-.203	.213
FG	836	.0001	45.345	3.112	7.375
LEV	836	.535	94.225	29.68	17.696
ROE	836	.0189	77.105	18.647	15.425
FZ	836	.0007	51.724	4.917	5.056
Number of Samples	76	76	76	76	76

Note: Obs: Observation, Min: Minimum, Max: Maximum, Std. Dev. Standard Deviation

Source: Authors' Compilation, 2023

Note: FVAL=Firm Value; REM1= AOCF; REM2= APCO; REM3= ADIXE; FG= Firm Growth; LEV= Leverage; ROE= Return on Equity; FZ=Firm Size.

4.2 Correlation Matrix

Table 3 shows relationships between the model study variables and test for multicollinearity using Variance Inflation Factor (VIF). All the study variables showed low correlation between each other as they less than 0.5. Furthermore, the highest VIF value computed for REM1 was 1.26, which is below the threshold of 5, demonstrating that multicollinearity is not a major issue for the study model variables.

Table 3. Correlation Matrix

	FVAL	REM1	REM2	REM3	FG	LEV	ROE	FZ	VIF
FVAL	1								1.04
REM1	0.036	1							1.16
REM2	-0.125	-0.064	1						1.24
REM3	0.064	0.414	0.059	1					1.10
FG	-0.061	-0.058	0.119	-0.153	1				1.09
LEV	-0.394	-0.075	0.005	-0.002	0.181	1			1.06
ROE	0.089	0.037	0.074	-0.009	-0.138	-0.139	1		1.04
FZ	-0.162	-0.052	0.059	-0.005	-0.024	0.108	-0.013	1	1.02

Source: Authors' Compilation, 2023

Note: FVAL=Firm Value; REM1= AOCF; REM2= APCO; REM3= ADIXE; FG= Firm Growth; LEV= Leverage; ROE= Return on Equity; FZ=Firm Size.

4.3 Effect of Real Earnings Management (REM) on Firm Value

Table 4 shows the results of GMM estimator on the effect of REM on Firm Value (FV). REM1 and REM2 ($\beta=-1.60$; -0.85 ; $P>|t|=0.109$; $0.396 > 0.05$) reveals negative and insignificant effect on FV respectively. However, REM3 ($\beta=2.57$; $P>|t|=0.010 < 0.05$) showed positive and significant effect on FV. With regards to control variables, FG, and ROE ($\beta=0.58$; 0.49 ; $p>|t|=0.564$; $0.625 > 0.05$) shows positive influence on FV but insignificant. However, LEV ($\beta=-4.99$; $P>|t|=0.000 < 0.05$) reveals negative and significant influence while

FZ ($\beta=1.98$; $P>|t|= 0.048 < 0.05$) shows positive and significant effect on FV. With regards to Diagnostic tests, Wald chi2 statistics of (684.31 $p=0.000$) and Sargan test statistics (51.53; $p=0.2030$) confirmed that the study model has a good fit. The Arellano-Bond test for second order autocorrelation AR (2) is (-1.1597, $p=0.246$). Hence, the test's null hypothesis, which says that there is no autocorrelation is correct. Thus, the findings valid for policy inference with diagnostic statistics of AR (2).

Table 4. Effect of Real Earnings Management (REM) on Firm Value

Variables	FVAL Model
FVAL $t-1$	21.56** [0.000]
REM1	-1.60 [0.109]
REM2	-0.85 [0.396]
REM3	2.57** [0.010]
FG	0.58 [0.564]
LEV	-4.99** [0.000]
ROE	0.49 [0.625]
FZ	1.98** [0.048]
Constant	11.94** [0.000]
Wald Chi2 Statistic	684.31 [0.000]
Sargan Test	51.5285 [0.2030]
1st Order Auto Correlation Test	-4.2138 [0.000]
2nd Order Auto Correlation Test	-1.1597 [0.246]

Source: Authors' Compilation, 2023

Note: FVAL=Firm Value; REM1= AOCF; REM2= APCO; REM3= ADIXE; FG= Firm Growth; LEV= Leverage; ROE= Return on Equity; FZ=Firm Size.

bracket [] are p-values, ** means statistical significance at 5% level

4.4 Discussion of Findings

REM1 and REM2 which were measured by abnormal cash flow from operation and abnormal production cost respectively with coefficient greater than 0.05 suggests that real earnings management using both sales manipulation and excessive production does not have impact on firm value. The positive effect of REM3 measured by abnormal discretionary expenses on Firm Value (FV) implies that managers of selected firms were using discretionary expenses efficiently not opportunistically meaning that they did not partake in real

earnings management for their own personal benefit. This finding is not aligned with Rowchowdhury's (2006) assertion that real earnings management can lower firm value to improve current-period earnings but negatively affects the firm's future cash flow. However, it agrees with the research findings of Ferdewati (2009). With regards to control variables, positive effect of leverage on FV indicates that selected firms are making use of their capital structure through debt to improve their firm value. The results is line with (Aggrawal & Padhan, 2017; Nekhili *et al.*, 2017). More so, firm size found to have positive influence submits that bigger firms tend to be more have value than small firms. This corroborates with the work of (Prastyorini, 2013; Darmarwan *et al.* 2019) while differ from Shittu and Amao (2022).

5. Conclusion and Recommendations

This study concluded that abnormal cash flow from operation and abnormal production cost have no significant effect on FV. However, abnormal discretionary cost has positive and significant influence on FV. More so, leverage and firm size have a positive impact while ROE and FG were having no significant effect on the FV. Hence, the study recommends that managers make efficient use of discretionary expenses to smooth out fluctuations in earnings and present more consistent profits to boost firm value.

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GREEN ACCOUNTING PRACTICES, FIRM SIZE AND BUSINESS SUSTAINABILITY OF LISTED FIRMS IN NIGERIA

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Abstract

High profile corporate failures have necessitated examining the sustainability of businesses. Studies have shown that reporting practices de-emphasizes the safety, waste management, environmental protection, pollution prevention and green restoration practice of organizations with their environment which to a large extent influence their sustainability. Studies exist on the effect of Green Accounting Practices (GAP) on short term financial performance but with little attention to business sustainability. Hence, this study examined the effect of GAP on business sustainability (Leverage (LEV)) of listed manufacturing firms in Nigeria. Ex-post-facto research design was adopted for this study with population of 56 manufacturing companies listed in Nigeria. Purposive sampling technique was adopted to select a sample size of 37 based on the criterion that they have consistently published green reports within the period of 11 years (2010–2020). Data were analyzed using descriptive and inferential statistics. Findings revealed that GAP exerted significant effect on LEV ($Adj.R^2 = 0.028$, $F(5, 401) = 11.450$, $p < 0.05$) of listed manufacturing firms in Nigeria and firm size significantly moderated this effect ($Adj.R^2 = 0.061$, $F(6, 401) = 12.940$, $p < 0.05$). The study concluded that GAP affected business sustainability of listed manufacturing firms in Nigeria and firm size moderated this effect. It was recommended that firms should adopt global best practices in accounting for green activities as they have a long-term effect on business sustainability.

Keywords: Business sustainability, Firm size, Green accounting practices, Green restoration practices, Waste management practices

1.0 Introduction

In contemporary times, an organization is sustainable in the long term when it not only maximizes the value of the firm for the benefit of shareholders but maximizes the value of the firm for all stakeholders. According to Nireshi and Silva (2018), an organization is kept viable and sustainable in the long run when the value of all stakeholders is maximized. KPMG (1999), in its survey on corporate social responsibility reporting (then sustainability reporting), discovered that at the time, only about 35% of world's largest companies reported on sustainability. By 2011, this had increased to 95% (KPMG, 2011). Unlike before, when green accounting practice was done by some specific industries like oil and gas, mining, banking etc., green accounting has now been practiced by virtually all industries at varying levels.

Green sensitivity, or an individual's capacity to receive and absorb information about their environment, is becoming more and more of a focus of the movement for sustainable development practices (the capacity to anticipate the future from events in the present) (Ezeagba, John-Akamelu & Umeoduagu, 2017). Since the



immediate environment has an impact on business operations, environmental information at the corporate level must be collected in a way that allows the impact on those operations to be assessed (Oraka & Egbunike, 2016). There is a chance that environmental influences will occasionally have a detrimental impact on an organization. Due to this understanding, businesses now recognize their obligations to the community and the environment in which they operate (Adediran & Alade, 2013). Even though accounting practice has had an impact on various disclosures, Adegbie, Ogidan, Siyanbola, and Adebayo (2020) claim that investors' decisions have not been influenced by qualitative or quantitative environmental factors because environmental accounting practices have not been implemented in business. Instead, companies now freely engage in social and environmental disclosure policies. According to Elkington (2004), green accounting procedures entail integrating and accounting for an organization's economic, social, and environmental disclosure or performance initiatives and including them in the corporate report. More recently, focus has also been on the commitment of the management to stable and sustainable practices and the extent of the responsibility of the management towards their environment at all levels (Aggarwal, 2013).

According to Johari and Komathy (2019), some of the most important justifications for using green accounting techniques include measuring a firm's performance, enhancing financial outcomes, and informing stakeholders of the company's continued viability. Several initiatives have been put in place to support the practice of accounting in order to ensure business sustainability such as the introduction of sustainability reports and, more recently, the Global Reporting Initiative (GRI, 2019), which is widely used and is the most acceptable measure of sustainability. The improvement in organizations' commitment to maintaining consistency in the disclosure of economic, social, and environmental problems, despite limitations, is at the heart of the GRI's introduction (Willis, Campagnoni & Gee, 2015). Green practices have been the subject of numerous research, and the G4 has been used to measure these practices.

According to Uwaloma et al. (2018), no business organization exists alone without a rapport with its immediate environment. Environmental happenings in recent times, such as global warming has proved that the day-to-day activities of business organizations can have an adverse effect on the environment and therefore, the need for sustainable objectives far beyond the mere maximization of shareholder's wealth. These recent happenings are pointers to the fact that all over the world, the relevance of the inclusion of sustainable reports in the practice of green accounting cannot be overemphasized in corporate strategy to have a competitive advantage (Nnamani, Onyekwelu & Ugwu, 2017). As no business organization can exist without its environment, emissions, waste, unfair treatment of employees etc. must be eliminated to the barest minimum for survival. Disclosure on waste management, safety related practices, green restoration,

environmental protection, and pollution prevention practices (GRI, 2021) is therefore vital to the sustainability of manufacturing firms.

Some studies on green accounting practices and the effect it has on several proxies of performance have been conducted globally in the past. However, findings show a lack of consistent evidence. Results of previous studies are mostly inconsistent as some authors have reported negative, positive or no relationship between green accounting practices and proxies of performance, so there are no clear motivations for firms to appreciate environmental reporting. For example, Ezeagba, John-Akamelu, and Umeoduagu (2017), Yahya (2018), Sanusi and Sanusi (2019), Menike (2020), Olowokere, Adeniran and Onifade (2021) and Al-Naser, Riyadh and Albalaki (2021) reported a positive and significant effect, Nor, Bahari, Adnan, Kamal and Ali (2016), Nobanee and Ellili (2018) and Akor and Okey (2021) showed no significant effect and Omodero and Ihendinihu, (2016) reported a negative impact. These mixed findings show that there is no uniform conclusion on the subject matter, which serves as a basis for this study to be undertaken.

Furthermore, Baregheh, Rowley and Hemsworth (2016) opined that there are some features in every organization that determines business sustainability and performance and one of such is firm size. In the case of large organizations like manufacturing firms that are usually subjected to scrutiny by stakeholders, it is important to consider how firm size moderates the effect of green accounting practices on business sustainability of quoted manufacturing firms and in this case, examining firm size from the standpoint of logarithm of total asset.

Therefore, the main objective of this study is to determine the effect of Green Accounting Practices on the sustainability of quoted Nigerian firms while moderating with firm size. The specific objectives are to:

1. Assess the effect of Green Accounting Practices on Leverage of quoted firms and
2. Examine the moderating effect of Firm Size on the effect of Green Accounting Practices on Leverage of quoted firms.

The following research questions were answered in this study:

1. What is the effect of Green Accounting Practices on Leverage of companies listed on the Nigerian Stock Exchange?
2. To what extent does Firm Size moderate the effect of Green Accounting Practices on Leverage of companies listed on the Nigerian Stock Exchange?

2.0 Literature Review

2.1 Concept Review

Business Sustainability

According to Hernadi (2012), several factors determine the economic sustainability of businesses such as its ability to uphold the continuity principle, experiences no long-term liquidity issues and generates additional earnings on top of the owners' profit expectation (return requirement) in addition to covering fixed costs. This coupled with intangible assets (knowledge, reputation, and corporate culture) that support financial capital must be incorporated into the model for the organization to have long-term viability (Kaldschmidt, 2011). Economic factors like boosting shareholders' value, boosting product profitability, or cutting costs are the core drivers of the operation of traditional for-profit companies. In other words, it is necessary to maximize economic gains while also considering the fundamentals of sustainable development (Nwaobia, Odunlade & Adeleye, 2022).

Leverage

Leverage, which is a measure of risk, is mostly caused by the usage of debt. Variations in the return on equity serve as indicators of financial leverage, which typically takes the form of a debt. The total leverage of a firm is given by a firm's utilization of both fixed operational expenditures and debt costs. This suggests that business risk plus financial risk make up a firm's total risk. Brealey, Myers, and Allen (2008) claim that financial leverage can increase earnings per share (EPS) in a good economy but can also decrease EPS in a bad economy. When earnings before interest and taxes (EBIT) are negative, the negative impact of financial leverage on EPS is worse with greater debt in the capital structure. Like this, a company's financial leverage can both boost shareholders' returns and their risk.

Scholars are interested in sustainability because of its role in the survival of businesses cannot be overemphasized. The existing interest of scholars in sustainability and the possibility of business survival cannot be overemphasized. Researchers such as Bitok, Cheboi and Kemboi (2019) have also claimed that one of the ways by which an institution can grow bigger and be more stable is through their ability to be financially sustainable. These brings to bear the importance of leverage. Furthermore, Berger and Di Patti (2006) opined that financial leverage and financial sustainability are closely related. It is on this premise that it is believed that the extent of leverage of a company is the same as its ability to remain sustainable and relevant in the future.

Financial leverage has been found to react positively and significantly to carbon emission innovations, an aspect of green accounting practices and due to the reciprocal cause and effect, leverage could lead to economic and financial instability (Zhao, Yang & Li, 2020). A company needs capital to run its business and

one of the ways this capital can be raised is by issuing debt securities and engaging in the sales of common stock. Therefore, financial leverage is defined as the extent to which a company's financial structure consist of fixed income securities and preferred stock (Adkins, 2021). The value of financial leverage is realized and its ability to guarantee the sustainability of a firm is confirmed when the assets that are purchased with debt capital earn more than the cost of debt itself.

Because of the importance of financial leverage to sustainable businesses, it is therefore important to research into factors that can affect the leverage of manufacturing firms in Nigeria.

Green Accounting Practices

Green accounting also referred to as environmental accounting is a system of practices that aims at achieving sustainable development, maintaining a favorable relationship with the community and pursuing effective and efficient environmental conservation activities. The interest towards the green practices has increased during the past decade and more and more environmental practices are now being discussed under this domain and the people across the world have increased awareness of green accounting practices.

Green accounting practices has been considered from several angles such as disclosure practices, cost incurred and the environmental accounting checklist. Makori and Jagongo (2013) opined that green accounting practices involves the disclosure of the cost emanating from the effect of production on the environment and the costs incurred in bridging the gap between social and private cost in the annual report and accounts of the firm. Researchers have advised that to increase the corporate responsiveness of firms and in the determination of performance, green costs should be disclosed in financial statement at the end of the period (Jeroh & Okoro, 2016).

Green accounting practices may positively or negatively affect the sustainability of businesses. Some studies such as Melnyk et al (2003) and Zhu and Sarkis (2004) empirically proved that green practices have a positive impact on businesses while, others (Wagner et al., 2002; Hamilton, 1995; Gilley et al., 2000) found a negative relationship between green practices and business sustainability. Therefore, there is a valid reason to investigate the effect and impact of green accounting practices on business sustainability while measuring business sustainability with leverage.

Therefore, for the purpose of this study, green accounting was measured with safety related practices' disclosure, waste management practices' disclosure, environmental protection practices' disclosure, pollution prevention practices' disclosure, green restoration practices' disclosure as discussed in this paper.

Firm Size



Several researchers have defined firm size from the perspective of the log of total number of assets, total number of employees, net sales, number of employees, market capitalization and others. Baregheh, Rowley and Hemsworth (2016) opined that, there are some features in every organization that determines business health and in more specific terms, performance and one of such is firm size. Furthermore, in the consideration of firm boundaries and what determines the boundary of an organization, Dang, Li and Yang (2018) opined that firm size has been considered a major determinant. According to the review of extant literature, the most used measures of firm size are total asset, total sales and market value of equity (Ogunwale, 2022). In the case of large organizations like manufacturing firms that are usually subjected to scrutiny by stakeholders, it is important to consider how firm size moderates the effect of green accounting practices on business health of listed manufacturing firms and in this case, examining firm size from the standpoint of logarithm of total asset of the firms under consideration.

2.2 Theoretical Review

Stewardship Theory

The tenets and assumptions of stewardship theory was brought forth from the criticisms and limitations of the agency theory and stakeholder theory. The establishment of this theory is widely accredited to Davis, Schoorman and Donaldson (1997). They defined stewardship theory as the process where stewards protect and maximize shareholders wealth through improved firm's performance, because by doing so, the stewards believed, that his utility function is maximized, and the business entity is stable and sustainable. According to Nnamani, Onyekwelu and Ugwu (2017), this theory highlights the good, reasonable, unselfish part of human beings. In stewardship theory, stewards' interests do not clash with that of the owners or the organization. Instead, their interest is to ensure that the organization meet the objectives of expectations of the stakeholders. Thus, they should be given the freedom and opportunity to head organizations. In essence, the green practices that would be undertaken by a firm can be entrusted to the stewards of the firm, as they would implement such practices that would improve the sustainability of the firm. Stewardship theory highlights the fact that there are good agents and managers who can work to ensure that the objectives of the organization are met, and their business health, improved on.

This theory is relevant to the study in that it accepts the fact that green activities when entrusted into the hands of good stewards would improve the sustainability of a firm. Also, the assumption of the theory concerning CEO duality is much relevant to the study because it is used by a lot of firms to improve their business sustainability. This theory places emphasis on the fact that it is possible to have good stewards who can align the objectives of the organization and the interests of shareholders, which ultimately improves their

business sustainability. In essence, there is a link between green practices and the business sustainability of a firm based on the stewards to which these functions are entrusted to.

2.3 Empirical Review

Green Accounting Practices and Leverage

With data from 231 manufacturing companies, Hurdle (1974) examined the relationship between leverage, risk, market share, and profitability. He found that firms with a high market share and relatively low risk (measured by the standard deviation of annual profits) prefer lower debt in their capital structures because their attention is skewed toward stable profits. Here, the findings unequivocally demonstrate that increased company performance is not always a result of the usage of financial leverage. It is possible to perform better without using too much loan capital.

Ebaid (2009) studied data from companies ranging from year 1997-2005 to analyze the relationship between financial leverage and corporate performance in the Egyptian context and it was concluded that the influence of financial leverage differs across different financial performance proxies. Salim and Yadav (2012) examined the connection between capital structure and company performance for 237 listed Malaysian Firms. When performance was measured using Return on Assets (ROA) and Return on Equity (ROE), it was discovered that there was a negative relationship between financial leverage and performance. However, when performance was measured using Tobin's Q, there was a positive relationship. In the study of Enerson and Adegbe (2021) on environmental accounting practices and environmental capacity for sustainable development, ex-post facto research design was employed, and five manufacturing firms were purposively selected. Findings revealed a significant and positive relationship between economic sustainability, environmental disclosures, and performance. The study concludes that environmental disclosures significantly affect the sustainability of manufacturing firms and in the long run their going concern.

Dike and Leyira (2018) collected data from 34 companies who had been reporting on environmentally related activities so as to find out the relationship between environmental accounting practices and sustainable development in Nigeria and recommended that stakeholders should request management to produce goods at lower prices and at the same time not have a negative effect on the environment and that, focus should be on enhancing sustainable development through the reduction of environmental impact. Ogbonna, Onuoha, Igwe and Ojeaburu (2020) concluded that during the period of the study, environmental accounting has not fully influenced sustainability development in Nigeria.

Green Accounting Practices, Firm Size and Leverage



Antara, Putri, Ratnadi and Wirawati (2020) opined that larger firms produce more green disclosures and better disclosures compared to smaller firms and in the long run, the sustainability of such firms is guaranteed because larger firms have also been confirmed to perform better than smaller ones. This is in line with the findings of Ali, Mustafa, and Mohamad (2009) who equally concluded that firm size is a significant factor in explaining green disclosures on the internet. The practice of green accounting has also been said to raise awareness for the concerns that has to do with sustainability, formulation of policies and evaluation (Rounaghi, 2019). This is also in line with the findings of Alareeni and [Hamdan](#) (2020) that ESG disclosures is higher and better achieved with firms with higher assets and going forward, firm size affects the effect that green disclosures have on financial leverage. Furthermore, in the study conducted on the effects of environmental disclosures on the market value of 84 Nigerian listed firms between 2011 and 2016 revealed that firm size adequately moderates the effect of environmental disclosures on the value of firm which is a pointer to the ability of the firm to remain sustainable (Okpala & Iredele, 2019). These studies are a pointer to the fact that firm size adequately moderates the effect of green disclosures on the leverage of listed firms which is evidence that a firm can be sustainable and remain a going-concern.

3.0 Methodology

The research design used for this study was the *ex-post facto*. The population of the study consists of the 56 companies quoted as manufacturing companies in the Nigerian Stock Exchange. 37 out of the 56 companies were purposively chosen as the sample size. These companies were purposively chosen because they have been in operation throughout the period of study and that they have consistently reported on their green activities. The period of study is eleven years spanning 2010-2020. It is important to examine this trend to arrive at an accurate finding on the green reporting practices of the firms. With the eleven years period of observing 37 companies, this makes up a total of 407 observations. Content analysis of the financial statement was used to gather information about the green reporting practices of the sampled firms while the EPS value was gotten from the financial statement. The multiple regression technique would be used to analyze data and arrive at a decision on whether to accept or reject the hypothesis. It is expected that when p value is less than the chosen 5% which is 0.05 significant level, there is a significant effect of the independent variable on the dependent variable.

Method of Data Analysis and Model Specification

$$LEV_{it} = \beta_0 + \beta_1 SRPD_{it} + \beta_2 WMPD_{it} + \beta_3 EPPD_{it} + \beta_4 PPPD_{it} + \beta_5 GRPD_{it} + \epsilon_{it}$$

$$LEV_{it} = \beta_0 + \beta_1 SRPD_{it} + \beta_2 WMPD_{it} + \beta_3 EPPD_{it} + \beta_4 PPPD_{it} + \beta_5 GRPD_{it} + \beta_6 FS_{it} + \epsilon_{it}$$

Where dependent Variables (BH) are:

LEV = Leverage

Independent Variables are Green Accounting Practices (GAP):



SRPD = Safety Related Practices' Disclosure; WMPD = Waste Management Practices' Disclosure; EPPD = Environmental Protection Practices' Disclosure; PPPD = Pollution Prevention Practices' Disclosure; GRPD = Green Restoration Practices' Disclosure

Moderating Variable

FS = Firm Size

The intercept of the variables are:

β_0 = Regression Intercept which is constant; β_1 = Coefficients of explanatory variables

The error term is ϵ_{it} ; The panel data will consist of; i = cross sectional variables; t = time series variable; Reject H_0 and accept H_1 if $p < 0.05$; Accept H_0 and reject H_1 if $p \geq 0.05$

Therefore, the a-priori expectation of the study is that H_0 1 to H_0 6: $\beta = 0$. Alternately stated as H_0 1 to H_0 6: $\beta > 0$ = positive. It is therefore expected that the regression coefficients of all the explanatory variables will be statistically significant and positive.

4.0 Results and Discussion

Descriptive Statistics

Table 1: Descriptive Statistics of the Variables

Variable	Mean	Std. Dev	Min	Max
LEV	59.89	25.17	4.28	224.11
SRPD	0.57	0.22	0	1
WMPD	0.18	0.38	0	1
EPPD	0.05	0.16	0	1
PPPD	0.09	0.28	0	1
GRPD	0.05	0.22	0	1
FS	7.18	0.91	5.23	9.31

Source: Researcher's Computation (2022)

Source: Data Analysis, 2022. Where LEV is Leverage, SRPD is Safety Related Practices Disclosure, WMPD is Waste Management Practices Disclosure, EPPD is Environmental Protection Practices Disclosure, PPPD is Pollution Prevention Practices Disclosure, GRPD is Green Restoration Practices Disclosure.

Interpretation

From the descriptive analysis table 1, maximum and minimum values for leverage were 224.11 and 4.28 respectively. While the mean and standard deviation stood at 59.89 and 25.17 respectively. The standard deviation valued at 25.17 shows a moderate dispersion from the series mean of the companies listed on the Nigerian Stock Exchange indicating moderate level of the leverage level.

Safety related practices disclosure (SRPD) on the other hand had a mean value of SRPD is at 0.57, with minimum and maximum values of 0 and 1 respectively and a standard deviation of 0.22. The standard deviation score indicates an averagely low level from the series mean. On the other hand, the mean score of 0.57 indicates a moderate disclosure level of safety related practices as measured in this study. The mean score implies that on the average, manufacturing firms reported 57% of the relevant safety disclosure items in their financial statements. Also, the range of values of 0 and 1 shows the level of disclosure ranging from no disclosure at all (0) to a high level of disclosure (1).

Waste management disclosure practices (WMPD) had a mean of 0.18 with minimum and maximum values of 0 and 1 respectively. The standard deviation (0.38) shows a wide dispersion from the series mean. For environmental protection practices disclosure (EPPD), its mean value stands at 0.05, with minimum and maximum values of 0 and 1 respectively. The standard deviation (0.16) shows a wide dispersion from the series mean. Furthermore, the mean value of PPPD is 0.09, with minimum and maximum values of 0 and 1 respectively. Its standard deviation of 0.28 shows a wide dispersion from the series mean. Finally, the GRPD mean value is 0.05, with minimum and maximum values of 0 and 1 respectively. Its standard deviation of 0.22 shows a wide dispersion from the series mean.

Test of Hypotheses One and Two

H₀₁: Green Accounting Practices has no significant effect on the Leverage of companies listed on the Nigerian Stock Exchange

H₀₂: The moderating effect of Firm Size on Green Accounting Practice has no significant effect on the Leverage of companies listed on the Nigerian Stock Exchange.

Table 2: Test of Hypotheses One and Two

Dependent variable: LEV	Model one				Model two				Difference	
	Random-effects GLS regression with Robust standard errors				Random-effects GLS regression with Robust standard errors				Coeff.	Prob
Variable	Coeff.	Std. err	T-stat	Prob.	Coeff.	Std.	T-stat	Prob.		
Constant	57.25	7.23	7.92	0.000	101.50	29.57	3.43	0.001		
SRPD	6.48	11.61	0.56	0.577	12.00	13.05	0.92	0.358	+/. Inc	Insig/Insig
WMPD	-3.97	3.73	-1.06	0.288	-3.79	3.72	-1.02	0.309	-/. Dec.	Insig/Insig
EPPD	-26.32	8.78	-3.00	0.003	-30.25	9.72	-3.11	0.002	-/. Inc.	Sig/Sig
PPPD	9.52	5.22	1.82	0.068	13.86	6.09	2.27	0.023	+/. Inc.	Insig/Sig
GRPD	1.46	3.74	0.39	0.696	1.47	3.68	0.40	0.689	+/. Inc.	Insig/Insig
FS					-6.64	4.05	-1.64	0.101		
Adj. R ²	0.028				0.0613					
F-Stat/Wald	chi ² ₍₅₎ = 11.45 (0.04)				chi ² ₍₆₎ = 12.94 (0.04)					
Hausman Test	chi ² ₍₅₎ = 5.58 (0.35)				chi ² ₍₆₎ = 5.77 (0.45)					
Testparm	chi ² ₍₁₎ = 115.01 (0.00)				chi ² ₍₁₎ = 98.56 (0.00)					
Heteroskedastic	chi ² ₍₁₎ = 8.40 (0.00)				chi ² ₍₁₎ = 70.98 (0.00)					
Serial	F _(1, 36) = 0.901 (0.35)				F _(1, 36) = 0.99 (0.33)					
Cross-Sect.	0.663 (0.51)				1.46 (0.14)					

Source: Researcher's Computation (2022)

Interpretation

The Hausman test is used to determine the appropriate model for examining this hypothesis between the fixed effect and random effect. The Hausman test was not significant at 5% level of significance, indicating that the Random effect model (RE) is the appropriate and suitable model for this test. To further ascertain the superiority of our choice, the random effect is further examined with the pooled LS (PLS) using the Breusech-Pagan LM test, whose probability value was 0.00, thereby affirming the support for the RE choice of test. From the above assertions, model one will be empirically tested using the random effect model.

Furthermore, the estimated model suffered from heteroscedasticity as indicated by the significant probability value of the chi-square of 0.000 which is lesser than the 5% threshold for this study, indicating that the residuals of the estimated random effect for this model is suffering from variance spread. Meanwhile, the estimated random effect is not suffering from serial correlation, as the probability value of the serial correlation test of 0.35 is above the 0.05 threshold assigned for this study, hence we categorically state that the study's residuals do not have serial correlation.

Model One

$LEV = \beta_0 + \beta_1 SRPD_{it} + \beta_2 WMPD_{it} + \beta_3 EPPD_{it} + \beta_4 PPPD_{it} + \beta_5 GRPD_{it} + \epsilon_{it} \dots$ Model 1

$$LEV_{i,t} = 57.25 + 6.48SRPD_{i,t} - 3.97WMPD_{i,t} - 26.32EPPD_{i,t} + 9.52PPPD_{i,t} + 1.46GRPD_{i,t} + \epsilon$$

$LEV = \beta_0 + \beta_1 SRPD_{it} + \beta_2 WMPD_{it} + \beta_3 EPPD_{it} + \beta_4 PPPD_{it} + \beta_5 GRPD_{it} + \beta_6 FS_{it} + \epsilon_{it} \dots$ Model 2

$$LEV = 101.50 + 12.00SRPD_{it} - 3.79WMPD_{it} - 30.25EPPD_{it} + 13.86PPPD_{it} + 1.47GRPD_{it} - 6.64FS_{it} + \epsilon_{it}$$

The regression equations one and two were estimated using the probability of T-test and the sign and values of the coefficients of each of the measures of green accounting indicating the significance of the effect, the direction, and the magnitude of the effect. The equation one of the studies examined the effect of green accounting, measured as Safety Related Practices Disclosure (SRPD), Waste Management Practices Disclosure (WMPD), Environmental Protection Practices Disclosure (EPPD), Pollution Prevention Practices Disclosure (PPPD), and Green Restoration Practices Disclosure (GRPD) leverage (LEV), while equation two was formulated by introducing firm size to equation one. The probabilities of the t-test revealed that the explanatory variables behave in same manner in the two models. SRPD having probabilities of 0.577 and 0.358 exerting non-significant effect on LEV; likewise, WMPD with probabilities of 0.288 and 0.309 exerted non-significant effect on LEV. Contrarily, EPPD having probabilities of 0.003 and 0.002 exerted significant effect on LEV; PPPD with probabilities of 0.068 and 0.023 exerting significant effect on LEV on model 2 after the introduction of FS; and GRPD with probabilities of 0.696 and 0.689 have a non-significant effect on LEV. The firm size introduced in Model two has probability value of 0.101 which implies that firm size has non-significant effect on leverage.

Based on the coefficients of the explanatory variables, SRPD positively affects LEV before and after the inclusion of firm size, that is models one and two (6.48 and 12.00), this means that the more the SRPD disclosed, the LEV would improve by 6.48 and 12.00 in thousands respectively. WMPD and EPPD has coefficients of -3.97 and -3.79; -26.32 and -30.25 respectively indicating that an increase in the volume of WMPD and EPPD disclosed would lead to thousands' decrease in LEV by 3.97 and 3.79; 26.32 and 30.25. Similarly, GRPD with almost similar coefficients of 1.46 and -1.47 in both models; this means that GRPD has positive effect on LEV, and it implies that an increase in the volume of GRPD disclosed, there would be thousands increase in LEV by 1.46 and 1.47 respectively. PPPD has a coefficient of 9.52 and 13.86 which implies that an increase in the volume of PPPD disclosed would lead to a thousand increase in LEV by 9.52 and 13.86. The coefficient of firm size being negative, -6.64 implies that larger firms are less productive than smaller ones as firm size increases, LEV would decrease by 6.64 thousand.

The coefficient of determination explains the combined effect of all the measures of explanatory variables, on dependent variable. For model one, the value of the R^2 of 0.028 measuring the magnitude of the joint effect reveals that joint variation in the explanatory variables would lead to 2.8% changes in LEV while the remaining changes in LEV of 97.2% could be resulted from other factors beyond the scope of model. Also, the value of F-statistics of 11.45 with probability value of 0.04 implies that the joint effect of all the five explanatory variables on LEV is significant; this means that green accounting practices significantly affect the LEV of listed manufacturing companies in Nigeria.

Decisions

Based on the value of the F-Stat of 11.45, and having five independent variables in the model; with probability of F-Stat of 0.00, that is 0 percent, which is less than the 5% chosen significant level, this study rejected the null hypothesis which states that "Green Accounting Practices has non- significant effect on leverage of companies listed on the Nigerian Stock Exchange" while the alternate hypothesis which states that "Green Accounting Practices has significant effect on leverage of companies listed on the Nigerian Stock Exchange" was accepted.

Similar results were obtained after the inclusion of firm size into the model which led to the formulation of model two, however, the inclusion of FS enhances the strength of effect of SRPD, PPPD and GRPD, reduced the magnitude of the effect of WMPD and EPPD remains the same both before and after the inclusion of firm size. The firm size also has non-significant negative effect on LEV. The overall result showed that firm size significantly controls the effect of green accounting disclosures on LEV. This reflects in the changes in the reported overall R-squared before and after the introduction of the control variable. Prior to the inclusion of

FS in the model, the overall R-squared was 0.028 but result of the after-effect gave overall R-squared of 0.0613, resulting to increase of 0.0333, that is an additional 3.33% increase variation in LEV due to the inclusion of FS into the model.

5.0 Discussion of Findings

The objective of this study was to examine the effect of Green Accounting Practice on the leverage of companies listed on the Nigerian Exchange. The result of the empirical analysis revealed that green accounting practice as well as firm size explains business sustainability of manufacturing firms measured by leverage. Specifically, the independent variables jointly explained the improvement in leverage of the sampled companies. The results showed that some of the explanatory variables (SRPD, PPPD and GRPD) significantly influenced leverage. On the other hand, WMPD and EPPD had negative coefficients. The results of the study were in tandem with the results of Hurdle (1974) which also reveal that the practice of green accounting exerted positively on the financial leverage of the companies.

The results of the study also align with the findings of Ebaid (2009) who also found similar results. The reasons for this can be attributed to the appropriate disclosures of these practices in the companies which has significantly improved their leverage over the years. Other factors can be adduced to the fact that these companies operate in a conducive environment, and it can be said that Government policies were favorable to the carrying out of their operations. Findings also reveal that the introduction of firm size to the model to moderate the explanatory variables was also found to be insignificant though the coefficient of variables increased which shows that firm size played an insignificant moderating role to the improvement of leverage of the sampled firms which agreed with the results and findings of Salim and Yadav (2012). The reasons could be that in these set of companies, firm size was not an important factor to the improvement of leverage and regardless of their firm size either large or small was not very important.

Furthermore, findings revealed that disclosure on environmental protection practices and pollution prevention practices significantly affect the leverage of listed manufacturing firms. However, for safety related practices, waste management practices and green restoration practices showed a non-significant effect of disclosure practices on leverage of listed firms. Also, an increase in the disclosure of safety related practices, green restoration practices and pollution prevention practices will lead to an increase in leverage of listed firms in Nigeria. Whereas, for firm size, waste management practices' disclosure and environmental protection practices' disclosure, an increase in their disclosure practices will lead to a decrease in leverage.

These discoveries show that the disclosure of waste management practices (such as effluent reduction, reparation, and avoidance efforts) and environmental protection practices (such as environmental impact,

product and services and biodiversity to their stakeholders) has little to no effect on the leverage of companies. The knowledge of existence of recycling firms, separation of waste and disposal of waste from recycling site, initiatives to increase separate collection of hazardous wastes, declaration of waste for disposal in landfills in a company calls for more investment opportunities, thereby enhance the equity level of the firms. This outcome corroborates with the findings of Ebaid (2009) that a positive relationship exists between waste management practices disclosure and firm's stability. These findings are in line with the result of the regression studies carried out by Ezekwesili and Ezejiofor (2022) on waste management, leverage, and firm size of Nigerian listed conglomerate companies. Findings revealed that there is a non-significant influence of leverage and firm size on waste management and that leverage, and firm size insignificantly influenced the environmental performance of firms of the sector under study. The estimation results further revealed that environmental protection practices disclosure has a negative effect on leverage. This outcome upheld the findings of Nguyen and Tran (2019) and Idamoyibo (2021). Findings gathered from their study revealed that there is no significant relationship between environmental accounting and ROA.

Also, this discovery is a pointer to the fact that waste management practices disclosure has no potency to significantly influence leverage of firms listed on the Nigerian stock exchange. It is negative probably because avoidance or ineffective waste reduction or waste avoidance tend to maximize cost in the organization, thereby resulting in low performance and sustainability. Empirically, this outcome affirmed the findings of Egbunike and Okoro (2018), Odo, Igberi and Anoke (2016). They reported a negative impact of green accounting component on business health of firms. Disclosure on safety practices and green restoration practices also affects leverage and in the long run sustainability of firms in a non-significant manner. Findings from our study apparently support the argument that firms with high leverage also environmentally conscious and therefore do not incur much expense on waste management and this is in line with the findings of Kiswanto, Woro and Ulupui (2020) and Lamidi, Adesola and Tariro (2020).

6.0 Conclusions and Recommendations

Empirical findings of the study revealed that for leverage, safety related practices, pollution prevention practices, and green restoration practices all have a significant effect on the leverage of the firm which is a measure of the firm's sustainability. On the other hand, waste management and environmental practices have non-significant influence on business sustainability measured by leverage. It is therefore recommended that firms should exert more effort in the disclosure of these practices to boost the confidence of stakeholders

in the fact that the firm is sustainable and worth investing in. Furthermore, policy makers should make policies that will make these green accounting practices disclosure mandatory for manufacturing companies in Nigeria. Also, management of firms should ensure that there is adequate disclosure of green accounting practices of the firm coupled with the maintenance of firm size, through the adequate use of its asset to bring about business sustainability.

For further research, other measures of business sustainability can be considered. Also, the variables used to measure business sustainability can be further increased to arrive at more robust results and findings. Furthermore, future researchers may consider other sectors of the economy not captured in this study.

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ACCOUNTING INFORMATION SYSTEM AND CORPORATE PERFORMANCE OF QUOTED CONSTRUCTION COMPANIES IN NIGERIA

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Abstract

An Accounting information system (AIS) provides a tool for all departments in an organization (finance, production, sales, etc.) to enhance corporate performance particularly in this period of worldwide technological development. The paper aimed at ascertaining the relationship between AIS and corporate performance of quoted construction firms in Nigeria. Judgmental sampling techniques was deployed to select six (6) companies among the eight (8) construction/real estate companies quoted under the Nigeria Exchange Group. Data were collected from the published annual reports of the sampled construction firms for a period of nine (9) years (2012-2020). Descriptive statistics and ordinary least square regression techniques with the aid of STATA version 13 were employed to analyze the data. Findings reveals an insignificant positive relationship between cost of accounting software and the return on assets of quoted construction companies in Nigeria. Also, there is no significant positive relationship between the cost of accounting software and the earnings per share and dividend per share of quoted construction companies in Nigeria. The study recommends that managers should endeavor to effectively put into good use the firms' accounting software infrastructure to maximize its value.

Keywords: Accounting Information System, Corporate Performance, Technological Development, Construction Companies.

1. Introduction

The universal improvements in information technology and the need to satisfy the demands of the users of accounting information have increased the importance of accounting information. (Curtis, 2016). The main aim of the accounting system is to provide financial data on purchases, sales, expenses, and income of the organization. Accounting information system which is a component of organization's information system facilitates corporate decision makings. It is designed to suit the environment, job requirements in addition to the structure of the organization. The management of companies focuses heavily on records generated from the accounting information system (AIS) as investing in sound and consistent accounting systems is of interest to management because it helps them in improved examination of the performance of their firms. AIS provide essential information to all categories of management which makes it important. Information assists management to discharge their duties of planning, controlling and evaluating performance as well as in making decisions effectively and efficiently.



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Presently, expenditure on information system and budgets of many companies increases due to bad situations of the economy and competitions which created pressures on the cost of information. Information systems are developed using information technologies to assist people in executing tasks. Companies develop information system that supports decision making, communications and knowledge-based management. The important component of information system used for making decisions is the Accounting Information System (AIS). Accounting information system is an equitable instrument that assists managers to function effectively. Weak accounting information system endangers corporate performance, thus making management to function ineffectively. The consequences are distraught conditions which many Nigerian firms face (Olugbenga, 2014). Most businesses have not incorporated the use of better accounting information system in their day-to-day transactions, and it is a matter of concern which needs to be dealt with. It is on this premises that the study wishes to examine how accounting information system contribute to the corporate performance of quoted construction firms in Nigeria.

The broad aim of this study is to ascertain the relationship between accounting information system and corporate performance of quoted construction firms in Nigeria. Specifically, the study sought to: Determine the relationship between cost of accounting software and the Return on Asset (ROA) of quoted construction firms in Nigeria. Examine the relationship between cost of accounting software and the Earnings per Share (EPS) of quoted construction firms in Nigeria. Determine the relationship between cost of accounting software and the Dividend per Share (DPS) of quoted construction firms in Nigeria.

Three research questions raised to address the study are: What is the relationship between cost of accounting software and ROA of quoted construction firms in Nigeria? What is the relationship that exists between cost of accounting software and EPS of quoted construction firms in Nigeria?

What is the relationship between cost of accounting software and DPS of quoted construction firms in Nigeria? The study is guided by the under-listed null hypotheses: H0₁: There is no significant positive relationship between cost of accounting software and the ROA of quoted construction firms in Nigeria. H0₂: There is no significant positive relationship between cost of accounting software and the EPS of quoted construction firms in Nigeria. H0₃: There is no significant positive relationship between the cost of accounting software and the DPS of quoted construction firms in Nigeria.

2. Review of Related Literature

2.1 Conceptual Review

Accounting Information

Accounting information is a set of economic records of enterprise transactions expressed in money phrases. It can as well be seen as the product of the act of corporate reporting, which is arrived at after recording, classifying, summarizing (in a tremendous manner an object of cash transaction and activities which are in component or at least of economic character) and interpreting the result thereafter (Sari & Bayu, 2019).

Furthermore, accounting information is a formal and complete assertion which describes the economic activities of a company; it carries all relevant information supplied in an understandable manner for proper and uniform choice making in terms of investment, making plans, overall performance assessment, and forecasting, expected yield on investment by the users (Adewaye & Akabi, 2012).

Accounting information is a language of economic activities, it analyzes financial transactions to provide outside reporting to users which include stakeholders, buyers, creditors, and government agencies etc. The importance of accounting data cannot be over emphasized as it helps in making sound investment decisions and reduces information asymmetry problem between managers and investors (Amahalu, Nweze & Obi, 2017). For financial reporting to function effectively, accounting information needs to be applicable, whole, and dependable.

Accounting Information System

Accounting information system (AIS) is a process of collecting, storing, and processing monetary and accounting statistics which can be used for decision making, internally by control and externally with the aid of other involved parties such as investors, lenders, and tax authority (Kebede & Manaye, 2016).

Accounting Information system comprises a set of interrelated components or programme in computer that collect, store, and disseminate accounting data and information and at the same time provides a feedback mechanism to meet corporate objectives (Rahmi, Widya, Sari & Bayu 2019)

It is a device used for collection and recording of records and facts regarding occasions which have an economic effect upon businesses and the renovation, processing, and communication of such information to each all the stakeholders (Olusola et al. 2013).

Cost of Accounting Software

Accounting software has been widely used as a proxy for measuring accounting information system. It explains the form of application software that records and analyzes accounting transactions within practical modules, along with accounts payables, account receivable, magazine, widespread ledger, payroll, and trail stability. It features as an accounting facts gadget. It can be evolved in residence by the business enterprise the usage of it, can be purchased from a 3rd celebration, or maybe a combination of a third-party software bundle with neighborhood adjustments. Accounting software programme may be internet-based totally, which may be accessed everywhere at any time with any device that's net enabled or may be computing device primarily based. It varies greatly in its complexity and cost.

Corporate Performance

Corporate performance encompasses a measure of how a company achieved its overall stated objectives (Bwana, 2017). Thrikawala (2011) defines corporate performance as the measure of how well a company uses the assets it has in the primary mode of operation and generates income. It is currently defined as the sum results of the operations of a company at a particular time (Okafor, 2017). It is also defined as the achievement of distinctive organizational goals evaluated in opposition to recognized ideals, completeness, and costs (Thrikawala, 2011).

There are different measures used in assessing corporate performance. However, in this study corporate performance is measured by investor's ratios such as Earnings per Share (EPS) and Dividend per Share (DPS). Return on Assets (ROA) was also used in measuring the corporate performance of firms.

Return on Assets (ROA):

Return on assets is a profitability ratio that measures the number of profits which companies generate from their assets. It measures the efficiency of corporate managers in the generation of income from economic resources or assets of the organizations. It is represented as a percentage and a higher percentage implies that the managers are efficiently utilizing their statement of financial position in generating profit.

ROA is calculated as: $\frac{\text{Net income/Net profit.}}{\text{Average total assets}}$

Earnings Per Share (EPS):

EPS shows the net earnings of companies allotted to every share of their common stock. Firms disclose Earnings Per Share that are adjusted for extraordinary items as well as possible dilution of shares.

Earnings Per Share is calculated using this formula:
$$\frac{\text{Net Earnings} - \text{preferred stock}}{\text{Outstanding shares}}$$

Divided Per Share (DPS)

DPS is the wide variety of stated dividends distributed by companies for each ordinary share remaining. It is the wide variety of dividends investors of organizations get for every single share. Ordinary stocks are the fundamental elective stocks of a business enterprise.

DPS can be calculated using the formula.

$$\text{DPS} = \frac{\text{Total dividend paid out over a period of time} - \text{Any specialized dividend}}{\text{Shares outstanding.}}$$

Accounting Information System and Corporate Performance

Ponemon and Nagida (2013) emphasize that the principal cause for which accounting information is created is to enable choice-making. Nevertheless, for efficient financial reporting, amongst different necessities, it ought to be applicable, complete, and dependable. These qualitative features need that the accounting numbers ought to be fair and ought not to favour only one interest group. Hunton, (2017) examines, the connection between AIS and corporate performance and discovered that there was a sturdy connection between AIS and company overall performance, this implies that access to accounting records results in businesses being effective.

(Harash, 2015) concurs that AIS assist managers in making decisions. Its benefits are assessed via its enhancement of the procedures of making decisions, accounting number quality, evaluating performance, inner controls and easing corporate dealings.

2.2 Theoretical Framework

The study is based on the Resource Based Theory. The foundational proponent of the resource-based view theory was Barney (2006). The theory basically assumes that business organizations being a collection of integrated capacities, can utilize their resources as mechanisms for the strategic resolution of common business issues. It stresses that firms can plunge deep into their resources to solve basic business issues and where the firm cannot utilize its own resource the firm can outsource for such. Firms with better management of resources at their disposal outperform firms that do not. This explains why companies that priceless, uncommon, exclusive, and well-mixed resource record better performance over their counterparts

who do not adequately put their resources to business solutions. The study is related to this theory because from the theory it can be deduced that firms that properly put accounting software resources to optimal use expect a higher level of corporate performance than those that do not. Moreover, given the toughness of market competition, the resource-based view argues that any firm that fails to capitalize on any resource, be it human or technological stands the chance of being toppled by close competitors (Anaëli, 2017). Therefore, firms must implement accounting software so as to remain competitive and thereby strategize with such implemented resources for better managerial decision making that will be evident in the firm's corporate performance.

2.3 Review of Empirical Studies

Various studies on how AIS affects the performance of quoted construction companies have been viewed from different perspectives as follows:

Sogbo (2020) studied "the effect of accounting information on management decision making process in TAM Douala-Cameroon". A survey method was used. The population comprised two hundred and four workers in the studied area, out of which a sample size of 35 was arrived at. Primary data was collected from respondents using questionnaires. Descriptive statistics and multiple regression analyses were used in analyzing data. Regression outcome shows that there is a positive relationship between all the predictor variables; reliability & comparability and decision making.

Rahmi, Widya Sari, and Bayu (2019) examined the effect of information technology, quality of accounting information and understanding of students on accounting software users. The study was a descriptive survey research. The population of the study comprised all the students in the Accounting Study Program of the Faculty of Economics, Universities Prima Indonesia. The sample size of the study was 290 students who were purposively selected. Questionnaire was used as instrument of data collection to source primary data from the respondents. PIs-algorithm, bootstrapping and blindfolding were deployed as the methods of data analysis in the study with the aid of SmartPis program version 3. The findings of the study revealed the following: information technology, information quality, and accounting understanding have a significant effect on the satisfaction of users of accounting software.

Pramawati and Dodik (2018) examined the elements that impact the fulfillment of the implementation of AIS and AS of privately owned universities in Bali. Survey research design guided the conduct of the study. The population was 8 universities. The sample selected were 10 employees from each of the 8 universities, with a total of 80 people. Primary data were used and was obtained through questionnaire. The Partial Least

Square was used in analysis with the aid of SmarPLS 3.0. Finding revealed that systems qualities, data qualities and systems usefulness affect their use and benefits derived by users of accounting software.

Akanbi and Adewoye (2018)) determined the effect of adoption of the accounting software on the financial performance of commercial banks in Nigeria. The population comprised 16 commercial banks with a sample size of 80 employees of the sampled banks. Data were obtained through a questionnaire. Cronbach's alpha test was used to measure the reliability of the measurement tool and also simple linear regression test was used to test the hypothesis. The finding reveals that the sampled banks adopted and used accounting software in rendering banking services at a high rate. This implies that AIS significantly and positively influences firm performance with $\alpha < 0.05$.

Beg (2018) examined how the use of accounting software influences the economic activities of selected Indian corporations. Data were obtained through a questionnaire. The sample size was 283 respondents. The simple linear regression model was used to test the hypotheses of the study. The findings indicated that the use of accounting software significantly influences the financial performance of ten major Indian companies.

Chong and Nizam (2017) investigated the influence of accounting software on the Organizational performance of organizations in Malaysia. This study was guided by the positivism paradigm and survey explanatory research design. The research used a cross-sectional data collection technique involving primary data obtained through a questionnaire. The study found that Software Efficacy and Comfort of Use moderately and significantly influence business performance. However, Software Data Quality, Accurateness and Consistency insignificantly influence corporate performance.

Syahirah and Fadzilah (2017) scrutinized the effects of the use of accounting Software on the corporate performance of business units in Malaysia. The work was guided by an exploratory survey research design. The target population of the study comprised all the accountants/users of accounting software employed in banking firms that operate principally in Malaysia. Random probability sampling was used to select 150 sample participants for the study. Primary data were collected for this research with the use of a structured questionnaire. The collected data were analyzed with the use of regression analysis. The findings of the study revealed that the use of accounting software has a statistically significant effect on the firm performance of business units in Malaysia.

Rahman, Ahammed, Rouf and Uddin (2017) examined how the usage of accounting software systems affects the corporate profitability of SMEs in Bangladesh. The study was guided by a descriptive survey research design. Out of all the SMEs in Bangladesh, a total of 300 firms were randomly selected as sample participants in the study. A structured survey questionnaire was used for primary data collection. ANOVA analysis technique was adopted in the test of the study hypotheses. The research outcome suggests that suitably applying and using accounting software systems significantly influences a strong business responsibility and accountability; the use of accounting software significantly affects owners' and policymakers' understanding of their performance and improvement; finally, the use of accounting software technology significantly reduces firms operating cost and significantly increases firm profitability and competitive advantages.

Anaeli (2017) study was a survey descriptive research and therefore used primary data from 90 respondents that were selected using purposive sampling techniques. The Probit regression results indicated that computerized AS statistically and significantly affects organization performance in LGAs in Arusha.

Ezenwoke (2017) examined the factors influencing the implementation of the e-accounting systems of Nigerian Micro/Small Businesses. It adopted the survey research design. The population was 660. Binary Logistic Regression was used in analyzing data. The research outcome showed that all the factors significantly influence e-accounting implementation.

Wickramsainghe, Pamarathna, Cooray and Dissanayake (2017) examined the effect of AS on the performance of organizations. The outcome of the analysis revealed that: accounting software does not affect the reliability of the information in the financial statement, but it affects the efficiency of information in the financial statement. The result also indicated that User Friendliness of the Accounting Information system affects business performance of organization.

Thuhoje (2017) studied the roles of AIS in the investment decisions of Tanesco Morogoro Municipal. Qualitative and quantitative data were used. The population was 50 employees of Tanesco Morogoro. It was discovered that the quality of accounting information in terms of its accuracy, adequacy, reliability, and mode of disclosure is a major determinant of the level of efficiency of investment decision-making.

Adetiloye and Eriabie (2017) researched accounting information and share prices in the food and beverage, and conglomerate sub-sectors of the Nigerian Exchange Group. It was discovered that market price per

share has a positive and insignificant effect on the book value per share and earnings per share of the sampled firms.

Saeidi (2014) examined the impact of the use of computerized accounting software or system on the financial performance of firms in Iran. The study adopted a survey research design, primary data, and the use of a questionnaire. A questionnaire containing 30 questions was designed to elicit primary data from the respondents. The paper found that the use of computerized AS insignificantly affects the financial performance of the firms in Iran.

Gap in Literature

Different scholars have carried out an empirical investigation in the direction of the present study. However, to the best knowledge of the researchers, none was focused solely on accounting information system of construction companies. Also, previous scholars failed to use Earnings per Share, Dividend per Share and Return on Asset as a proxy in showing the relationship between accounting information systems and corporate performance. As a result of the above, there is still a glaring gap in knowledge which of course needs to be bridged. To address this gap in the literature, this study was conducted to examine the relationship between the accounting information system and corporate performance of quoted construction firms in Nigeria.

3. Methodology

Research Design

This study adopted a correlational research design.

Population, Sample Size and Sampling Technique

The population was made up of 8 construction/real estate firms on the Nigerian Exchange Group as at March, 2021. Judgmental sampling was employed in selecting 6 firms. UPDC Real Estate Investment Trust and Roads Nig. Plc. were excluded based on incomplete data. The sampled firms are:

Arbico Plc, Julius Berger Nig. Plc, SFS Real Estate Investment Trust, Smart Products Nigeria Plc., UACN Property Development Company Plc., Union Homes Real Estate Investment Trust

Source: NSE Fact book, 2021

Method of Data Collection and Technique for Data Analysis

Secondary data were used and were obtained from the published annual report/accounts of the construction firms from 2012 to 2020. Descriptive statistics and Pooled Ordinary Least Square regression technique were respectively used in data analysis and hypotheses testing with the aid of STATA version 13.

Model Specifications

To be able to analyze the data using OLS, Firm Size (FSize) was added as control variables, the researcher constructed an econometric model as follows:

$$CP = f(AIS, FSize, \dots)$$

Where,

AIS = Accounting Information System; CP = Corporate Performance; FSize = Firm Size

In an econometric form: $Y_{it} = a_{it} + bX_{it} + e_{it}$eqn 1

Substituting AIS for X and performance surrogates for Y,

we have:

$$ROA_{it} = a_0 + b_1AIS_{it} + FSize_{it} + e_{it}$$
.....eqn 2

$$EPS_{it} = a_0 + b_1AIS + FSize_{it} + e_{it}$$
.....eqn 3

$$DPS_{it} = a_0 + b_1AIS_{it} + FSize_{it} + e_{it}$$
.....eqn 4

Where,

a = constant; b = coefficient of the independent variable; ROA_{it} = Return on Assets of firm i in year t ; EPS_{it} = Earnings Per Share of firm i in year t ; DPS_{it} = Dividend Per Share of firm i in year t ; AIS_{it} = Accounting Information System of firm i in year t ; e = error term; FSize = Firm Size

Measurement and Operational Description of Variables

The operational measurement of variables is described below.

Table 1: Operational Measurement of Variables

Variables	Type of Variable	Acronym	Definition
1. Accounting Information System	Independent	AIS	Cost of accounting software (i.e., expenditure on accounting software)
2. Return on Assets	Dependent	ROA	$\frac{\text{Earnings after tax}}{\text{Total Assets}}$
3. Earnings Per Share	Dependent	EPS	$\frac{\text{Earnings after tax}}{\text{Outstanding Number of Shares}}$
4. Dividend Per Share	Dependent	DPS	$\frac{\text{Dividend}}{\text{Outstanding Number of Shares}}$
5. Firm Size	Control	FSize	Amount of Total Assets of the Firm

Source: Authors' Compilation, (2021)

Note: Large volume data were log transformed to correct for outliers.

Decision Rule

Reject H_0 and accept H_a if the P-value of the test is less than α -value (level of significance) at 5%, otherwise accept H_0 .

4. Data Presentation, Analysis and Discussion of Results

Data Presentation

The data that were collected included cost of accounting software, Return on Assets, Dividend per Share and Earnings per Share for the respective accounting periods. The extracted data are presented in Appendix I.

Descriptive Statistical Analysis

Descriptive analysis was done using mean and standard deviation as shown in table 2 below.

Table 2 Descriptive Statistics of the Variables

Variables	Variable Obs	Mean	Std. Dev.	Min	Max
ROA	54	.0148221	.1081379	-.5439555	.2075559
EPS	54	2.225148	3.207768	-6.56	8.76
DPS	54	1.601296	2.50338	0	8.1
AIS	54	61686.81	101936.4	0	292358
FSize	54	6.871267	1.029788	5.033761	8.46441

Source: Analysis Output (2021) Using STATA Ver. 13.

As seen in table 2 above, the average value for Return on Assets (ROA) is approximately 0.15. The minimum and maximum values are -0.54 and 0.21, respectively.

The standard deviation is 0.11. For Earnings Per Share (EPS), the mean value is 2.23; the minimum and maximum are -6.56 and 8.76, respectively, and the standard deviation is 3.21 which indicates that there is presence of outliers. For Dividend Per Share (DPS), the mean value is 1.60. The minimum and maximum values of DPS are 0 and 8.1, respectively with a standard deviation of 2.50. By rule of thumb, there is no indication of outliers since the standard deviation is lower than 3. Accounting Information System has a mean value of ₦61,686,810 with a standard deviation of 101,936,400. The minimum and maximum investment in AIS show ₦0 and ₦292,358,000, respectively, which indicates the presence of outliers. Finally, for Firm Size (FSize), the mean value is 6.871267 with a standard deviation of 1.029788. The minimum and maximum Firm Size are 5.033761 and 8.46441, respectively which shows no indication of outliers.

Hypothesis Testing

The hypotheses that were formulated for the study were tested using Pooled Ordinary Least Square regression technique which was computed with the aid of STATA version 13.

Table 3 Regression Results

	ROA Model (Pool OLS)	EPS Model (Pool OLS)	DPS Model (Pool OLS)
CONS.	.0982058 {0.331}	-1.719751 {0.608}	.2724813 {0.915}
AIS	4.63e-07 {0.004} **	-4.66e-06 {0.363}	-8.19e-06 {0.038} **
FSIZ	.0079748 {0.021} **	.6159825 {0.226}	.2668965 {0.487}
F-STAT/W-STAT	7.67{0.001} ***	0.80 {0.4534}	2.37{0.1035}
R- Squared	0.2311	0.0305	0.0851

Note: (1) bracket {} are p-values

(2) **, ***, implies statistical significance at 5% and 1% levels respectively

Source: Compiled Analysis Output (2021) using STATA ver. 13

Hypotheses I

H0₁: There is no significant positive relationship between Cost of Accounting Software and ROA of quoted construction companies in Nigeria.

To examine the relationship stated in hypothesis one, the model below was deployed.

$$ROA_{it} = a_0 + b_1AIS_{it} + FSize_{it} + e_{it}$$

The hypothesis testing produced the results presented on table 3 above. The detailed result is presented in table 4 at the appendix section.

Interpretation of Result

The first regression analysis was conducted to determine the amount of variation in Return on Asset (ROA) explained by cost of accounting software (AIS). The calculated value of R² is 0.2311 which means that 23.11% of the corresponding variation in ROA is due to change in the AIS. The rest 76.89% is due to other elements that are not in the model. The results of the analysis are shown in Table 4.2.

The F-statistic has an F value = 7.67 which is not significant with p-value = 0.0012 < 0.05. By implication, the overall model is not significant in predicting the ROA of the sampled firms.

Analysis of the regression model coefficients shows that AIS has a positive beta co-efficient of 0.4368 as indicated by the co-efficient matrix with a p-value = 0.004 < 0.05. The control variable, Firm Size, has a positive beta coefficient of 0.0759 with a p-value = 0.600 > 0.05; while the constant value of ROA is 0.098. Therefore, only cost of accounting information system contributes significantly to the model. The regression equation is presented as follows:

$$ROA = 0.098 + 0.4368 \times AIS + 0.0759 \times FSize_{it} + e.$$

The researcher therefore accepts the null hypothesis and confirmed indeed that there is a positive and insignificant relationship between Cost of Accounting Software and the return on asset of quoted construction companies in Nigeria.

Test of Hypothesis II

H0₂: There is no significant positive relationship between Cost of Accounting Software and the EPS of quoted construction companies in Nigeria.

In order to examine the relationship between cost of accounting software and earnings per share of quoted construction firms, the regression model below was deployed.

$$EPS_{it} = a_0 + b_1 AIS + FSize_{it} + e_{it}$$

The hypothesis testing produced the results as presented in table 3 above. The detailed result is presented in table 5 at the appendix section.

Interpretation of Result

The second regression analysis was conducted to determine the amount of variation in Earnings Per Share (EPS) explained by cost of accounting software (AIS). The calculated value of R² is 0.03 which means that only 3% of the corresponding variation in EPS can be explained by changes in the independent variables. The rest 97% is due to other issues that are not in the model. The results of the analysis are shown in Table 4.

The F-statistic has an F value = 0.80 which is not significant with p-value = 0.453 > 0.05. By implication, the overall model is not significant in predicting Earnings Per Shares of quoted construction firms in Nigeria.

The model coefficients shows that AIS has a negative but insignificant co-efficient of -0.1482 with a p-value = 0.363 > 0.05. The control variable, Firm Size, has a positive but insignificant beta coefficient of 0.1977 with a p-value = 0.22 > 0.05; while the constant value of EPS is -1.7198. Therefore, the predictors do not contribute significantly to the model. The regression equation is presented as follows:

$$\text{EPS} = -1.7198 + -0.1482 \times \text{AIS} + 0.1977 \times \text{FSize}_{it} + e.$$

The researchers therefore accept the null hypothesis and confirmed indeed that there is no significant positive relationship between cost of accounting software and the Earnings per share of quoted construction companies in Nigeria.

Test of Hypothesis III

H0₃: There is no significant positive relationship between the Cost of Accounting Software and the DPS of quoted construction companies in Nigeria.

To examine the relationship between cost of accounting software and dividend per share of quoted construction firms, the regression model below was deployed.

$$\text{DPS}_{it} = a_0 + b_1 \text{AIS}_{it} + \text{FSize}_{it} + e_{it}$$

The hypothesis testing produced the results as presented in table 3 above. The detailed result is presented in table 6 at the appendix section.

Interpretation of Result

The third regression analysis was conducted to determine the amount of variation in Dividend Per Share (DPS) explained by cost of accounting software (AIS). The calculated value of R² is 0.085 which means that only 8.5% of the corresponding variation in DPS is due to changes in AIS. The rest 91.5% is due to other elements that are not in the model. The results of the analysis are shown in Table 5

The F-statistic has an F value = 2.37 which is not significant with p-value = 0.1035 > 0.05. By implication, the overall model is not significant in predicting the Dividend Per Shares of quoted construction firms in Nigeria.

The model coefficients reveal that AIS has a negative and significant coefficient of -0. with a p-value = 0.038 < 0.05. The control variable, Firm Size, has a positive but insignificant beta coefficient of 0.1098 with a p-value = 0.48 > 0.05; while the constant value of DPS is 0.2725. Therefore, only the cost of accounting software contributes significantly to the model. The regression equation is presented as follows:

$$\text{DPS} = 0.2725 + -0.3334 \times \text{AIS} + 0.1098 \times \text{FSize}_{it} + e.$$

The p-value of the test is 0.1035 > 0.05. Therefore, the researchers accept the null hypothesis and confirmed indeed that there is no significant positive relationship between the cost of accounting software and the dividend per share of quoted construction companies in Nigeria.

5. Discussion of Findings

The result reveals that the cost of accounting software insignificantly relates to ROA of the quoted construction companies in Nigeria. The ROA will have a constant value of 9.8% if the coefficients of the predictor variable and control variable are zero. However, the results show that an increase in the cost of accounting software by 1 unit will reduce ROA by 0.4368. In addition, the control variable, Firm Size, does not significantly affect the ROA of the firms. The finding of the study agrees with that of Saeidi (2014). but disagree with those of Sogbo (2020); Beg (2018); Chong and Nizam (2017). The reason for the difference is attributed to the fact that the prior studies used a different time scope and different sectors.

Also, the study revealed that cost of accounting software does not significantly relate to Earnings Per Share of quoted construction companies in Nigeria. The EPS will have a constant value of ₦1.72 if the coefficients of the predictor variable and control variable are zero. However, the results show that an increase in the cost of accounting software by 1 unit will not affect EPS. In addition, the control variable, Firm Size, does not significantly affect the EPS of the firms. This finding is in tandem with the submission of Anaeli (2017) and Syahirah and Fadiziah (2017) who reported no significant effect of AIS on firm performance.

Finally, it was shown that the cost of AS significantly relates with DPS of quoted construction companies in Nigeria. The DPS will have a constant value of ₦0.2725 if the coefficients of the predictor variable and control variable are zero. However, the results show that an increase in the cost of accounting software by 1 unit will reduce DPS by 0.3334. In addition, the control variable, Firm Size, does not significantly affect the DPS of the firms. However, the findings do not agree with the results of Saeidi (2014). The study deployed primary data and survey descriptive research design. The result of the study showed that accounting software has no significant relationship with the financial performance of firms in Iran. The reason for the difference between the findings of the present study and that of Saeidi (2014) could be attributed because this study deployed secondary data and Ordinary Least Square technique. The difference between the findings of the present study and those of prior related studies is that the researchers utilized evidence from a different sector and deployed a time scope that differs from those of prior literature such as Anaeli (2017) and Syahirah and Fadiziah, (2017).

The cost of accounting software not having a significant relationship with the performance measures used could be a result of the following:

Constant Power Outage: Whenever there is a power failure, the AIS equipment/machines remain idle.

Costs of Diesel/Fuel: The high cost of diesel/fuel is a contributory factor in not having a significant positive association. Constant power supply or availability of electricity is very important for the effective functioning

of AIS. Hence where there is a power failure or no diesel available due to the high cost of purchasing it, this will result in the system not being used at the right time, and this can adversely affect profitability. Moreover, the high cost of burning diesel/fuel could also reduce the profitability of these companies.

Outsourcing of Services: Most companies do not want to hire employees or rather use in-house technicians to repair their machines/equipment when they become faulty or dysfunctional. These companies prefer to outsource the repair of such equipment. This results in delays in work as the equipment most often are not repaired on time. The repairs can take weeks and even months. Most often, the original parts of the equipment are lost, or damaged while being sent out for repairs. As there is a delay in repair, there is idle time in the use of these AIS machines/equipment. This results in a loss of profits or reduces profitability. When profitability is reduced, the relationship of the AIS on the performance of these companies can be insignificant and negative. Had it been that those companies have in-house employees who will quickly service the AIS equipment, then there won't be delays and idle time, and profitability will not be affected.

6. Summary of Findings, Conclusion and Recommendations

Summary of Findings

1. There is an insignificant positive relationship between the cost of accounting software and ROA of quoted construction companies in Nigeria.
2. There is no significant positive relationship between the cost of accounting software and the EPS of quoted construction companies in Nigeria.
3. There is no significant positive relationship between the cost of accounting software and the DPS of quoted construction companies in Nigeria.

Conclusion

This study scrutinized the association between AIS and the corporate performance of quoted construction companies in Nigeria. It was shown that the extent of the relationship between the independent and the dependent variables is weak. The major findings of the study revealed that while the cost of accounting software has positive and significant effects on the Return on Assets, the cost of accounting software has no significant relationship with Earnings Per Share and Dividend Per Share of the quoted construction firms in Nigeria.

By implication, although the information from AIS can be effective in the decision-making processes of users of such information and for other managerial functions, using the information is of immense benefit when the

benefit exceeds the cost. This conclusion is informed by the result of the study which shows that even though investment in accounting software enhances ROA of sampled companies, the cost of the accounting information system does not improve the dividend distributed to shareholders, nor does it enhance the earnings of the firms. It is therefore concluded that accounting information systems tend to contribute to firm performance only when the system contributes to faithfulness, constancy, and trustworthiness of accounting information.

Recommendations

The researchers recommended as follows.

Managers should endeavour to effectively put to good use the firm's accounting software infrastructure to maximize its value.

Accountants should take part in the development of the firm's accounting software to help the firm develop the most suitable information system that will contribute to organizational success.

Shareholders should encourage firm managers to invest in computerized accounting information system.

Contribution to Knowledge

Previous studies that were conducted focused on the Nigerian Banking sectors, SMEs, manufacturing sector, etc. the present study took a different direction by studying Nigerian construction companies. This research contributed to the body of knowledge by addressing this.

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ERADICATING EXTREME POVERTY AMIDST COVID-19 PANDEMIC: A FOCUS ON SUB-SAHARAN AFRICA

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Abstract

For several decades before 2019, efforts were made by several organizations to lift many people in the universe out of abject poverty. Consequently, the level of extreme poverty declined steadily for a long period. However, this desire to bring poverty to an end started suffering significant setback from 2019 as soon big challenges like COVID-19 menace, violent conflicts and climate change took a center stage globally. Sub-Saharan Africa was found to be among the regions worst hit by the menace of penury. This work was intended to appraise the achievement made so far in eradicating indigence in Sub-Sahara Africa. Historical research approach was employed. It was realized that while a lot of gains have been made in the entire universe regarding the application of integrated strategies to minimize indigence, a significant part of the region is still swimming in abject poverty. This research recommends that efforts be intensified to regularly improve and update poverty data. In addition, integrated poverty alleviation strategies should not cease to be employed, particularly in SSA countries.

Keywords: Poverty Reduction, Globe, Sub-Saharan Africa.

1. Introduction

Destitution is regarded universally as a serious issue that afflicts a significant percentage of the universe. It presents itself in diverse patterns like insufficiency of earnings and high-yielding resources as would guarantee maintainable means. Other characteristics of extreme poverty are persistent starvation and malnourishment, homelessness, absence of durable goods, disease, absence of clean water, deficiency of education, low life expectancy, etc (Ayoo,2022; World Bank Development Report, 1990,2001; Sneyd,2015). Eliminating extreme poverty has been identified as an imperative as it imposes. Some dangerous consequences on the well-being of humanity (Ayoo,2022; Sachs,2005). This is why removing it has been an important target in the MDGs embraced by the United Nations (UN) in the year 2000(Ayoo,2022).

Though poverty exists universally, it is found to have been most prevalent in sub-Sahara African (SSA) countries as well as those in Asia (Hamel, Tong, &Hofer ,2019). The causes of destitution in both regions include the implementation of policies that do not accommodate the interest of the destitute and which are biased against them, the absence of micro- enterprises and failures in governance. Even though past years have witnessed impressive individual country successes and speedy elimination of poverty globally, SSA countries are yet to tow that path. Growing population and slow speed of poverty elimination makes SSA

the current center of abject poverty (World Bank, 2022; Liu et al.,2020; Beegle & Christiaensen,2019; Bapna,2012). While the number of people living in extreme poverty outside of sub-Saharan Africa fell from 708 million in 2010 to 240 million in 2021, the number in sub-Saharan African countries rose from 417 million to 458 million - an increase in the global share of poverty from 37% in 2010 to 66% in 2021(Global Hub,2021).In addition, Global Hub (2021) discloses that the number of people living in extreme poverty in sub-Saharan African countries significantly rose between 1990 and 2002 and has remained almost level since then. In 2010, 416 million people in SSA countries lived below the extreme poverty line – this was 37% of the global population living in extreme poverty. By 2021, the region witnessed more than 457 million people living in abject poverty. Global Hub (2021) reports that even as poverty reduced in every other region around the universe, extreme poverty in countries in sub-Saharan Africa represented a global share of over 66% of all the people that lived in extreme poverty worldwide. The population of persons living in extreme poverty in 26 countries in sub-Saharan Africa increased between 2010 and 2020 with . Angola having 9.4 million, the Democratic Republic of the Congo having 8.8 million while South Sudan had 7million extreme poor (Global Hub ,2021). Even though the Democratic Republic of the Congo witnessed a decrease in the proportion of its population below the extreme poverty line over the same period, the number of people living in extreme poverty rose by over 8 million because of population growth. Except for Ethiopia, Guinea and Nigeria where extreme poverty declined to 12 million , 3.4 million and 4.5 million respectively during the period, the unequal distribution of economic gains along with population growth led to a steady rise in the number of people living in poverty in other countries, despite general economic expansion(Global Hub ,2021).In the entire sub-Sahara African region, the number of people living in extreme poverty rose from 416,672,141 in 2010 to 457,864,576 in 2021(Global Hub ,2021).

One considers SSA as a region that deserves serious attention for eliminating poverty, The reason is that the population of the indigent in the region has kept on increasing, even when the rate of poverty is falling. Notwithstanding this abnormal situation in SSA, it appears that not much research has been carried out on this topic since the advent of COVID-19 with SSA being used as the focus. In addition, concerning the research on poverty, not much attention has been focused on extreme poverty directly (Oyen (2008). Consequently, this research has been undertaken to fill the gap.

The findings of this study will contribute to literature by assisting policymakers to understand the factors shaping poverty in sub-Saharan Africa. This awareness will empower them to design and implement some effective post-COVID-19 macroeconomics policies for tackling extreme poverty in the region. With poverty eradicated in the SSA countries, it is envisaged that there will be several positive social impacts such as

improved access to food, improved access to education and improved employment opportunities.

The remaining sections of this research have been organized thus: Literature review constitutes the second section. Section 3 contains the methodology. Section 4 highlights the menace of world-wide poverty and the progress being recorded in eradicating it. Section 5 explains the impact of COVID-19 on abject destitution in the Globe. Section 6 describes other issues militating against reducing poverty in the SSA. Section 7 discusses the outlook of abject poverty while Section 8 contains the conclusion, policy implications and direction for further research.

2. Review of Related Literature

2.1 Conceptual review

2.1.1 Concept extreme poverty

Extreme poverty refers to a prolonged real-life experience of being incapable of affording basic meals, inability to send little ones to school, not having basic well-being maintenance and not possessing shelter above one's head (Kamruzzaman,2021). The concept is probable to vary in different social, cultural, economic, and country contexts. Sen and Hulme (2006) posit that abject poverty is found quite often at the base of a communal pyramid frequently described as hardcore poor, ultra-poor, chronically poor, poorest as well as marginalized poor. For Oyen (2008), abject poverty will achieve the smallest on a mixture of variables that express fundamental states for personal life and existence.

2.1.2 International poverty line

International poverty line refers to a monetary threshold below which an individual is deemed to be poor. It is computed by employing the poverty threshold from each country after finding out the worth of the goods required to sustain one adult and converting it into dollars. The universal poverty thresholds were modernized in 2022, given the release of the Purchasing Power Parity (PPP)(World Bank Report,2022).The current abject poverty line has become \$2.13 daily. It succeeds the poverty line of \$1.90 which was anchored on the PPP of 2017 (World Bank Report,2022).

2.1.3 Causes of poverty

Poverty has no single cause or single determinant. Instead, several complex factors drive poverty (Ajakaiye & Adeyeye,2002).Some of its causes are low or negative growth in the economy, macroeconomic policies which are inappropriate, deficiencies in the market place which bring about limited job growth, abysmal productiveness and wages within the informal sector as well as a sluggish movement in development

(Ajakaiye& Adeyeye,2002) World Vision(2023) has this to say concerning the extent of the devastation of extreme poverty in the globe:-

- i) 719 million persons — 9.2% of the Globe’s population — live on less than \$2.15 per day.
- ii) Children and youth constitute two-thirds of the world’s poor, while women represent a majority in most regions of the world.
- iii) Extreme poverty is significantly concentrated in the SSA.
- iv) 24% of the world’s population, which is equal to 1.9 billion persons, live in delicate circumstances, marked by poverty-stricken states and dreadful circumstances.
- iv) By 2030, more than fifty percent of the world’s poor will live in delicate circumstances.
- v) Approximately 63% of people older than 15 that live in abject poverty have no schooling or only some primary education.
- vi) 1.2 billion persons in 111 developing nations live in multidimensional poverty; this accounts for 19% of the world’s population.
- vii) 593 million children are facing multidimensional poverty.
- viii) More than 37 million people lived in poverty in the U.S. in 2021. 11.1 million of them were children.

Table 1 represents the multidimensional poverty - related statistics for selected developing countries as compiled by **UNDP** (2019) cited in Dauda and Oyeleke (2021)

Table 1: Multidimensional poverty - related statistics for selected developing countries

Country	MPI	Population In MPI (%)	Population vulnerable to MPI (%)	Population in severe MPI (%)	Intensity of Depreivation	National Poverty Line	PPP \$1.90 a day
Nigeria	0.291	51.4	16.8	32.3	56.6	46.0	53.5
Thailand	0.003	0.8	7.2	0.1	39.1	8.6	0.0
Libya	0.007	2.0	11.3	0.1	37.1	--	--
Tunisia	0.005	1.3	3.7	0.2	39.7	15.2	0.3
Brazil	0.016	3.8	6.2	0.9	42.5	26.5	4.8
Egypt	0.019	5.2	6.1	0.6	37.6	27.8	1.3
Indonesia	0.028	7.0	9.1	1.2	40.3	10.6	5.7
South Africa	0.025	6.3	12.2	0.9	39.8	55.5	18.9
Morocco	0.085	18.6	13.2	6.5	45.7	4.8	1.0
Ghana	0.138	30.1	22.0	10.4	45.8	23.4	13.3

Source: UNDP (2019 cited in Dauda and Oyeleke, 2021).

2.1.4 Multidimensional Poverty Measure (MPM)

Poverty has no singular definition (Dauda & Oyeleke, 2021). Nevertheless, Cahyat, Gonner & Haug (2007) cited in Dauda and Oyeleke (2021) defines it as a condition under which a person or household finds it

onerous to provide basic needs, does not have the opportunities provided by an enabling environment to improve its wellbeing sustainably or is likely to lose their current living standard. Poverty is often defined and measured from multidimensional, absolute, relative, subjective and social exclusion perspectives (Dauda, 2021). MPM is an indicator of the group of households in a nation that are denied along three aspects of well-being, namely monetary poverty, education, and fundamental services (World Bank Report, 2022). Its computation takes into consideration numerous aspects of humanity over and above monetary poverty. Table 2 contains the indices of MPM. Its purpose is to understand poverty over and above financial dispossessions. MPM got its inspiration from another prominent global multidimensional measure called Multidimensional Poverty Index (MPI). The latter evolved through UNDP and Oxford University. It is argued that measuring poverty from a single aspect like income would fail to disclose the depth of poverty as well as the overlapping nature of people's non-income denials (UNDP, 2016). Consequently, it has been considered expedient by many to view and discuss poverty from a multidimensional perspective. This is the rationale behind the introduction of Multidimensional Poverty Index (Dauda & Oyeleke, 2021). Fig 1 shows the multidimensional poverty flow as provided by Wang and Wang (2016). Both table 2 and figure 1 indicate the procedure for computing MPM.

Fig.1 Poverty measurement flow

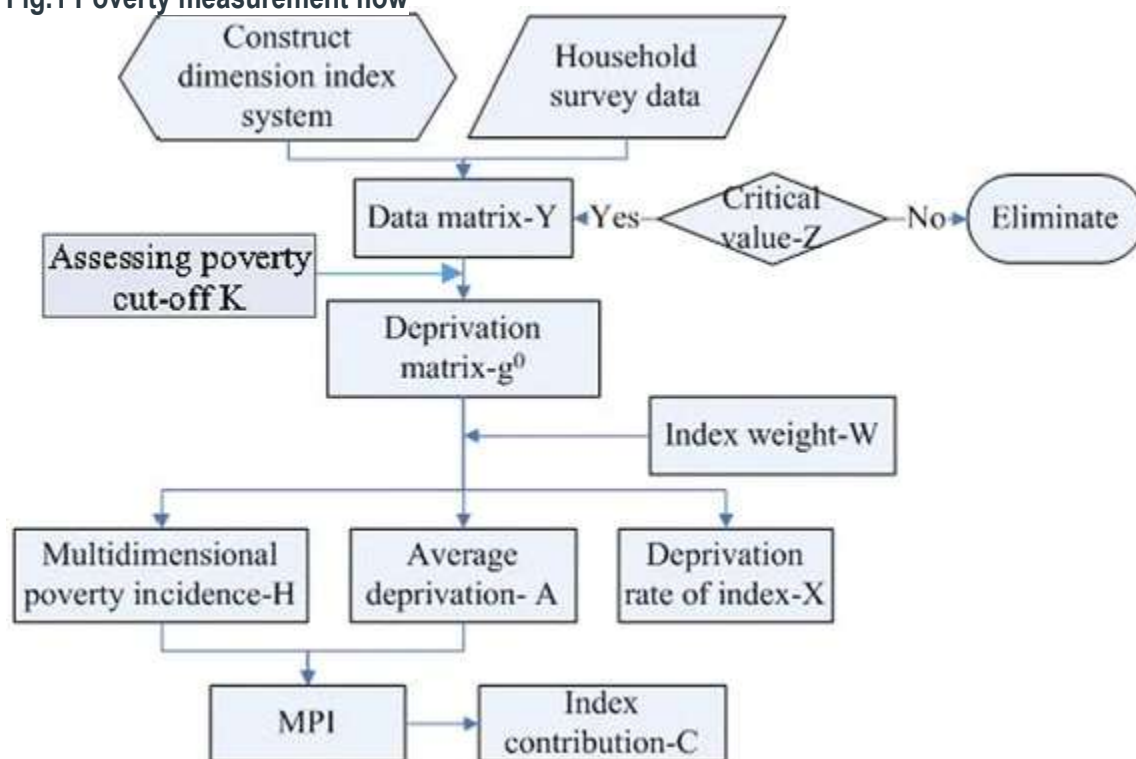


Table2: Measurement indices of multidimensional poverty

Dimension	Indicator	Deprivation cutoff	Weight
Housing (1/4)	House safety	Given brick and concrete structure is not dangerous, the assignment is 0, otherwise 1	¼
Health (1/4)	Members' health	In one household, if there is at least one member under a serious illness, the assignment is 1, otherwise 0	¼
Education (1/4)	Adults' illiteracy	In one household, if there is at least one illiterate adult, the assignment is 1, otherwise 0	1/8
	School-age children' enrollment	In one household, if there is a 6–16 aged child out of school, the assignment is 1, otherwise 0	1/8
Living conditions (1/4)	Drinking water' safety	Given the water from shallow well, deep well, or tap water is safe, assignment 0, otherwise 1	1/24
	Drinking water' availability	If one household can't get sufficient drinking water in a convenient way, the assignment is 1, otherwise 0	1/24
	Sanitary facilities	If one household have a water toilet, the assignment is 0, otherwise 1	1/24
	Electricity access	If one household can use electricity, the assignment is 0, otherwise 1	1/24
	Broadcasting access	If one household can use the broadcasting, the assignment is 0, otherwise 1	1/24
	Fuel type	If one household can only use dirty energy fuel, e.g., firewood, straw, etc., the assignment is 1, otherwise 0	1/24

Source: Wang and Wang (2016)

2.1.5 Challenges to eliminating extreme poverty.

Three major issues militate against eradicating abject poverty. They include the depth of the poverty that continues to exist, the inconsistency in common well-being and the tenacious discrepancies. in the non-income aspects of growth (Cruz, Quillin, & Schellekens,2015).

a. The depth of poverty.

Poverty has remained very high and deep, particularly in SSA. The challenge is that even though poverty census rates provide information concerning the spatial spread of indigence and the degree of progress over time, it fails to make available a sufficient insight concerning significant disparities amid the extremely poor regarding the deepness of poverty.

b. The inconsistency in common well-being

There is an obvious disparity between common well-being in addition to eliminating abject destitution, the

target of common well-being incorporates an essential goal of the World Bank (Cruz et al,2015). However, the occasional and delayed accessibility of family census data makes the appraisal of the global performance on general well-being difficult.

c. The tenacious discrepancies. in the non-income aspects of development.

There are discrepancies in the aspects of the “non-income” growth among the poor and the non-poor. The absolute hardships and inequalities of opportunities in these non-income aspects drive towards transferring poverty from one generation to another and destroying the speed and viability of common well-being.

2.2 Theoretical framework

Different groups of scholars have divergent perspectives concerning poverty (Davis & Sanchez-Martinez (2015). Over time, different schools of thought define poverty in manners that reflect some digressions from the monetary dimension to broader concerns like participation in politics and exclusion from society. Brady (2018) categorizes majority of poverty theories into three families. Davis and Sanchez-Martinez (2015) summarize the economic theories of poverty as the Classical and Neoclassical theories. These theories claim that human beings are ultimately accountable for being poor. The classical theory proposes that the outcomes of the give-and-take going on in the marketplace are efficient. As such, wages paid to individuals perfectly reflect their productivity. Thus, the wrong choices made by individuals may lead them into poverty net. Neoclassical economics recognizes more embracing causes of indigence which surpass the control of individuals (particularly, market failures). Both classical and neoclassical theories lay emphasize much on financial aspects and on the part played by the individual person, as opposed to the group, in creating poverty. They claim that government has a limited role in eradicating poverty.

b. Keynesian/neoliberal theory

This school of thought is more concerned with the forces of macro-economy. The proponents of this theory lay emphasis on the responsibility of government to stabilize the economy and provide public goods. They consider poverty to be mainly involuntary and as created by lack of employment opportunities.

c. Marxian theory This poverty theory considers discrimination among classes and groups as the major causes of indigence. It assigns an essential role to the government in regulating the marketplace.

d. social exclusion and social capital theories

These theories recognize the part played by both social and economic factors in creating poverty. Those factors help in understanding the forerunners of poverty and its persistence over time. This work is anchored

on both the Marxian and Keynesian theories as both propose that government has a significant responsibility in stabilizing the economy, providing public goods, and eradicating poverty.

2.3 Empirical review

Barrientos, Hulme, and Shepherd (2005) sought to determine whether social protection can tackle chronic poverty. They observed that attention regarding social security had moved towards risk and susceptibility. They discovered that just as developments in social security cause indigence directly, they also cause it indirectly through the manner that poor households react to risks. In addition, they noticed that the degree to which social security mediations can address constant indigence is not clear. After discussing these issues, the study concluded that elaborate social security is capable of persistently poor. Deaton (2005) researched measuring indigence in a growing world. Deaton noticed the degree to which development has been a subject of dispute for thirty years. He discovered that, even with better and more reliable data available presently, the controversies have not been resolved. Oyen (2008) strived to find out why indigence was not being focused on. It contended that to eliminate indigence, there must be relevant, reliable, and research-based knowledge. The author considered it paradoxical that three out of the most important models in the research concerning poverty have not focused their attentions on abject poverty directly. Bruton, Ketchen and Ireland (2013) researched on how poverty can be eradicated through entrepreneurship. The authors discovered that the individuals living in penury should not be considered as goods for sale. Rather, comprehending how to assist the poor in creating their own businesses is where the solution lies. They concluded that entrepreneurship among the poor will ultimately bring an enduring solution to their indigence. Hermes (2014) addressed the question on whether the participation of poor individuals in micro-finance can help in minimizing a country's degree of inequality. in income. With the details obtained from seventy developing nations, Hermes established that increased levels of microfinance involvement relate to the reduction of income gap among the rich and the poor. However, it was found that the effects of microfinance in minimizing unevenness in income are not much. Bicaba, et al. (2015) strived to determine the trends and policies regarding the eradication of abject poverty in Africa and the played by international organizations. The authors noticed that eliminating poverty for everybody everywhere universally by the year 2030 was goal number 1 among the Sustainable Development goals of the United Nations. They summarized several articles on eliminating poverty universally and examined the possibility of achieving this target for SSA. They found that, under credible assumptions, abject poverty would not be eradicated in SSA by 2030 but could be reduced to low levels. McCoy (2017) challenged the mainstream narratives that claim satisfactory advancement in the

efforts made to minimize indigence and ameliorate health for all. McCoy argued that the elimination of poverty which is consistent with environmental sustainability will require laying emphasis more explicitly concerning the redistribution of competence and wealth. He opines that the health community in the world has been significantly socialized into believing that advancement and solutions in the future can be secured from more socialistic growth, advancement in technology and philanthropic endeavor. Page and Pande (2018) sought to know why money is not enough to eliminate world-wide penury. The study observed that the proportion of the world community living in abject poverty had dropped by thirty-four per cent. The reason adduced was that such speedy decrease would be continuously difficult to obtain because (i) most of the poor reside in the countries with middle income where the gains arising from development haven been shared discriminatorily and unequally often and(ii) a huge collection of abject poverty continues to be found in low-income nations where development is erratic and monetary assistance often does not extend to the poor. Hanna and Olken(2018) studied anti-poverty programs in less developed nations. They recognized that the first among the seventeen MDGs set by the UN is the elimination of extreme poverty by the year 2030. They observed that, while future growth of the economy might continue to reduce poverty, it would not be able to arrest the issue by itself. In addition, the study noticed the existence of a potentially significant role to be played by national-level transfer programs which help poor families in developing nations and that those kinds of programs are often run by developing country governments. Jafino, et al. (2020) reviewed the estimates of the effects of climate change on indigence by 2030. Thousands of storylines were employed to make available the update. The study established that the estimate the population of the persons entering destitution because of climate change was more than thirty-two million in most scenarios. Health effects were found to be responsible for the greater aspect while health effects, natural disasters, and food prices were critical in South Asia. Hotez, et al. (2021) examined the recent COVID-19 poor as well as the resurrection of the abandoned tropical illnesses. They noticed that over one hundred million people were pushed back to abject poverty due to COVID-19. Kamruzzaman (2021) strived to comprehend the meaning of extreme poverty having the poor in Bangladesh in perspective. The study discovered that, from the perspective of Bangladesh, comparing the experiences of the adjudged poor and the present definition of based on dollar-based definition of extreme poverty appears to show varying images. It noticed that should the perceptions of the poor differ significantly from the current yardstick, poverty elimination in the world development enterprise might turn into a mere statistical achievement. The study concluded that reducing poverty can be achieved by stimulating the growth of the economy to beef up incomes and increase employment opportunities for poor people Ayoo (2022) considers the presence of abject poverty in many developing

nations as an important issue that needs to be tackled urgently because of its negative implications on human well-being. Ayoo asserts that poverty eradication can be achieved by stimulating economic growth.

3. Methodology

This research aligns with Parker (1997) and Peace (2021) in employing historical research design. The data for it was sourced from several documents and synthesized. Previous occurrences were employed to arrive at conclusions and make forecasts concerning the future. The reason for employing the historical research approach was to enable one to obtain every factual basis for answering the research questions (Snyder, 2019). Clear and systematic approaches were used while reviewing the related articles so as to avoid bias. Also, the essence was to obtain the results which are reliable enough for making valid conclusions (Moher, et al., 2010).

4. The level of extreme poverty and the progress being made in eradicating it.

Despite all the efforts put in by international agencies to eliminate extreme poverty, it became more widespread in several countries in the past ten years more than before (OECD,2022). This made poverty eradication the major departmental issue in the 21st century. By 2015, 189 countries participated in the Millenium Declaration to eliminate extreme poverty. At least 25 international agencies and non-governmental organizations were involved in making frantic attempts to bring poverty to an end (Human Rights Career,2022). World Bank Report (2022) asserts that indigence has been on the decline globally. However, the rate of its decline was reduced by the economic impacts of COVI-19 pandemic which was reported to have dragged no less than 100 million persons into abject poverty Human Right Careers (2022) affirms that World Social Summit considered poverty eradication as an imperative of humanity and urged public authorities of nations to tackle the fundamental causes of poverty, provide the fundamental requirements of everybody and make sure that the indigent have access to productive assets like credit, education and training. In recognition of insufficient advancement in alleviating poverty, it was decided in the 24th special session of the General Assembly to have a second look at the Copenhagen Commitments. The General Assembly resolved to set up targets to cut down the percentage of humans living in abject poverty by fifty percent in 22015. This target was endorsed by the Summit as MDG 1. The Second UN Decade for the Eradication of Poverty(2008-2017) proclaimed by the General Assembly in December 2007, was intended to support a broad framework for poverty eradication. It put much emphasis on the necessity to strengthen the role of the UN as a leader in encouraging international cooperation for development, critical for the eradication of poverty (Human Right Careers (2022)).

Progress recorded globally in eradicating extreme poverty.

The focus of SDG target has been to eliminate extreme poverty by 2030. In 2015 when the SDGs were adopted, the target appeared ambitious but within reach. As the global population increased, the people in extreme poverty reduced (World Bank Report,2022). World Bank Report (2022) discloses that the world population rose 5.3 to 7.5 billion between 1993 and 2017. However, during the same period, the population of the people living in extreme poverty dropped from 1.9 billion to 68 million. However, there was unequal spread of poverty among the nations and regions.

From the early 1990s, abject poverty prevailed globally more than 30 percent. However, this thirty percent average covered great differences among the countries. For instance, some of them in Europe and North America had virtually no record of extreme poverty while several countries in SSA, East Asia and South Asia had extreme poverty rates of more than 70 percent. Out of 1.2 billion persons that did not suffer extreme poverty between 1993 and 2017, eighty percent of them were in China and India. China reduced its abject poverty rate from 57 percent in 1993 to lower than 1 percent in the most recent year that household survey was carried out. India reduced its extreme poverty rate by fifty percent between 1993 and 2011. Its 2017 extreme poverty rate was expected to be slightly above the global average 9.2 percent. Since 2011, World Bank Report (2022) indicates that the decrease in extreme poverty since 1993 –from 1.9 billion to 689 million- persons in 27 years- remained a very great achievement. World Bank Report(2022) discloses that more than 136 million persons were living below the international poverty line in 2015. Approximately ten percent of the global population (pre-pandemic) was living in abject poverty and striving to acquire the most basic necessities like health, education, etc. For everyone hundred men of the same age group, one hundred and twenty two women aged between twenty five and thirty four would be expected to live in penury, while over 160 million children would be at risk of continuing to be trapped in abject poverty by 2030. The report added that Southern Asia and SSA were expected to notice the largest boost in indigence. They would have an additional thirty-two million and twenty-six million persons respectively living below the international poverty line due to COVID-19. According to World Bank Report (2022), the proportion of the universe living in abject poverty went down by fifty percent in the previous decade. It dropped from 14.3 percent in 2010 to 7.1 percent in 2019. In 2016, 55 percent of the global population- approximately four billion persons- did not benefit from any form of social security. From 2015 to 2018, global destitution continued its historical decline. The global poverty rate plummeted from 10.1 percent in 2015 to 8.6 percent in 2018. Owing to the menace of COVID-19, the global poverty rate rose sharply from 8.3 percent in 2019 to 9.2 percent in 2020.

Extreme poverty in SSA



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In SSA, abject poverty declined (World Bank, 2022). It decreased from approximately sixty percent in 1993 to about forty percent in 2017. However, because of speedy population growth, the number of persons living in penury moved up from 335 million to 431 million. The highest number of the extremely poor are centralized in SSA (World Bank Report, 2022). This concentration of penury has drifted from Asia to Africa. At present, astronomical population growth coupled with stubbornly high abject poverty rates in SSA has become the dominant force determining global poverty (World Bank Report, 2022). In SSA, the number of persons trapped in extreme poverty has risen. World Bank reports that eight among the ten nations having the highest number of the extremely poor are in SSA. The countries include Nigeria, Democratic Republic of Congo, Ethiopia, Tanzania, Madagascar, Mozambique, Kenya, and Uganda.

5. Impact of COVID-19 on extreme poverty in the universe

No one can say with certainty to what degree COVID-19 has affected extreme poverty in the entire universe (Kharas, 2020). Kharas explains that the data on poverty are usually obtained from the surveys of households. Consequently, for obvious reasons, it is impossible to conduct proper surveys under current conditions in several countries. That notwithstanding it is common knowledge that economic growth is the strongest driver of destitution. ((Kharas, 2020). For this indicator, the IMF has just produced recent estimates in respect of 2020 and beyond. One can make inferences with regard to the effect of COVID-19 on poverty. Before the advent of COVID-19, baseline estimates had submitted that six percent of the world population might still be trapped in extreme poverty in 2030. This would entail failing to achieve the goal of eliminating destitution. All over the world, there was a widespread rise in extreme poverty from 2020 (see table 3). From the time COVID-19 manifested in November 2019, its spread has been enormous and deadly to the extent that by 2nd May 2020 more than 3 million cases were confirmed in the entire universe with approximately 229,971 deaths (Ijaiya, et al., 2020). African had 40,848 confirmed cases and roughly 1693 deaths (see Table 1).

Table 3: Selected Global Cases of COVID-19 May 2nd, 2020

Country	Confirmed Cases	Cases of Deaths	Cases of Recovery
Global	3267184	229971	n.a.
Africa	40848	1693	13391
Asia	n.a	n.a	n.a
Europe	n.a	n.a	n.a

China	1067127	57406	n.a
America (USA)			
Nigeria	2170	68	15759
Ghana	2074	17	113497
Cameroon	2069	61	934
Niger	728	33	478
Cote d'Ivoire	1333	15	597
Egypt	5895	406	1460
Algeria	4154	453	1821
Morocco	4567	171	1083

Sources: AfCDC, 2020, WHO, 2020 cited in Ijaiya, et al..(2020)

For Nigeria alone, Ijaiya, et al..(2020) reports that as of 2nd May 2020, the number of confirmed cases of COVID-19 was approximately 2170, with 68 deaths and 934 recoveries recorded (see Table 4).

Table 4:
Cases of COVID-19 in Nigeria at 2nd May 2020

State	No. of Confirmed Cases	No. of Recovery Cases	No. of Deaths
Lagos	1016	225	28
Kano	311	0	3
FCT	214	36	3
Gombe	92	0	0
Bauchi	48	6	0
Sokoto	41	1	7
Borno	69	0	0
Edo	47	10	3
Rivers	14	2	2
Ogun	56	8	1
Ekiti	11	2	1
Akwa Ibom	16	10	2
Bayelsa	5	0	0
Kaduna	35	6	1
Oyo	29	9	2
Delta	17	4	2
Nasarawa	7	0	0
Ondo	13	3	0
Kebbi	2	0	0
Kwara	14	2	0
Kastina	41	6	2
Osun	34	18	3
Zamfara	9	0	1
Taraba	8	0	0
Jigawa	7	0	1
Yobe	4	0	0

Enugu	4	2	0
Adamawa	4	0	0
Niger	3	0	0
Ebonyi	3	0	0
Imo	2	0	0
Abia	2	0	0
Plateau	1	0	0
Benue	1	0	0

For the first time in twenty years the global portion of workers that live with their families below the international poverty line moved up from 6.7 percent in 2019 to 7.2 per cent in 2020. This was occasioned by the COVID-19 menace which remains (Mahler, Yonzan, Lakner, Aguilar & Wu, 2021). Mahler, et al. (2021) affirms that the COVID-19 induced poor in the year 2021 has continued to remain at 97 million persons. United Nations (2022) reports that, generally, the action to achieve the SDGs is not yet progressing at the speed or scale required by 2030. United Nations (2022) observes that prior to the COVID-19 issue, reasonable advancement was being made in eliminating poverty in several nations within Eastern and Southeastern Asia.

The COVID-19 pandemic was feared to be capable of moving between 88 million to 115 million persons into abject poverty in 2020. There was likely to be a total increase of this to as many as 150 million by 2021, depending on the severity of the contraction of the economy. As a result of the menace of COVID-19 palaver, the world-wide poverty rate rose speedily from 8.3 per cent in 2019 to 9.2 per cent in 2020. This represented the initial rise in extreme poverty since 1990 and a set-back of poverty reduction by approximately three years. United Nations (2022) contends that the effect of COVID-19 issue reversed the steady progress of poverty decrease over the past 25 years. The rising inflation and the effect of the war in Ukraine are reported to have further worsened the situation. The United Nations (2022)'s forecast was that these combined crises would drag an additional 75 to 95 million persons into extreme poverty in 2022. The problem emanating from COVID-19 had threatened to push more than 70 million persons into penury.

Intervention by World Bank Group

As soon as COVID-19 set in, the World Bank Group took broad and quick steps to assist developing nations in strengthening their pandemic response (World Bank (2022)). They supported the interventions of public health by striving to ensure that key supplies and equipment flow perfectly, assisting the private sector to continue to function properly as sustaining jobs. They deployed no less than \$160 billion as financial assistance for more than fifteen months to empower more than 100 nations to protect the poor and

vulnerable. According to World Bank (2022), this included \$50 billion as grants and very concessional loans to the poor.

6. Other issues militating against poverty alleviation in the SSA

6.1 Climate change

Climate change is an important issue that militates against poverty reduction. It pushes up food insecurity, poverty as well as displacement. In SSA, insecurity of food rises by between 5 and 10 percent with each flood or drought. According to World Meteorological Organization (WMO), the complicated impact of protracted conflicts, political instability, climate variability, pest outbreaks and economic crises, worsened by costs of adjusting to climate change to avoid even higher costs of additional disaster relief, were estimated by WMO at US\$ 30–50 billion each year in the coming decade.

Efforts by philanthropic organizations to end poverty in SSA.

SSA has countries that possess different geographies, histories, cultures, and needs. The issues they face range from unaffordable health care to regional conflict. Those issues have left many inhabitants of SSA in poverty. Philanthropic organizations have tasked themselves to remedy the several challenges affecting sub-Saharan Africa (Portner2022). Numerous charitable entities work on tackling poverty in SSA. Prominent among them are three bodies that have demonstrated that a single universal approach exists for tackling poverty in SSA, namely Nanmo, Efficiency for Access and Zoetis (Portner2022). Nanmo is a partnership formed by Bill and Melinda Gates Foundation and the Qatar Fund for Development in Africa. It has the objective of providing adaptive ways for local farmers, especially women, for responding to climate-related difficulties. Nanmo gives agrarian communities innovative technologies which can support their routes to food security. In SSA, over 600 million persons are not connected to the grid of their country. Efficiency for Access is a coalition coordinated by CLASP and Energy Saving Trust, works to bring life-changing, clean-energy appliances to vulnerable communities. It is concerned with closing the gap between those persons that are on and off the energy grid in the SSA. This is expected to bring about some improvement in agricultural productivity and thus poverty alleviation. In addition to agricultural appliances like solar water pumps. This non-governmental organization also supplies products like solar-powered refrigerators, electric pressure cookers and fans. Zoetis provides veterinary assistance to the livestock of farmers. Sub-Saharan Africa possesses a large livestock population. Even though Africa has large livestock population, it has the lowest degree of productivity per animal among other regions. Zoetis improves the health of livestock through its

ALPHA Initiative. This program provides accessible veterinary services to farmers throughout the SSA region. By supplying inoculations and medical training to communities in SSA, the ALPHA has boon for food security in SSA. Zoetis's activity in this region has enabled African communities to produce safer food while reducing the economic problem of raising livestock.

6.2 Civil Conflicts

Escalation of civil conflict is a significant issue that influences poverty movements in SSA. The statistics of conflicts went up from 6 in 1980 to 10 in 1999. In 1999 alone, at least 15 countries experienced vigorous armed dispute in SSA. Almost all of them were internationalized including state actors (whether directly or through proxies), the transnational activities of brutal Islamist groups, other armed groups, and criminal networks. One of the brutal conflicts that enhance extreme poverty in SSA is the Russia-Ukraine war. Russia is an important supplier of fertilizer. The conflict between Russia and Ukraine affects the cost incurred in exporting fertilizer from Russia. As SSA depends on fertilizer importation from Russia, it buys them bought at very huge amounts and, consequently, their usage in the region is low. Because of low quantity usage of fertilizers, poor soil quality and the absence of advanced technology, crop yields are reduced, and incomes are low in the SSA countries. Hence, the Russia-Ukraine war increases turmoil in SSA (Pinto, 2022).

7. The future prospect of extreme poverty eradication

The projections made that destitution would be eradicated by 2030 is not likely to materialize. Prior to the advent of COVID -19, the global poverty rate was expected to continue to fall to around 8 percent in January 2020. Under more pessimistic assumptions, over 100 million persons are feared to have entered abject poverty. The World Bank advises that even though predicting how poverty would trend in any country is impossible, abject poverty is likely to continue existing in several nations even beyond 2030 unless dramatic accelerations are made to reduce poverty. While most of the extreme poverty rates rise in some countries, SSA has the largest share -five out of seven. These include some of the poorest countries in the globe like Madagascar, Angola, and Liberia. For the nations in SSA, extreme poverty is likely to be eradicated in 2040. The current trends show that abject poverty is likely to linger for decades in some countries.

8. Conclusion, policy implications, limitation, and direction for further research

This study investigated the level of extreme poverty in the globe *viz-a viz* the Sustainable Development Goal1 with particular focus on sub-Sahara Africa. It provided stylized facts on the variables, reviewed relevant

literature, and identified the major causes of extreme poverty in the SSA. It concludes that with the current levels of poverty in the sub-Saharan African countries, achieving sustainable development will remain a fantasy. To achieve the eradication of extreme poverty in sub-Saharan Africa, the study makes the following recommendations to relevant policy-makers: -

Policy Implications

1. The economies of the countries in sub-Saharan Africa should be transformed structurally from being primary-product dominated ones to industrial and service-oriented economies (Dauda & Oyeleke, 2021).
2. National and regional strategies in Sub-Saharan Africa should be targeted at some growth which is strong, inclusive, resilient to shocks and of better and higher quality. This will enable them to succeed in reducing poverty substantially.
3. Efforts should be resumed to regularly improve on and update poverty and integrated data.
4. Poverty curtailment strategies should continue to be employed, most particularly in the poverty-stricken nations as well as the places of residence of the very poor persons.
5. International agencies should play a more important role in encouraging the coordination of policies aimed at eliminating poverty globally.
6. Governments of developed countries and international agencies should be more active in bringing the perspectives of SSA into universal economic debates on those matters that affect continuous development on the continent.
7. To tackle abject poverty, policymakers in SSA and development partners should anticipate drivers of change in the long term.
8. It is advisable for SSA countries to adapt to climate change and integrate responses to it.
9. SSA countries should extend their poverty elimination agenda beyond the MDGs; the focus should be on wealth creation and prosperity as well as inequality reduction.
10. Policymakers should stimulate economic growth to increase incomes and expand employment opportunities for the extreme poor. They should undertake economic and institutional reforms to increase efficiency and ameliorate the use of resources. In addition, policy makers in the SSA countries should prioritize the basic needs of the poor while making national development policies.

Limitation of the study and directions for further research

Study is limited by the method used. Further study may decide to employ other alternative methodologies that run regression with historical data.

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TAX AS A STIMULUS FOR ECONOMIC GROWTH AND DEVELOPMENT IN NIGERIA

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Abstract

The study examined the role tax plays in stimulating Nigeria's economic growth and development by analysing the relationship between specific taxes -Company Income Tax (CIT), Petroleum Profits Tax (PPT), Value Added Tax (VAT)- and economic growth and development (proxied by Gross Domestic Product (GDP). Adopting longitudinal research design, Ordinary least squares multiple regression was deployed for analysis. The various years in the CBN statistical bulletin 2020 from 1982-2020 (a period of 39 years) made up the population while the sample used in the study consisted of 28 years from 1993-2020. The study extracted data on GDP from the CBN statistical bulletin 2020 while data on taxes was collected from the published FIRS tax statistics report. The study revealed that taxes do affect economic growth and development in Nigeria, albeit to varying degrees and significance, with the CIT affecting economic growth the most and the PPT having the least effect. The study concluded that taxes contribute about 90% to economic growth and development and should be a focal point in improving the nations GDP and thus recommended restructuring of the petroleum sector, increasing the tax base by creating jobs and ensuring tax collection transparency towards strengthening the tax system for economic growth and development.

Keywords: tax, economic growth and development, tax system

1. Introduction

Tax is a mandatory payment or levy that is payable to the government by economic units and subjects (individuals and organizations) based on predetermined criteria for which the taxpayer receives or is anticipated to receive no direct or specific benefit (Basseyy, 2013; Appah, 2004). Taxation is a significant source of government revenue that helps meet government expenditure by stimulating internal resources and aids in wealth reallocation for economic management (Azubike, 2009; Bhartia, 2009). Emmanuel (2010) asserts that it has been demonstrated through the experiences of economies around the world that the development of a nation's tax system is instrumental to its development, which leads to the implementation of tax reforms and reorganization to ensure tax systems that maximize government revenue (Kizito, 2014). Company Income Tax (CIT), Value Added Tax (VAT) and Import Duties have been used in various countries including Canada, United States, Netherlands, and United Kingdom to create prosperity (Adegbie, 2010). However, in Nigeria, tax revenue has continued to fall short of governments' expectations which has led to various strategies towards expanding the non-oil tax revenue (Eguaghide & Samuel, 2007). Although Ariyo (1998) documented an acceptable level of tax system productivity prior to the oil boom (i.e. before the 1970s). Also, Eguaghide and Samuel (2007) established that the role tax revenue played in promoting economic

activities and growth in the country diminished between 1970s and 2000s. Considering the foregoing, the role taxes play in economic growth and development was investigated.

The study thus investigated if taxes have stimulated Nigeria's economic growth and development with specific focus on PPT, CIT, and VAT from 1993 to 2020 (a period of 28 years). As a result, the study was concerned with providing answering the following research questions towards achieving its aim:

- i. Does Petroleum Profit Tax affect Nigeria's economic growth and development?
- ii. Has Company Income Tax contributed to Nigeria's economic growth and development?
- iii. What effect does Value Added Tax on Nigeria's economic growth and development?
- iv. What is the combined effect of tax revenues from PPT, CIT and VAT have on Nigeria's' economic growth and development?

The hypotheses tested were:

H0₁: Petroleum profits tax has no significant effect on Nigeria's economic growth and development.

H0₂: Company Income Tax has no significant effect on Nigeria's economic growth and development.

H0₃: Value Added Tax has no significant effect on Nigeria's economic growth and development.

H0₄: The combined tax revenue streams from CIT, PPT, and VAT have no significant effect on Nigeria's economic growth and development.

2. Literature Review

2.1 Conceptual Framework

2.1.1 Tax, Taxation and Tax Revenue

Tax is an unavoidable charge paid by both corporate bodies and individuals to the government of a nation to enable it to provide basic amenities for its citizenry (Appah & Oyadonghan, 2011). As an unavoidable charge on the income, capital, and consumption, it is a significant source of government revenue, allowing it to meet its duty of ensuring citizens well-being (Aguolu, 2004). These taxes are levied on personal income; company's profits; petroleum profits and capital gains etc. Adams (2001) asserts that taxation -the science of imposing taxes- is an important source of modern governments revenue (providing up to 90% or more) and while the government has several choices for revenue generation, tax revenue remains the primary source (Soyode & Kajola, 2006).

2.1.2 Economic Growth and Development

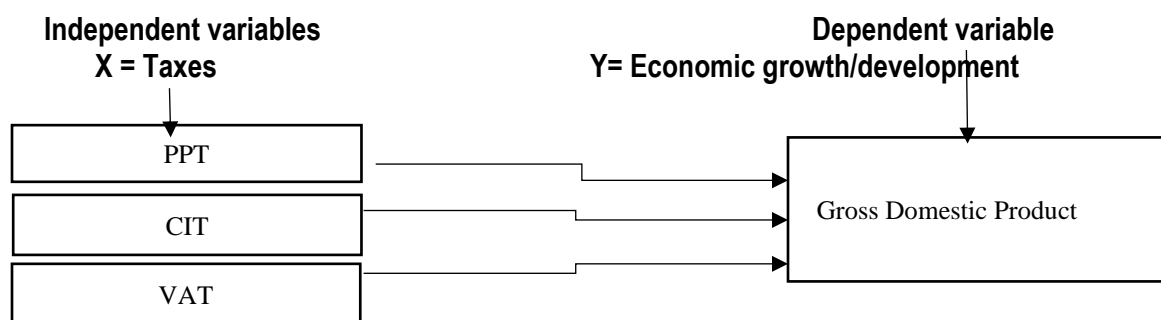
Growth is increased economic activity (Bhartia, 2009) while economic growth is increase in long-term capacity of a country to supply increasingly varied economic products based on advancing technology,

institutional and ideological changes (Anyanwu, 1997). Economic growth measured by Gross Domestic Product (GDP) is extent to which the economy's output (goods and services) increases (Ironkwe & Agu, 2019) while economic development is the process by which a country's Gross National Product (GNP) per capita increases over a long period of time both qualitatively and quantitatively (Harelimana, 2018). GDP is the entire monetary value of production by a country's residents irrespective of origin (Okwu, Oseni, Aberu & Obiakor, 2017; International Monetary Fund (IMF), 2020). It is a crucial indicator for comparing economic growth rates and is used to determine an economy's strength (Jhingan, 1989; World Bank, 2016).

Economic development is sustained economic growth over time with changes in technical and institutional arrangements to improve production (Satope & Akanbi, 2014) and aims to allow local communities develop new methods of production that may lead to exportation. Using GDP as a measure of both economic growth and development, Ogonna and Appah (2012) concluded that the amount of government revenue available for establishment of infrastructure and basic amenities in a nation relies on tax revenue of which a well-structured tax system is key.

2.1.3 Conceptual Model

Figure 2.1: Conceptual model depicting relationship among variables.



Source: Author's conceptualization (2022)

2.2 Theoretical Framework

2.2.1 Socio-political theory

This tax revenue theory advocates a tax system aimed at curing societal ills and thus focuses on social and political objectives for determination of taxes (Bhartia, 2009) since society is greater than the sum of its individual members who make it up; thus, the tax system should be aimed at the society (Chigbu, Akujuobi & Appah 2012). Adolph Wagner, a German economist, advocated in Wagner (1890) that decision on taxes should consider social and political objectives to ensure a societal rather than an individualist approach is

utilized in finding an appropriate solution. The theory is used because it allows for the consideration of various types of taxes as a means of ensuring economic growth and development.

2.2.2 Benefit received theory.

The drawbacks of the cost-of-service theory gave rise to the Benefit Received Theory which was transformed from the cost-of-service theory and founded on the premise that taxable people and the state have a swapping link. The state provides society with infrastructure and amenities, which taxpayers must pay for regardless of the number of benefits received (Bhartia, 2009). This study was anchored on the theory because taxpayers demand prudent and transparent use of taxes paid for infrastructure, social and health services, while the state retains the right to tax policies determination.

2.3 Empirical Review

Adereti, Adesina, and Sanni (2011) discovered a highly positive correlation between VAT revenue and GDP using secondary data gathered from the Central Bank of Nigeria (CBN) from 1994 to 2008 and analyzed using simple regression and descriptive statistics. Adegbe and Fakile (2011) using chi-square and multiple linear regression analysis discovered a significant relationship between CIT revenue and Nigeria's economic growth. The study also found tax evasion and avoidance to be significant impediments to tax revenue generation, though the extent of their impediment was not investigated.

Ogbonna and Ebimobwei (2012) employed descriptive statistics and econometric analysis discovered that tax reforms have positively significant relationship to economic growth and improve the government's revenue-generating ability. The study also highlighted the importance of ongoing tax reforms, as stringent tax policies were found to lead to decreased tax revenue. Jibrin, Ejura, and Ifurueze (2012) used ordinary least square (OLS) regression discovered that PPT has a statistically significant positive impact on the nation's GDP from 2000 to 2010. Ogbonna and Appah (2012) using primary and secondary data analysed with OLS regression and descriptive statistics discovered that petroleum revenue has positive impact on Nigeria's GDP and per capita income from 1970-2009.

Abdul - Rahomoh, Taiwo, and Adejare (2013) used secondary data to empirically analyze effect of PPT on the Nigerian economy from 1970 to 2010. Using multiple regression to analyze GDP, PPT, inflation, and exchange rate data, it was discovered that investigated variables had significant effect on economic growth. This also aligns with Jibrin, Ejura, and Ifurueze (2012), who suggest that Nigeria's abundant petroleum provides a chance for more tax income generation to the economy with effective and efficient PPT

administration and collection. Acti and Abigail (2014) investigated Nigerian tax system and economic growth using time series data. Using regression analysis, the study found a linear relationship between economic growth and taxes, and also a higher contribution to the economy from indirect taxes in relation to direct taxes. Ojong, Anthony and Arikpo (2016) found a statistically significant positive relationship between PPT, Non-oil Revenue, CIT, and economic growth (GDP). They also indicated that lack of transparency is a key barrier to tax compliance. Popoola, Jimoh and Oladipo (2017) used time series data from 1986 to 2015 to study the relationship between tax revenue and Nigerian economic growth over a three-decade period. The study found a strong positive correlation between oil and non-oil tax revenue and Real GDP using OLS regression, though there exists significant difference between the effects of oil and non-oil tax revenue. The study posits that increasing government officials' accountability and transparency in tax revenue management in Nigeria would boost economic growth.

Focusing on years 1981 to 2016, Khumbuzile and Khobai (2018) evaluated the impact of taxation on economic growth in South Africa. The results of the Auto-Regressive Distribution Lag (ARDL) technique reveal a negative relationship between taxes and economic growth in South Africa. Okwara and Amori (2017) calculated economic development using GDP, while tax revenue was calculated using VAT and non-oil income (tax) and found that taxes had a significant positive impact on GDP, though VAT had an insignificant negative effect during the review period (1994 to 2015). The study suggested that an expansion of government revenue sources to include other sectors of the economy such as agriculture.

Ukpabi (2019) investigated effect of indirect taxes on Nigeria's economic development. Using time series data from 1981 to 2018, OLS regression analysis showed a strong long-run and short-run relationship between indirect taxation and economic growth. Ionkwe and Agu (2019) found similar results when studying the relationship between total tax revenue and Nigeria's economic growth using time series data from 1986 to 2016. In contrast, Iorpev, Azende and Matthew (2019) found that individual tax components in Nigeria have insignificant influence on economic development while total tax revenue has a significant impact, using time series data from 2002 to 2017.

According to Osho and Efuntade (2019), all other forms of taxes had insignificant effect on economic growth except VAT with significant positive effect, while the overall relationship showed a significant effect of tax revenue on Nigeria's economic growth. Azubike and Onukwube (2019) examined the effect of tax revenue using time series data (years 2002 to 2016) and found that tax revenue had a significant impact on Nigeria's economic growth.

Samuel, Adewole and Idih (2019) investigated the effects of tax revenue on Nigeria's economic development from 2003 to 2013. Using simple linear regression analysis on available time series data, tax revenue had negligible positive impact on the Nigerian economy. From 2000 to 2017, Oshiobugie and Akpokerere (2019) investigated economic development as it was influenced by PIT and CIT. The findings of an ex-post facto research using the OLS regression framework revealed that tax revenue components had insignificant negative impact on economic growth.

Regardless of the number of papers reviewed, the problem of tax revenue and administration, as well as the country's economic growth, cannot be overlooked. As a result, the study contributes to existing literature on taxes, tax revenue and economic growth and development by focusing on three major but diverse taxes (CIT, PPT and VAT) in the country in relation to economic growth and development.

3. Methodology

3.1 Research Design

Longitudinal research design using time-series data was employed since the study is focused on various variables over a period. Secondary data relating to the independent variables of CIT, PPT and VAT revenue and dependent variable of GDP at the current price collected from CBN 2020 Statistical Bulletin and Federal Inland Revenue Service (FIRS) Tax Statistics Report was available for 39 years (1982-2020). The data used is publicly available and published by the apex bank of the country which ensures its validity and credibility. Ogbonna and Appah (2012); Acti and Abigail (2014); Udoka and Chiedu (2018) are similar previous studies which made use of same type of data. Data relating to these variables were however collected for the years 1993-2020, a 28-year period which served as the sample derived using the Taro Yamane Formula. The sampling technique used is consecutive sampling method where selection of every subject meeting criterion of inclusion is done until completion of required sample size. Thus, the sample began from the latest year in the bulletin up till the required 28 years was achieved.

The study employed the multiple regression model using the OLS technique with the following model:

$$\text{Economic growth/development} = f(\text{taxation}) + \mu$$

where:

Economic growth/development = GDP (Dependent Variable)

Taxation (Independent variable) = PPT, CIT, VAT

μ = Error term

$$\text{GDP} = f(\text{PPT, CIT, VAT}) \dots\dots\dots (1)$$

$$\text{GDP} = \alpha + \beta_1\text{PPT} + \beta_2\text{CIT} + \beta_3\text{VAT} + \mu \dots\dots\dots (2)$$

The variables are taken to the same base through logarithmic transformation of equation 2, hence the model becomes:

$$\text{Log (GDP)} = \alpha + \beta_1 \log (\text{PPT}) + \beta_2 \log (\text{CIT}) + \beta_3 \log (\text{VAT}) + \mu$$

where:

α = Intercept

$\beta_1, \beta_2, \beta_3$ = Coefficient of parameters of taxation

μ = Stochastic error term

A priori = $\alpha > 0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0$

μ = Error term (Stochastic Term).

4. Data Presentation and Analysis

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
LOGCIT	28	.9800	3.2054	2.3073	.7160
LOGPPT	28	1.6314	3.5053	2.8256	.6322
LOGVAT	27	.0000	3.1850	2.2574	.7670
LOGGDP	28	3.1000	5.1882	4.3519	.6352
Valid N (listwise)	27				

Source: IBM SPSS v26 Output (2022) Dependent Variable: LOGGDP Independent Variables: LOGCIT, LOGPPT, LOGVAT

As shown in table 4.1, after logarithmic transformation of all variables, the mean of the dependent variable (GDP) is computed as 4.3519 and the independent variables of CIT, PPT, and VAT had means of 2.3073, 2.8256, and 2.2574 respectively. Standard deviation of the variables CIT, PPT, VAT and GDP were .7160, .6322, .7670 and .6352 respectively. The mean of all variables considered is above average and closer to the maximum value of the variable while standard deviation of all the variables falls within 1 standard deviation of the mean (positive) i.e. the data falls within +1 variation of the mean.

Table 4.2: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1 (Constant)	2.306	.056		40.907	.000		
LOGCIT	.714	.061	.805	11.660	.000	.065	15.503
LOGPPT	.027	.040	.027	.667	.511	.192	5.195
LOGVAT	.143	.055	.172	2.611	.015	.070	14.186

According to Table 4.2, LOGCIT has a significant impact on LOGGDP ($B=.714, \alpha < 0.05$). As a result, it is determined that CIT significantly affects GDP positively because every 1% increase in CIT translates to a 0.491% increase in economic growth and development. LOGPPT has an insignificant positive effect on

LOGGDP ($B = .027$, $\alpha > 0.05$). Thus, it is determined that PPT has a negligible positive impact on the economy because every 1% rise in PPT results in a 2.7% increase in GDP. LOGVAT also has significant positive impact on LOGGDP ($B = 0.143$, $\alpha < 0.05$).

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.996 ^a	.993	.992	.0578818	1.005

Source: IBM SPSS v26 Output (2022) a. Predictors: (Constant), LOGVAT, LOGPPT, LOGCIT b. Dependent Variable: LOGGDP

The combined effect of the predictors (CIT, PPT and VAT) on the dependent variable (GDP) as shown in table 4.3 is 99.3% while which reduces to 99.2% when adjusted to real-life situation (Adjusted R square). Thus, the combination of independent variables (CIT, PPT and VAT) influences the dependent variable of GDP by 99.2%. The research question four is answered thus: CIT, PPT and VAT have combined effect of 99.2% on Nigeria's economic growth and development.

Table 4.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.813	3	3.604	1075.777	.000 ^b
	Residual	.080	24	.003		
	Total	10.893	27			

Source: IBM SPSS v26 Output (2022): Dependent Variable: LOGGDP; b. Predictors: (Constant), LOGVAT, LOGPPT, LOGCIT; Significant at 0.05 level $\alpha < .05$

The combined significance of the predictors' impact on the dependent variable as revealed by table 4.4 is significant ($\alpha < 0.05$). Null hypothesis 4 is thus rejected because combined revenue streams of the taxes used have a significant effect on Nigeria's economic growth.

5. Summary of Findings

The independent variables were found to have significant positive effect on the dependent variable, both collectively (for all) and individually for CIT and VAT. Regardless of the overall relationship and impact, the PPT effect on GDP is not significant ($\alpha > 0.05$) but positive ($B = .027$). This could be attributed to the global decline in crude oil prices over the last decade, as well as the Organization of Petroleum Exporting Countries (OPEC) specific quota of crude oil sales which has an impact on taxable profits of the petroleum industry. This is like Uket, Wasiu and Etim (2020) findings though their study posited a slightly positive impact of PPT

on GDP prices while using up to 2018 data. The inclusion of 2020 data in this study brought about results in a smaller positive impact which could probably be attributed to the Covid-19 Pandemic causing further unexpected shock in the oil prices.

The positive and significant impact of CIT ($B=0.714$, $\alpha < 0.05$) as well as VAT ($B=0.143$, $\alpha < 0.05$) on GDP is in line with Adigwe, Oyadonghan and Kereotu (2020); Uket, Wasiu and Etim (2020); Ojong, Anthony and Arikpo (2016); Herbert, Nwarogu and Nwabueze (2018). Also, collectively these taxes account for 99.2% (Adjusted R square) of variation in economic growth and development while 0.8% variation is due to factors not discussed in the study.

6. Conclusion and Recommendations

Using annual time series data (years 1993-2020), the significance and effect of specific taxes on Nigeria's economic growth and development was assessed using OLS regression technique. The importance of taxation cannot be over emphasized. However, Nigeria with all its potential and resources is still suffering from underdevelopment. The country is focusing majorly on oil production to sustain the economy while ignoring some potential stimulators of the economy such as an efficient tax system which can contribute over 90% to the country's GDP.

Taxation continues to function as a powerful socio-political tool for economic growth and development, but Nigeria's experience has been negative due to tax leakages caused by tax evasion, avoidance as well as a poor tax base. Globally, tax leakages raise great concern however Nigeria's experience is malignant due to corruption exhibited by both taxpayers and tax authorities, citizens' reluctance to pay and a readiness to avoid or evade taxes- due to their selfish reasons or the fact that the government itself are not using the taxes in a befitting or prosperous manner for the country. Thus, the study shows that all areas in tax collection and administration that should be focused on as taxation are greatly connected to economic growth and development.

The study recommends:

- i. a restructuring of the entire petroleum sector, by encouraging and making facilities available for local refining of crude oil to enable PPT and other oil-related revenue to properly stimulate the country's development.
- ii. that tax authorities and policymakers should strive for tax system simplification to ensure easier means of tax administration and collection as well as ensure a tax system free of corruption and misappropriation.

- iii. creation of employment opportunities towards building a strong tax base for the nation which would translate to increased tax revenue to further develop the economy.
- iv. efficient channelling of tax proceeds into infrastructure, basic amenities and improvement in technical and institutional arrangements involved in production.

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CONTEMPORANEOUS ANALYSIS OF SUSTAINABILITY REPORTING AND MARKET-VALUE OF LISTED CONSUMER GOODS COMPANIES IN NIGERIA

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Abstract

Lately, issues of climate change, poverty, and economic recession is on the forefront of policy discourse due to its effects on global financial markets. This has affected companies in varying ways which has led to calls for research on sustainability issues. Regarding this, the current study carries out analysis of sustainability reporting and market-value of 17 out of 21 listed consumer-goods companies in Nigeria that are purposively selected. Based on ex-post facto research-design, data for the study are analysed using both content analysis and a lagged contemporaneous regression model. Hence, the study found that, environmental and social reporting have no significant effect on the share price of listed consumer goods companies on Nigerian Exchange Group. While economic reporting has a significant effect on the share price of listed consumer goods companies on Nigerian Exchange Group. It is recommended that; consumer goods companies should reevaluate their environmental and social reporting policy as it is currently not influencing investors' interest in the companies' market value. Environmental discourse is on the forefront of investment drive of investors on the market and companies in other markets who stick with environmental reporting prescribed by the GRI are seen to have increased market values.

Keywords: Contemporaneous lagged model, economic reporting, environmental reporting, market value, social reporting

1. Introduction

Issues of climate change, poverty, and financial growth of companies has been on the forefront of policy discourse in recent times because of these issues to global sustainability agendas as prescribed by the United Nations in their Sustainability Agenda for 2030. Notably, companies, in a bid to carry out their economic activities cause effects on both the environment and the lives of the people which is detrimental to development agendas (Abdulsalam, Musa, Garba, & Mahmood, 2019). As a result, there have been calls championed by the UN and other global organizations for companies to become more responsive to environment and social issues their economic activities have created which necessitated the creation of the GRI as a global principle for companies to report their environmental and social practices vis-à-vis their economic performance (Herbert, Nwaorgu, Onyilo & Iorbagah, 2020). This has led to studies on the effect of sustainability reporting on market values of companies globally but a general conclusion about the extent to which the sustainability reporting of companies has affected their market values is farfetched.

Sustainability reporting is concerned with how a firm portrays itself in regard to environmental, economic, and social challenges. The phrase refers to a company's voluntary initiatives to mitigate the impact of its economic activity on social and environmental problems (Khan, Serafeim, & Yoon, 2015). Sustainability reporting has



recently gained popularity because of the creation of environmental, economic, and social reports (Jones, Hillier & Comfort, 2016; Uyar, 2016). The frequency of sustainability reporting by corporations, as well as the importance of its disclosure in company reports, has drawn investor attention to corporate sustainability (Cormier & Magnan, 2007). This is why, according to Daizy and Das (2014), investors are more willing to invest in the stocks of companies that provide greater sustainability reporting. Furthermore, increased public knowledge of social, economic, and environmental concerns has necessitated firms disclosing their efforts and activities on these topics. These information transparency initiatives address the needs of a wide range of stakeholders, including shareholders, whose investment motivation drives share prices as gauges of a company's market worth (Kaveen, Rebecca & Mark, 2013). Yet, whether investing in sustainability reporting improves market value is debatable (Emeka-Nwokeji, 2019), and the impact of corporate sustainability on market price is unclear (Loannou & Serafeim, 2014).

For example, the studies done by Atanda, Osemene and Ogundana (2021), Emeka-Nwokeji (2019), Fitri, Nurlis and Yanti (2021), Fuadah and Kalsum (2021), Muslichah (2020), Okpala and Iredele (2018), and Owolabi and Okulenu (2020) all presented contrasting evidence on the effect of sustainability reporting on market values of companies. Also, their studies are not specifically in the context of the consumer goods sector, and they all used the linear regression models in measuring the effect of sustainability reporting on market values of the companies; it is not possible for sustainability reports of same year to send signals about the sustainability legitimacy of the companies' economic activities for the same year. Reports are meant to signal future market values. Thus, it is more practical to use a lagged regression model, where the sustainability reports of a preceding year can be matched against the market values of a succeeding year to capture the ensuing effect. Therefore, this creates a sector specific gap and a methodological gap.

As a result of the noticed sectoral and methodological gaps, the current study employs the contemporaneous panel regression to include lags for sustainability reporting against market-values indicator; to examine the effect of preceding year sustainability reports of listed consumer-goods companies in Nigeria on their market-values. Thus, the broad objective of this study is to carry out a contemporaneous analysis of sustainability reporting and market-value of listed consumer-goods companies in Nigeria.

2. Literature Review

This section of the study is concerned with theoretical framework and conceptual clarification of relevant concepts to this study.

Conceptual Clarification Sustainability Reporting

The disclosure and communication of a company's environmental, societal, and economic performance is known as sustainability reporting. According to Priyanka (2013), sustainability reporting is concerned with monitoring and revealing various non-financial indicators and corporate performance regarding the sustainable development objective. It entails incorporating environmental, social, and governance considerations into investing analysis, securities selection, portfolio design, and risk assessment (Serafeim, 2015). According to Elkington (1997), the term "triple bottom-line" or "sustainable reporting" is a yardstick for assessing and reporting overall performance of the company against ethical, economic, and environmental factors. It is also the complete set of principles, issues, and procedures that businesses should confront to reduce any problems that may arise as a result of their operations and to cause economic, social, and environmental values, with the three lines representing society, the economy, and the environment (Elkington, 1997). A sustainability report reflects the organization's principles and shows the connection among its approach and its dedication to a globally sustainable economy.

As per Fitri et al., (2021), the significance of corporate sustainability is that it encourages companies evaluate their influence on sustainability concerns while also allowing them to be upfront about the pitfalls and possibilities they face. According to Emeka and Osioma (2019), sustainability reporting is primarily a voluntary activity with two main goals now: information and evaluation of an organization's impact on the environment and society, and communication of a business's sustainability initiatives and progress to stakeholders. According to Cortez and Cudia (2011), sustainability reporting enables private companies, public organizations, and third-sector organizations to affirm their objective and pursued values, as well as recognize and way of measuring their economic, environmental, social, achievements and opportunities for enhancement.

In accordance with the Global Reporting Initiative GRI (2011), sustainability Reporting Standards address three interrelated areas of sustainability relevant to organizations (GRI, 2011): Economic: encompasses benefits and pay, labor productivity, job creation, R&D expenditures, and investments in training and other kinds of human capital. Financial information is included in the economic aspect, although it is not the only one. Environmental: implications of processes, goods, and services on land, air, water, biodiversity, and human health, for example. Social issues include workplace safety and health, employee retention, labor rights, human rights, pay, and working conditions in outsourced operations. According to GRI (2011), sustainability is the optimal utilization of existing resources through diverse ways to achieve a sustainable and beneficial balance in the long run. It may address not only the reporting company's financial performance,

but also the company's influence on the economic realities of its stakeholders and the local, national, and worldwide economic models in which it operates (GRI, 2011).

Share Price as a Measure of Market Value

Market-value is the company's worth based on the entire market value of its outstanding shares, also known as market cap (Emeka-Nwokeji, 2019). Because market value includes profitability, intangibles, and future growth prospects, it is usually more than book value. Market value is the price that purchasers are willing to pay in the marketplace for an asset. It is also known as market capitalization in the case of publicly traded assets or entities and is determined by multiplying the current price by the total amount of outstanding units.

Market value is the market price of an asset and is frequently used to refer to the price of market share. The fundamental purpose of assessing market value is to provide an accurate appraisal of the asset's worth or value (Whetman, 2018). It is simply the price that an item would typically be sold. Buyers can choose to pay, while sellers can accept more or less than market value. Different marketplaces apply market value in different ways. The market value of a company is reflected in its share price in the business world or publicly traded enterprises (Yu & Zhao, 2015).

A share price is defined by Kaveen et al. (2013) as the price of a single share of a company's saleable stocks. They were referring to the price of a share at a specific point in time, which was reflected by the balance struck between buyers and sellers. According to Kaveen et al. (2013), the share price reflects the collective wisdom and knowledge of the market, which indicates the market worth of a corporation. The return on investment in a stock is determined by changes in its price (Haryono & Iskandar, 2015). The share price is one of the most important elements influencing investors' investing decisions. It is mostly determined by market dynamics of demand and supply for a specific security (Lars, Henrik & Siv, 2005). Yet, to estimate business value, it is necessary to first determine how the firm's total financial performance is reflected in stock prices. According to authors such as Brammer and Pavelin (2008), there is a link between a company's overall success and the pricing of its market securities. According to Brammer and Pavelin (2008), share price suggests evaluating whether financial indices explain cross-sectional volatility in share prices. The valuation models that serve as the foundation for testing in the valuation literature are often established in terms of the level of firm value based on share-price.

2.2 Theoretical Framework



The research is based on signaling theory. According to the theory, efficient management employs sustainability reporting initiatives as indicators to stakeholders about the company's dedication and long-term policy for sustainability challenges, in addition to how the interests of various stakeholder groups of firms have been addressed. Michael Spence proposed the signaling theory (1973). According to signaling theory, corporate financial actions are signals sent by company managers to shareholders to disrupt these imbalances. The theory of signaling is built on the notion that information isn't equally available to all the participants simultaneously, and this imbalance becomes the major concern in the theory. Spence created the notion of "signaling" from his study on markets with asymmetric information to demonstrate how better-informed participants in the market transmit their information to those who are not as well-informed to avoid the problems associated with bad investment decisions.

Signal theory shows how corporations must use sustainability reporting to signal diverse stakeholders. The signal contains critical information about what management has done to meet the expectations of stakeholders. Narratively, ethically minded executives with inside information will be inclined to use sustainability reports to signal stakeholders with details about their enterprises' economic, environmental, and social performance, so strengthening the firms' reputation (Tanjung & Wahyudi, 2019). Such precise disclosures could be utilized as a valued-statement indicator to express the firm's environmental friendliness or to differentiate between firms that are environmentally friendly and those that are not. This is why authors such as Herbert et al., (2020) and Simnett and Huggins (2015) argued that the level of sustainability reports issued by companies can prompt stockholders with sustainability vested interests as their guiding principles to purchase more shares of such company following the release of such reports. Signaling theory as it applies to sustainability has sparked a massive amount of research and application in a wide variety of decision-making situations across disciplines. As a result, a conceptual explanation of what sustainability entails in the domain of accounting study is required.

3. Methodology

This study adopts *ex-post* facto research design that deals principally with data that had already been collected and is available for use. The researcher acknowledges here that, the direction and extent of the effect of the independent variables on the dependent variable in the study are not controlled. The population of this study is twenty-one (21) listed consumer goods companies on the Nigeria Exchange Group NGX as at 31st December, 2021. Using a purposive sampling technique, the study selects seventeen (17) listed consumer goods companies. The 17 companies are selected on the basis that, the companies are listed on

the NGX before 2012 and remain listed throughout the period of study (2012 to 2021). The data for this study are secondary data, sourced from the audited annual financial statements of the sampled companies and the share price values of the companies on investing.com.

Share price is measured using the annual average market price of each company's share reported on investing.com but sustainability reporting is proxied by Environmental reporting (EVN), Economic reporting (ECO) and social reporting (SOC). In accordance with GRI reporting index, each specific measure is defined as follows.

Table 1: Environmental reporting index

GRI	Content criteria	Total content
GRI 301	<ul style="list-style-type: none"> i. Materials that are used by weight or volume. ii. The usage of recycled input materials. iii. Recycled products and packaging materials 	3
GRI 302	<ul style="list-style-type: none"> i. Organizational energy usage. ii. Energy usage outside of the organization. iii. The level of energy intensity. iv. Energy usage reduction. v. Energy-saving measures for products and services 	5
GRI 304	<ul style="list-style-type: none"> i. Protected areas and places of high biodiversity value outside protected areas that are owned, leased, or managed by operational sites. ii. Substantial consequences on biodiversity of activities, products, and services. iii. Habitats protected or restored. iv. IUCN Red List and national conservation list species having habitats in operations-affected areas 	4
GRI 305	<ul style="list-style-type: none"> i. GHG emissions from direct sources (Scope 1). ii. GHG emissions from indirect energy sources (Scope 2). iii. Additional indirect GHG emissions (Scope 3). iv. The intensity of GHG emissions v. GHG emission reduction. vi. Ozone-depleting chemical emissions (ODS). vii. Significant air emissions of nitrogen oxides (NOX), sulfur oxides (SOX), and other pollutants. 	7
GRI 307	<ul style="list-style-type: none"> i. Failure to comply with environmental regulations and laws 	1
GRI 308	<ul style="list-style-type: none"> i. New vendors who were chosen based on environmental factors. ii. Negative environmental impacts and measures made in the supply chain 	2
Total		22

Source: Herbert et al., (2020)

Table 2: Economic reporting index

GRI	Content	Total content
GRI 201	<ul style="list-style-type: none"> i. The creation and distribution of direct economic value ii. The financial ramifications of climate change, as well as other risks and opportunities. 	4

	iii. Obligations under defined benefit plans and other retirement programs. iv. Government financial support obtained	
GRI 203	i. Investments in infrastructure and services are backed up. ii. Substantial indirect economic consequences	2
Total		6

Source: Herbert et al., (2020)

Table 3: Social disclosure index

GRI	Content	Total content
GRI 404	i. Annual training hours per employee on average. ii. Employee skill development and transition aid programs. iii. The proportion of employees who receive frequent career and performance development reviews.	3
GRI 411	i. Incidents of breaches of indigenous peoples' rights	1
GRI 413	i. Community engagement, evaluations, and development activities at the local level. ii. Activities that have a significant actual or potential detrimental impact on local populations.	2
GRI 416	i. Evaluating the health and safety consequences of various product and service categories. ii. Noncompliance incidents involving the health and safety implications of products and services	2
Total		8

Source: Herbert et al., (2020)

Content analysis: Where each criterion is published and explained in the annual reports of the companies, the study codes '1'. If it is not published and explained it is coded '0'. The total content gotten is divided by the total content for each reporting index to arrive at a content index for each company.

Model Specification

The study adapted the model used by Emeka-Nwokeji and Osisioma (2019) with modification to suite the researcher's need.

$$SHP = f(\text{ENV, ECO \& SOC})$$

The econometric form of the model is expressed as:

$$SHP_{ti} = \beta_{0ti} + \beta_1 \text{ENV}_{it-1} + \beta_2 \text{ECO}_{it-1} + \beta_3 \text{SOC}_{it-1} + e$$

Where: SHP = Share price as measure of market value; ENV = Environmental reporting; ECO = Economic reporting; SOC = Social reporting; $\beta_1, \beta_2, \beta_3$ = Regression Coefficients; e = Error term used in the regression model; t = Time in a year i = cross section

The study adopts the contemporaneous regression analysis using lagged panel data with the help of STATA (version 13) as the main technique for data analysis. The data is further analysed using descriptive statistics

and correlation analysis. To test for normality of data, the study employed the Shapiro-Wilk W test. Also, the study data are subjected to multi-collinearity test through correlation test of the independent variables. Furthermore, to ascertain the model fitness, the study use; the Dublin Watson test for autocorrelation, the Wald chi-square test for model fitness, and the balanced covariance panel test.

Decision rule: The study's decision rule is to accept the null hypothesis if the P-value is greater than 0.05 i.e. ($P > 0.05$).

4. Data Analysis and Discussion

Data Analyses

Summary statistics

This section provides summary statistics regarding the study's data. It displays the variables' mean, standard deviation (Std. Dev), minimum (MIN), and maximum (MAX). Table 4 shows the results of descriptive statistics.

Table 4: Summary Statistics

<u>Variable</u>	<u>Obs</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Min</u>	<u>Max</u>
SHP	170	106.3947	336.6952	.21	1556
ENV	170	.5048128	.1544051	.1363636	.8181818
ECO	170	.6794118	.1472998	.5	.8333333
SOC	170	.6919118	.1539327	.25	.875

Source: Authors computation from Stata output

Table 4 shows the summary statistics of the nature of data used in conducting analysis in this study. The data are collected from 17 sampled consumer goods companies for 10 years resulting to 170 observations. From the summary statistics table above, the following information is distilled.

The statistics revealed that Share Price (SHP) mean of the sampled companies during the period of study is 106.39 Naira with a standard deviation (Std. Dev) of 336.69 Naira, which is higher than the mean; thus, depicts that the market values of the companies are widely dispersed. This indicates a high variation in the market values of the sampled companies due to company specific attributes exerting influence on the share price. The SHP of the companies also reveals a minimum of 21kobo and a maximum value of 1556 naira.

The table also showed Environmental reporting (ENV) of the companies has a mean of 0.5048128 index and a deviation of 0.1544051 index, which is lower than the mean. This shows that, consumer goods companies in Nigeria have a similar policy of environmental reporting. It further shows that, on an average, consumer goods companies in Nigeria report 50.5% out of the total 22 environmental reporting content as stipulated by

the GRI. The minimum ENV reporting content by a single company is 0.1363636 and the maximum is 0.8181818.

Again, the table reveals that, economic reporting (ECO) has a mean of 0.6794118 and a deviation of 0.1472998. The deviation is lower than the mean indicating a low variation in economic reporting among the sampled companies in the period under study. The mean value on ECO of the companies shows that, consumer goods companies in Nigeria report up to 67.9% of the 6 economic reporting index as stipulated by the GRI. The statistics also revealed that ECO has a minimum and maximum content value of 0.5 and 0.833333 respectively.

Lastly, the table reveals that social reporting (SOC) has a mean of 0.6794118 with a deviation of 0.1472998 which is below the mean. This indicates a low variation in SOC among the sampled companies for the period under study. The mean value on SOC of 0.6794118 shows that, consumer goods companies in Nigeria disclose up to 67.9% of the 8 social disclosure index as stipulated by the GRI. The statistics also revealed that SOC has a minimum and maximum content value of 0.25 and 0.875 respectively.

Normality Test

The Shapiro-Wilk W test for normality of data is conducted below as it is deemed to best suited for data that is not scaled.

Table 5: Normality of data

Variable	Obs	W	V	z	Prob>z
SHP	170	0.31321	88.995	10.242	0.00000
ENV	170	0.97871	2.758	2.315	0.01030
ECO	170	0.99935	0.084	-5.646	1.00000
SOC	170	0.97125	3.725	3.001	0.00135

Source: Authors' computation from Stata output

Table 5 result revealed that, the Probability values of SHP, ENV, and SOC are greater than 0.05 accepted significance level except that of ECO which is greater than 0.05. Therefore, the null hypothesis is accepted in respect to SHP, ENV, and SOC while the alternative is accepted for ECO. This means that, the data for SHP, EVN and SOC variables are not normally distributed while that of ECO is normally distributed. The reason for non-normality of the data is due to the large variance in the SHP, ENV, and SOC data of consumer goods companies. But the use of contemporaneous panel regression is expected to sort out variations' issues in the panel data that might distort the outcome of the findings given a covariance measurement of the balance aspect of the regression.

Multicollinearity Test

Test for multicollinearity of the independent variables is conducted using correlation matrix as presented below;

Table 6: Correlation Matrix:

	ENV	ECO	SOC
ENV	1.0000		
ECO	0.0249	1.0000	
SOC	0.2834	0.2449	1.0000

Source: Authors' computation from Stata output

Table 6 shows the intensity and type of association that exists between the independent variables of the study. A correlation coefficient of 0.75 or above is considered quite high and may cause problems in the outcome. From table 6, all the variables reveal low correlations with the highest between ENV and SOC at 28.3%. A correlation value of 28.3% is not considered harmful and cannot be ascribed to similarities in data collected, thus poses no harm in the result.

Model Fitness Test

This test is used to determine, if unequal variance/spread of the data over the years can distort the regression result (if the panel is balanced), and if the overall model is fit. To do this, the study relied on the Dubin Watson test, the Panel covariance test, and the probability of Wald test. The result is presented in table 7.

Table 7: Fitness test

Wald chi2	DW	Panel	Prob>chi2
265.04	0	Balanced	0.0000

Source: Authors' computation from Stata output

From the regression result done, the Dubin Watson (DW) result reveals a value of 0 for a contemporaneous panel model. This indicates that, there is no issue of autocorrelation for the timeseries element of the data collected and the model regressed.

The panel covariance test reveals that, the cross-sectional aspect and variance in the data after non-normality test is balanced by the contemporaneous panel process. This indicates that a lagged dynamic panel model with contemporaneous correlation can be utilized for data analyses without necessary testing for time or company specific variance.

For the overall model fitness, the table reveals a Wald test coefficient of 265.04 with a probability of chi-square of 0.000. This indicates that the lagged model is fit, and the outcome of the results can be relied upon.

Regression Result

Table 8: Regression

<u>Variables</u>	<u>Coefficients</u>	<u>Z</u>	<u>p>/z/</u>
ENV	-0.2801507	-0.64	0.523
ECO	2.249027	2.42	0.016
SOC	-0.0034402	-0.01	0.994
-cons	-0.2642237	-0.78	0.438
R ²	0.2075		

Source: Authors' computation from Stata output

Table 8 shows the regression result of environmental, economic and social reporting and share price of selected consumer goods companies listed on Nigerian Exchange Group (NGX). The regression table above reveals an R-square value of 0.2075. This means that, 20.75% variation in share price (SHP) of listed consumer goods companies can be caused by preceding year ENV, ECO, and SOC reporting. But 79.25% variation in SHP of the companies is caused by other factors not considered in the study. This indicates that the preceding year environmental, economic and social reporting contribute to low variation in the market values of the companies.

The result further reveals that, without environmental, economic, and social reporting (-cons), the SHP of the companies will decrease by 0.2642237 units. But a unit increase in previous year ENV will lead to 28 unit decrease in SHP of the current financial year. Also, a unit increase in previous year ECO will lead to 2.24 unit increase in SHP of the current financial year. Lastly, a unit increase in previous year SOC will lead to 0.2642237 unit decrease in SHP of the current financial year.

5. Discussion of Findings

Table 8 shows the z-value and the associated *p*-value for all individual proxy of sustainability reporting against the market values of shares. This is used to guide the discussion of findings in respect to each specific proxy of sustainability against the companies' market value of shares.

In respect to ENV and SHP, the calculated z-value of -0.64 with *p*-value = 0.523 for ENV is above 5% level of significance; this shows that, environmental reporting has no significant effect on the share price of listed consumer goods companies on Nigerian Exchange Group. This finding is consistent with Muslichah's (2020) investigation of the effect of environmental, social disclosure, and financial performance on business value, with financial performance serving as an intervening variable. Even though his research was based on Indonesian sustainability reporting, it indicated that the direct influence of environmental sustainability reporting on company value is insignificant. The study's findings contradict the signaling theory's assertion

that environmental reporting functions as signals that influence investors' interest in the company through share buying, as represented in the share price as market value of the company.

For ECO and SHP results, Table 8 reveals a z-value of 2.42 with p -value = 0.016. This shows that, economic reporting has a significant effect on the share price of listed consumer goods companies on Nigerian Exchange Group. This finding is consistent with that of Owolabi and Okulenu (2020), who investigated whether sustainability reporting is a driver of market value and financial performance in Nigerian insurance companies. He discovered that economic reporting is favorably associated to company market value and performance. Swarnapali, Mihintale, and Le (2018), who investigated the impact of corporate sustainability reporting on company value in Sri Lanka, agreed with the current study's findings. They discovered a link between sustainability reporting and company market value. According to these findings, investors pay a premium in capital markets for companies whose economic performance is based on sustainability principles. This is in line with the signaling theory preposition as investors are responsive to companies who are performing economically despite their sustainability drive.

Table 8 also shows that SOC has a calculated z-value of -0.01 with p -value = 0.994 against SHP. This means that, social reporting has no significant effect on the share price of listed consumer goods companies on Nigerian Exchange Group. This finding is corroborated by Owolabi and Okulenu (2020), who investigated whether sustainability reporting is a driver of market value and financial performance in Nigerian insurance companies. They discovered that social reporting had a negative link with company market value. Both the legitimacy theory and the signaling theory preposition are refuted by these data. According to the signaling and legitimacy theory, the study's results suggests that investors with a social conscience may avoid investing in consumer company stock due to a lack of social reports on how the companies' economic operations affect the lives of both employees and the community. Fuadah and Kalsum's (2021) study, on the other hand, cast doubt on the current study's findings. Fuadah and Kalsum (2021) investigated the impact of corporate social responsibility on firm value and discovered that Indonesian firms' social reports have a positive and significant impact on firm value. The reason for the discrepancy could be that the investigations are being undertaken in separate nations and markets. While the current analysis is based on data from listed consumer products businesses in Nigeria, Fuadah and Kalsum (2021) used data from manufacturing companies in Indonesia.

6. Conclusion

From the discussion of findings, the following conclusions are made:



- i. Environmental reporting has a negative and insignificant effect on share price of listed consumer goods companies in Nigeria.
- ii. Economic reporting has a positive and significant effect on share price of listed consumer goods companies in Nigeria.
- iii. Social reporting has a negative and insignificant effect on share price of listed consumer goods companies in Nigeria.

7. Recommendation

In line with the findings of this study, the following recommendations are made.

- i. It is pertinent for consumer goods companies to reevaluate their environmental reporting policy as it is currently not influencing investors' interest in the companies' market value. Environmental discourse is on the forefront of investment drive of investors on the market and companies in other markets who stick with environmental reporting prescribed by the GRI are seen to have increased market values. Thus, consumer goods companies should also rely on the content of GRI to report more of their environmental performance to attract value to the share prices of the companies.
- ii. The economic reporting practice of the companies has had tremendous effect on the companies' share value due to the fact, the companies' economic report proves viable for the interest of investors. To further maintain its signaling attribute to the market, there is need for consumer goods companies to ensure that aspects of the GRI which consist of economic performance in relation to climate change impacts and social impacts are adequately reported to enhance the sustainability of the company's market value which will be inclusive of a more diverse stakeholders approach.
- iii. The current social reporting practice of consumer goods companies in Nigeria is not holistic as it pertains more to community development neglecting other key stakeholders like employees and suppliers which are valid communities that can affect the financial performance and market values of the companies. To improve this, consumer goods companies should rely more on the content provisions of the GRI social reporting that are in line with employee and suppliers to produce annual reports that represents a wider social reporting content that will improve the effect of social reporting practice of the companies on their respective market values.

8. Contribution to Knowledge

This study contributes to knowledge in the following areas:

- i. The study is one of the few on sustainability reporting in the context of consumer goods companies which included GRI reporting index. This serves as a gateway to bringing to the notice of scholars the existence of GRI index in the context of consumer goods for Nigerian companies.
- ii. Also, the study points out the limitation of the current studies done on sustainability reporting and market value where linear regressions are used to measure the effects as against using lagged models, since sustainability report of a financial year in reality only affects market values of companies in succeeding years. Thus, the current study contributes to knowledge about the most suitable model for sustainability and market value studies.

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ACCRUAL EARNINGS MANAGEMENT AND CHIEF EXECUTIVE OFFICER (CEO) ATTRIBUTES

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Abstract

The study examined effect of Chief Executive Officer (CEO) characteristics on the accrual earnings management of Financial Service Firms (FSF) in Nigeria which span from 2012 to 2021. The research set three specific objectives that examined the effect of CEO ownership, CEO gender diversity, CEO nationality and CEO tenure on the accrual earnings management of the firms, while the hypotheses were formulated in line with the objectives. Experimental research design was adopted and thirty (30) firms out of the fifty (50) FSF listed on Nigeria Exchange Limited (NGX) were selected based on purposive sampling technique. Secondary data was sourced from financial reports of the firms upon which analysis were done with correlation matrix and OLS regression estimation technique. Results indicated that CEO ownership has strong inverse influence on accrual earnings management of FSF at 1% significant level. CEO gender diversity has positive significant impact on accrual earnings management of FSF at 5% level. Furthermore, the study found that CEO nationality has negative and strong influence on accrual earnings management of FSF at 10% level. Finally, tenure has positive and no significant effect on earnings management of FSF. The study there from recommended amongst others that the shareholder should make the CEO's take up good chunk of shares which will make them see the entity as their own and invariably reduce the agency cost and guarantee a financial statement that is free from accrual earnings management.

Keywords: CEO ownership, CEO gender diversity, CEO tenure, CEO nationality, upper echelon theory

1. Introduction

The Nigerian Code of Corporate Governance (NCCG) 2018 buttresses that the CEO being the person at the helm of affairs of management is empowered by the shareholders to handle the affairs of the firm, to fulfil the strategic objectives for corporate continuity. This assertion invariably positions the CEO on the verge of doctoring the financial statements of the real activities of the firm, to reflect the forecasted financial blueprint, for opportunistic purposes and to present positive public image of himself and the organisation. In other words, the behaviours that are adopted by CEO through various reporting methods and estimates display inaccurate reflections on the company's financial fundamentals (Arun, Almahrog & Ali-aribi, 2015; Beneish 2001). The scenario in most cases amounts to presenting low quality financial statements with material misstatement, which can mislead the stakeholders in their various decision making. Moreover, Hambrick and Mason (1984) made claim in their study that companies are reflections of the psychological components or attributes of their CEO as they are the arrowhead of the entity. In effect the upper echelon theory upholds that the CEO cognitive bases such as like educational exposition, nationality, sex, and experience of the CEO influence the entity's outcome.



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On the other hand, financial statement fraud is a recurring decimal in the business world today. It represents any miss presentation or misstatement of facts in the financial reports of the organisation, which could be because of operating within the confines or the loopholes in the accounting standards and conventions to achieve a specific aim, generally referred to as creative accounting. Indeed, the chances that creative accounting could be applied in the financial reporting of the firm increases the propensity of earnings management inclusion in their annual report, which downplays the quality of financial reporting. Many cases of corporate failures could not be distanced from causative of financial statement frauds including the collapse of Enron, WorldCom, and Xerox (Odubuasi, Ofor & Ilechukwu, 2022).

Pertinently, CEO tends to engage in financial statement fraud through earnings management to present a financial statement that conveys satisfactory image to the shareholders. To understand the argument, Amelia and Eriandani (2021) posit that much pressure on the CEO to meet a given performance target as usually mounted on them by the shareholders cum board of directors adds feather to accounts manipulation. Hence, the rise in empirical urge to identify the CEO attributes that would not succumb to pressure in doctoring the financial statements of the enterprise in any situation. Research had established relationships between CEO characteristics and financial statement fraud and had not done much in covering reasonably, large part of the study area especially in developing continent of Africa and specifically country like Nigeria.

Extant literature show that many studies were found on European nations (Nguyen, et al., 2018; Oegema, 2017; Dimopoulos & Wagner, 2016; Lakhali, et al., 2015; Arun, almahrog & Ali-aribi, 2015; Belot & Serve, 2015). Further revelations show that adequate studies were also found from America (Zalata, Ntim, Aboud & Gyapong, 2018; Gottesman & Morey, 2010; Jalbert, et al., 2010; Peni & Vahamaa, 2010). Good number of literatures were additionally found from Asian continent (Altarawneh, et al., 2022; Amelia & Eriandani, 2021; Alhmood, et al., 2020; Putri & Rusmanto, 2019; Zainal et al., 2013; Qawasmeh & Azzam, 2020; Kyunga & Jooyeon, 2017).

Among this research, the only study on the title found in Africa and precisely Nigeria was done on bank (Ashafoke, Dabor & Ilaboya, 2021). To this effect, this study found gap in literature since no study had sought for the impact of CEO attributes on accrual earnings management specifically on the providers of fund for economic activities in Nigeria. This study therefore took up broader perspective from an important sector of the economy that provides financial succor for whatever economic growth and development expected for improving both developed and developing economy. Hence, we determined the influence of CEO attributes on accrual earnings management of firms under FSF of Nigeria exchange group. The study main objective

is to investigate the effect of CEO attributes on accrual earnings management of FSF in NEXG. The specific objectives are to investigate the.

1. Effect of CEO ownership on accrual earnings management of companies listed under financial service sector of NEXG.
2. Effect of CEO gender on accrual earnings management of companies listed under financial service sector of NEXG.
3. Effect of CEO nationality on accrual earnings management of companies listed under financial service sector of NEXG.
4. Effect of CEO tenure on accrual earnings management of companies listed under financial service sector of NEXG.

Hypotheses

The hypotheses of the study were stated in line with the objectives and presented in their null format thus.

H1: CEO ownership has no significant effect on accrual earnings management of firms in financial service sector.

H2: CEO gender diversity has no significant effect on accrual earnings management of firms in financial service sector.

H3: CEO nationality has no significant effect on accrual earnings management of firms in financial service sector.

H4: CEO tenure has no significant effect on accrual earnings management of firms in financial service sector.

The result of this study is expected to be useful to shareholders as it will expose to them of what attributes to look out for in filling the captain of their investment. To independent auditors as to know when to raise their suspicious antenna so high when certain attributes are found in some CEO, and the result is on itself an enrichment to the scholars who may want rich and robust studies done in Nigeria on the related topic. The study is structured as follows: section two discussed related literature, section three contains the methodology, and subsequent section is the data analysis and discussion of results. Lastly, conclusion and recommendations of the study was presented.

2. Review of Related Literature

Conceptual review

CEO attributes

For proper understanding of why business entity performs in a particular way, one must understand the CEO values, perceptions, and dispositions (Hambrick, (2007). Hambrick and Mason (1984) in their upper echelon

theory posit that CEO's personal characteristics have the capacity to affect his judgment and decision, some of the CEO's attributes under consideration are nationality, gender, tenure, and ownership.

CEO ownership – this looks at the psychological disposition of the CEO when he has a chunk of shares of the organisation he leads. Qawasmeh and Azzam (2020) noted that CEO ownership is a fundamental factor that determines how the CEO would manipulate the accounting report and earnings of the enterprise. Sharma and Kuang (2014) pointed out that the rise in the volume of stock held by the CEO would increase their tendency to enroll in more creative accounting conducts to project higher earnings. Kazemian and Sanusi (2015) affirm that firms with high CEO ownership have higher chances to engage in earnings management activities for opportunistic behaviour at the detriment of the shareholders, especially in settings of low market discipline.

CEO gender diversity – CEO gender assesses the extent to which female CEO would minimize the amount of accrual earnings management in financial statements. Women are believed to be more meticulous, fraud averse and have the capacity to handle diverse functions. The global financial crises of 2008 threw open the heated argument on the gender diversity preference in top echelon position of firm management (Lakhal, Nekhili, & Zouari, 2015). Female executives could produce better result emanating from conservatism, risk averseness and ethical behaviour that could result to reduces earnings management (Peni & Vahamaa, 2010). Amelia and Eriandani (2021) argue along gender theory and upheld that female are more unbiased and conservative than their male counterpart. Therefore, female CEO would tend to make more ethical decision and avoid earnings management as much as she can.

CEO nationality – Nationality orientation has psychological inducement in the lives of individuals and nationality qualifies the nation of origin of the CEO. Literature recorded that CEOs are better off in the country where they were groomed except for CEOs with international experience and knowledge who would have a competitive advantage in improving performance of foreign companies (Le & Kroll, 2017). CEO with a particular nationality may have difficulty selling out his skills in a different clime or nation than the CEO of that very nationality. Jalbert, Chan, Jalbert and Landry (2007) found from their empirical investigation that CEOs in the United State of America were compensated according to their nationalities. They added that theory modes of operations or methodology of running the firms varied alongside their national divides.

CEO tenure – CEO tenures addresses the number of years of service of the appointed CEO. The Upper Echelon Theory posits that the tenure of the CEO could affect the type of decision he makes for the organisation (Hambrick & Mason, 1984). For instance, new CEO's can adopt several non-routine adjustments in their first year to accommodate excess expenses and losses, upon which they will claim credit in future

years' profit (Ali & Zhang, 2014). Pertinently, CEO with long tenures would get the opportunity to acquire lots of experience that would assist him take decisions that would reduce accrual earnings management or no misrepresentation at all (Alhmoed, Shaari & Al-dhamari, 2020). That result of Alhmoed et al. (2020) corroborated the finding by Hambrick (1992), that the longer the tenures of the CEOs the more the knowledge, internal policy, and business strategy consistency for greater efficiency.

Upper Echelon Theory (UET)

UET is a theory that expresses the influence of the CEO characteristics on the outcome of the enterprise he manages. UET was propounded by Hambrick and Mason (1984) which emphasises the ability of Chief Executive Officer (CEO) cognitive bases to affect the decision making of the firm. The theory was prompted by the desire to finding a solution to the reason that organisations act the way they do. On this premises the theory postulates that the attitude of the top management has capacity of affecting organizational performance. The paper presented by Hambrick and Mason (1984) disclosed empirical result that gave life to UET with certain demographic attributes that include tenure, education level, nationality, and gender, which are proxy to psychological differences. They posit that a firm's outlook reflects the values and cognitive bases of powerful actors in the organization. Meanwhile, many researchers had criticized UET for lacking the capacity of considering the factors within the process that mediate in the relationships between top executive and the performance of firms (Menz, 2012; Bluedom, Johnson, Cartwright, & Barringer, 1994). They argue that UET did not recognize many contributory elements that must surge in during management process, which will react with the demography of the top executives before any result could be achieved. Menz (2012) continued that this gap limits the conceptual and the practical contributions of the UET. Nonetheless, Bromiley and Rau (2016) suggest that additional study should be undertaken at an in-depth tone, to examine the cognitive processes that are essentially required links, to the relationships between top management demography and operational outcomes of the firms. This theory is highly related to our study as its emphasis is on how the CEO or the CFO demography affect the operational outcomes of the organisation including its tendency of presenting financial statements that contains accrual earnings management.

Empirical review

S/N	Author(s) / Year	Title of the study	Variables used	Methodology	Findings
1	Gounopoulos and Pham (2016)	Relationship between the financial expertise of CEOs and earnings management around	X: CEOs with financial expertise Y: Earnings management with modified Jones models	Descriptive statistics, OLS regression	Firms going to the public the first time are less likely to engage in earnings management when they have CEOs with financial

		Initial Public Offerings (IPO)			expertise than the firms with non-financial expertise.
2	Arun, et al. (2015)	Female director and earnings management of UK Companies	X: female directors on board, number of independent female directors on board, number of executive female directors on board female CFO Y: current accruals	Descriptive statistics, correlation, and regression analysis	Firms with higher number of females on board, and independent female directors have limited earnings management practices on the sectorial firms in UK
3	Alhmoode, et al. (2020)	CEO characteristics and real earnings management in Jordan	X: CEO's experience, CEO's tenure, CEO's duality, and politically connected CEOs Y: Earnings management of discretionary accruals. Control variables: firm size, firm age, financial leverage, market-to-book ratio, and sales growth.	Correlation matrix and OLS regression	CEO experience, CEO political connection has positive significant effect on earnings management, CEO tenure has positive no significant effect on earnings management, whereas CEO has negative significant effect on earnings management
4	Altarawneh, et al. (2022)	Influence of CEO attributes on the discretionary accrual of firms listed on the Malaysian stock exchange	X: CEO tenure, CEO network, CEO expertise, female CEO, and CEO age Y: discretionary accrual Control variable: firm size, leverage, big4, ROA, sales growth, market to book value.	Correlation matrix and OLS regression	CEO tenure, CEO network, female CEO have negative statistically significant effect on discretionary accrual on firms sampled in Malaysian market. Meanwhile, CEO expertise, and CEO age have no significant effect on discretionary accruals
5	Kazemian and Sanusi (2015)	Association between earnings management and ownership structure in a qualitative manner	Review of previous studies	Qualitative design	Significant relationships exist between ownership structure of the firms and earnings management across the entire nation investigated
6	Lakhal, et al. (2015)	Do women on board and in top management reduce earnings management in France?	X: women on management Y: Earnings management	descriptive statistics, panel data regression analysis	Women on top management positions like director or chairman aids reduction in earnings management. They also discovered that having up to three women sitting on board have inverse effect on earnings management while, women CEO and women CFO have no effect on earnings management of the firms sampled
7	Zainal et al. (2013)	Effect of power on financial statement fraud in Indonesia	CEO Dominance, CEO Duality, CEO Stock Owned, CEO Related to Founder, CEO's Family Shares, CEO	principle component analysis	BOD expert power increases the chances of financial statement fraud especially when BOD ownership power decreases

			Relatives as Sitting Members on the Boards, CEO Functional Background, BOD Outside/Independent, Directors Size of the BOD Directors, Stock Ownership, BOD Member(s) as Founders or Relatives of the company's Founder, Frequency of Board Meetings, Existence of Audit Committee, Audit Committee Size, Audit Committee Independent Member, Audit Committee Expertise, and Audit Committee Meeting Frequency		
8	Qawasme h and Azzam (2020)	CEO characteristics and earnings management in Amman	X: CEO tenure, CEO age, CEO experience and CEO ownership Y: Discretionary Accrual Model	Descriptive statistics, correlation, and regression analysis	CEO ownership and CEO tenure have positive statistically significant Impact on earnings management of non-financial firms in Amman
9	Ashafoke et al. (2021)	Does CEO characteristics affect financial reporting quality of Nigerian banks?	X: CEO gender, CEO financial expertise, and CEO tenure Y: IASB qualitative characteristics index	Descriptive statistics and regression analysis	CEO gender has a positive but no significant influence on FRQ, positive and significant association exist between CEO tenure and FRQ, while inverse and significant association exist between CEO financial expert of the banks reviewed.
10	Troy et al. (2011)	CEO demographics and Accounting Fraud: Who is more likely to rationalise illegal acts?	X: executive age of CEO, executive functional experience of CEO and executive business education of CEO Y: financial statement fraud	Descriptive statistics and OLS regression	CEO stock options (a form of executive equity incentive) predict fraud, and that this relationship is not moderated by CEO demographics.
11	Kyunga and Jooyeon (2017)	Association between CEO gender and earnings management in North Korea	X: CEO gender Y: earnings management	Descriptive statistics, OLS regression analysis	Male CEO engage in the use of aggressive discretionary accruals and activities operations to report small positive earnings or small earnings increase. On the other hand, female CEO tends to decimate the earnings management
12	Nguyen et al. (2018)	Relationship between CEO	X: CEO expertise and CEO reputation	Correlation matrix and	CEO reputation and CEO expertise have strong impact on

		characteristics and earnings management on mergers and acquisition on UK	Y: earnings management	OLS regression	the earnings management of firms during mergers and acquisition exercise.
13	Peni and Vahamaa (2010)	Female executives and earnings management in US economy	X: female CEO and female CFO Y: earnings management	descriptive statistics, pair wise correlation and regression analysis	all the female variables used have negative effect on earnings management, but female CFO and female executive have statistically significant effect on earnings management
14	Oegema (2017)	Effect of gender diversity and culture on earnings management of eight European countries	X: gender diversity and culture Y: earnings management	Descriptive statistics and regression estimation technique	Gender diversity has inverse effect on earnings management which was measured with accrual-based earnings management. Again, the result shows that having 30% of women or more on board has significant effect on earnings management. Finally, the study found from the moderating effect of culture from the angle of masculinity and or femininity to have no significant effect on earnings management
15	Alqatamin et al. (2017)	CEO attributes and earnings management in Jordan economy	X: CEO gender, CEO age and CEO overconfidence, Y: discretionary accruals Control variables: firm size, profitability, industry type, dividend ratio and firm leverage.	panel regression technique	CEO overconfidence has positive strong influence the earnings management of the firms. More so, CEO age has no significant effect on earnings management of the firms sampled
16	Amelia and Eriandani (2021)	CEO characteristics and earnings management of Indonesian firms	X: CEO gender, CEO tenure and CEO turnover Y: earnings management Control variables: firm age, firm size, firm leverage, ROA and MTB	descriptive and panel regression analysis	CEO turnover and Female CEO have weak effect on the earnings management of the firms sampled. MTB ratio and Company age have weak effect on earnings management. CEO tenure and firm size have inverse significant effect on earnings management whereas ROA and firm leverage have positive statistically significant effect on earnings management
17	Zalata et al. (2018)	Effect of female CEO on core earnings	X: female CEO Y: unexpected core earnings	multivariate analysis	female CEO is inversely and significantly related to core

		quality stationing the puzzle on ethics versus risk averse on US non-financial firms			earnings quality. Meaning no significant difference exist between female and male CEO in relation to accrual earnings management
18	Zouari et al. (2010)	Do CEO's characteristics affect earnings management?	X: CEO reputation, Duality of ownership, CEO Expertise Y: discretionary accrual Control variables: operating cash flow, market to book value, audit quality, firm size and financial leverage	OLS regression	CEO duality, CEO reputation, CEO expertise, are positively and significantly affecting earnings management.
19	Belot and Serve (2015)	Do women engage in less earnings management than men from the perspective of privately held French SMEs?	X: CEO age, CEO gender Y: earnings management	OLS regression	Firms managed by female CEO have significantly less engagement in earnings management than firms run by male CEO. The study also holds that CEO age have negative significant effect on earnings management of SME in French
20	Luciano and Shan (2018)	Effect of CEO gender on real earnings management	X: CEO age, CEO gender, and CEO compensation Y: cash flow from operations (CFO), production costs and discretionary expenses.	descriptive statistics and regression estimation	CEO age, gender and compensation have positive relationship with cash flow from operation, but firm size has negative and significant relationship on operating cash flow. CEO age and compensation have inverse and no significant effect on abnormal discretionary expense, but CEO gender and firm size have positive relationship with abnormal discretionary expenses.
21	Rashid et al. (2018)	The mediating effect of CEO characteristics on the relationship between corporate governance attributes and earnings management of financial service sector in Nigeria	X: CEO attribute Y: earnings management	Descriptive statistics, correlation, and regression analysis	Corporate governance attributes play a vital role in safeguarding the integrity of financial reporting process, the CEO characteristics is perceived to serve as a link between corporate governance attributes and earnings management, to act as a third party which helps in mitigating information asymmetry and clash of interests among management and shareholders.

22	Putri and Rusmanto (2019)	CEO attributes and earnings management and EPS of firms on Indonesian Stock Exchange	X: CEO gender, CEO age, CEO's level of narcissism, CEO citizen, CEO tenure and CEO education, Y: AEM, REM and EPS	descriptive statistics and regression analysis	CEO narcissism, education, age, tenure and citizen have positive significant effect on EPS while CEO gender has negated no significant effect on EPS. CEO narcissism and education have positive and strong influence significant effect on AEM, CEO age has positive no significant effect on AEM, CEO gender and citizen have negative significant effect on AEM while CEO tenure has negative and no significant effect on AEM. Finally, CEO gender, education, tenure and citizenship have negative statistically significant effect on REM, CEO narcissism has positive statistically significant effect on REM while CEO age has positive and no significant effect on REM.
23	Jalbert et al. (2010)	CEO educational background, CEO compensation and firm financial performance of firms in USA	X: educational background, CEO payment Y: ROA	Regression estimation	Educational background of the CEO is associated with the performance of firms studied
24	Gottesman and Morey (2010)	Effect of CEO quality educational background on firm performance as evidenced on the firm's listed on New York	X: CEOs undergraduate degree in liberal arts, non-liberal arts, MBA, law degree, GMAT, and SAT score. Y:	OLS regression technique	CEO educational background is not related to the performance of firms in New York. Particularly, the finding shows that firms managed by CEOs with an MBA degree do not have better financial performance than other firms managed by a CEO with a liberal arts and law.
25	Dragota et al. (2020)	effect of CEO turnover in post-communist nations: Romanian perspective	X: CEO turnover Y: ROE	Ordinary least square estimation	CEO–Chairman duality and the controlling power of the largest shareholder act as entrenchment mechanisms. More so, the result indicate that CEO gender was a factor for CEO turnover. Again, CEO turnover decision is negatively related to accounting-based performance

26	Dimopoulos, and Wagner (2016)	Investigated the relationship between corporate governance and CEO turnover on the performance of firms in UK and Germany	X: CEO turnover, CEO duality, board size, Y: ROA	Descriptive statistics, univariate and multivariate analysis	Underperformed CEOs face the threat of removal, and the newly hired CEOs improve the performance of firms in the following years.
27	Orehova et al. (2019)	Association between CEO turnover and of firms	X: CEO turnover Y: revenue	OLS regression	Statistically significant and inverse relationship exists between the change in revenue and CEO turnover in the short term. Again, foreign CEOs are faster to adapt to a new position that allows for improved profitability indices of the firms studied

Source: Researchers' compilation 2023

Appraisal of empirical literature

Most of the studies we reviewed on the association between CEO attributes and earnings management were conducted on developed and developing continents other than Africa. For instance, many studies were found on European nations (Nguyen et al., 2018; Oegema, 2017; Dimopoulos & Wagner, 2016; Lakhali et al., 2015; Arun et al., 2015; Belot & Serve, 2015). Adequate studies were also found from America (Zalata et al., 2018; Gottesman & Morey, 2010; Jalbert et al., 2010; Peni & Vahamaa, 2010). Good number of studies were further found from Asian continent (Altarawneh et al., 2022; Amelia & Eriandani, 2021; Alhmood, et al., 2020; Putri & Rusmanto, 2019; Zainal, et al., 2013; Qawasmeh & Azzam, 2020; Kyunga & Jooyeon, 2017). Among these, the only study was found in Africa and precisely Nigerian bank (Ashafoke et al., 2021).

The summary indicates that scant literature exists in Nigeria and Africa at large on the relationship between CEO attributes and earnings management. Hence the study chose to undertake the research on financial service sector of Nigeria exchange group, a sector that is at the center for both short- and long-term financing of any serious investment and economic activities in the society, and this is the gap in knowledge this study filled.

3. Methodology

The research adopted experimental research design. Experimental research design is deemed most appropriate as we scientifically established cause and effect relationship of the independent variables to dependent variable of the study. The population is made up of the fifty (50) FSF quoted on the NGX covering 2012 to 2021 financial years. A secondary source of data was got from the annual reports of the firms for those ten years. Thirty of the companies were selected as sample size purposely because of their financial statement availability and accessibility on the internet for that ten-year period. Analysis was done with descriptive statistics, correlation analysis and OLS regression analysis technique. The study applied Variance inflation factor for multicollinearity test while Breusch-pagan test was applied for Heteroscedasticity check. F-test and P-value tested the validity of the model, R² measured the goodness of fit of the regressor variables on explaining the dependent variable. T-test and P>/t/ statistics were used to test the significance of the individual independent variables.

Model specification

$$\text{EARN_MGT}_{it} = \beta_0 + \beta_1 \text{CEO_OWNE}_{it} + \beta_2 \text{CEO_GEND}_{it} + \beta_3 \text{CEO_TENU}_{it} + \beta_4 \text{CEO_NATI}_{it} + \mu \quad \text{---equ 1}$$

Where: EARN_MGT = accrual earnings management; CEO_OWNE = CEO ownership; CEO_GEND = CEO gender diversity; CEO_TENU = CEO tenure; CEO_NATI = CEO nationality; β_0 = Intercept; β_1 - β_4 = Coefficients; μ = stochastic term.

Table 3.1- Measures of the Variables

Variables	Proxy	Measures	Apriori expectation
accrual earnings management	EARN_MGT	Proxied by discretionary accruals computed using Modified Jones Model (1995)	
CEO Ownership	CEO_OWNE	The percentage of stocks owned by the CEO at the beginning of the year	+
CEO gender diversity	CEO_GEND	Binary values where '1' is assigned if CEO is a woman otherwise '0'	+
CEO Tenure	CEO_TENU	CEO Tenure in Dummy variable where "1" was assigned to Companies whose CEOs have stayed for 3 years and "0" for CEOs with less than 3 years of engagement	+
CEO Nationality	CEO_NATI	'1' if CEO is a foreigner, otherwise '0'	-

Source: Authors' compilation (2023)

4. Data Analysis and Interpretation

4.1 Data analysis

Table 4.1 – Descriptive statistics

Stats	EARN_MGT	CEO_OWNE	CEO_GEND	CEO_TENU	CEO_NATI
Mean	.2919661	.0215338	.0890411	.6769759	.0171821
p50	.07	.1	0	1	0
Max	1.35	.03	1	1	1
Min	-.86	0	0	0	0
Sd	.5090489	.386737	.285292	.4684374	.1301735
N	295	296	292	291	291

Source: Stata 14 output

The descriptive statistics result in table 4.1 provides evidence on the mean distribution, maximum, minimum, standard deviation, median and the count of the data collected which span from 2012 to 2021. The table 4.1 shows that the average Earnings Management is 0.29, minimum of -0.86 and maximum of 1.35, with standard deviation of 0.5. The result shows that the data varied widely since the standard deviation is higher than the mean value of the earnings management. CEO share ownership has average score of 2%, maximum of 3%, minimum of 0 and standard deviation of 0.38, which shows wide variability on the CEO ownership structure across the sampled firms. CEO gender has mean value of 0.089, maximum of 1, standard deviation of 0.2. The table provided also that average score of CEO tenure is 0.67, standard deviation of 0.46 which means that the firms have similar attitude to the tenures of the CEO. CEO nationality has average value of 0.017, standard deviation of 0.13 and maximum of 1. The scores indicate that the use of foreign CEO is not a common practice among the sampled firm in financial service sector.

Table 4.2

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	Z	Prob>z
EARN_MGT	295	0.90360	20.235	7.054	0.00000
CEO_OWNE	296	0.51578	101.942	10.848	0.00000
CEO_GEND	292	0.93545	13.428	6.089	0.00000
CEO_TENU	291	0.99591	0.848	-0.387	0.65080
CEO_NATI	291	0.70223	61.751	9.664	0.00000

Source: Stata 14 output

The study used Shapiro-wilk w to test the normality distribution of data generated and know if there is an outlier in the data. The table 4.1.2 indicates that the joint probability of CEO gender 0.65 is normally distributed as their joint P-value is higher than critical value of 5%. Meanwhile, joint probabilities of all other variables are not normally distributed since their joint P-values are less than critical value of 5%. The study therefore proceeds with nonparametric correlation test using spearman correlation.

Table 4.3 Correlation Matrix

	EARN_MGT	CEO_OWNE	CEO_GEND	CEO_TENU	CEO_NATI
EARN_MGT	1.0000				
CEO_OWNE	0.0076	1.0000			
CEO_GEND	0.1357	0.0087	1.0000		
CEO_TENU	0.0029	0.3398	0.0290	1.0000	
CEO_NATI	-0.0816	-0.1095	-0.0407	-0.0215	1.0000

Source: Stata 14 output

The correlation table above shows that accrual earnings management has positive and very low relationship with CEO ownership, CEO tenure and CEO gender at a correlation coefficient 0.007, 0.002 and 0.135 respectively. Although accrual earnings management has negative and very low relationship with CEO nationality (EARN_MGT/CEO_NATI = -0.081). Meanwhile, CEO ownership has positive and very low relationship with CEO gender at a coefficient of 0.008., CEO ownership has positive and moderate relationship with CEO tenure at a coefficient of 0.33, and CEO ownership has inverse and low relationship with CEO nationality at a coefficient -0.109. CEO gender has positive and very low relationship with CEO tenure at 0.089 while CEO nationality has negative and very low relationship with CEO gender and CEO tenure on a correlation coefficient of -0.04 and -0.021 respectively. However, the result contained no multicollinearity problem as no correlation coefficient is above 0.7. Although, the study tested more detailed approach, the presence of multicollinearity using VIF.

Table 4.4 Variance Inflation Factor

Variable	VIF	1/VIF
CEO_OWNE	1.05	0.948682
CEO_TENU	1.05	0.951014
CEO_NATI	1.00	0.995161
CEO_GEND	1.00	0.996446
Mean VIF	1.03	

Source: Stata 14 output

Table 4.4, shows that mean VIF of 1.03 is lower than the acceptable mean VIF of 10. For that no case of high correlation of independent variables is recorded and conclude that no multicollinearity does not exist in our data.

Table 4.2.5 - Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
 Variables: fitted values of EARN_MGT

chi2(1) = 1.99
 Prob > chi2 = 0.1583

Source: Stata 14 output

Heteroscedasticity test has a decision rule that there is no heteroscedasticity if the probability value is greater than the critical value at 5% level. The table 4.5 indicates that probability value of 0.15 is greater than the critical value of 0.05. Therefore, we conclude that no presence of heteroscedasticity is found in our data.

Table 4.6 - Ramsey RESET test using powers of the fitted values of EARN_MGT

Ho: model has no omitted variables

F(3, 282) = 1.84
 Prob > F = 0.1399

Source: Stata 14 output

The result on the table 4.6 contains the test of whether the model was miss specified using Ramsey reset test. By its rule, a model is miss specified if the prob>F is lesser than 5%.

Table 4.7 - Regression results

Source	SS	df	MS	Number of obs = 290
				F(4, 285) = 4.79
Model	4.73484966	4	1.18371242	Prob > F = 0.0009
Residual	70.445749	285	.247178067	R-squared = 0.0630
				Adj R-squared = 0.0498
Total	75.1805987	289	.26014048	Root MSE = .49717

EARN_MGT	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CEO_OWNE	-.018858	.0055266	-3.41	0.001	-.0297361 -.0079799
CEO_GEND	.2180921	.1042039	2.09	0.037	.0129852 .423199
CEO_TENU	.058971	.0639615	0.92	0.357	-.0669258 .1848679
CEO_NATI	-.3795303	.2248277	-1.69	0.092	-.8220637 .0630031
_cons	.2864494	.052231	5.48	0.000	.183642 .3892568

Source: Stata 14 output

The result from table 4.7 provides reports of Ordinary Least Square (OLS) regression estimation technique. The F-statistics, $F(4, 285) = 4.79$ and the Probability value, $\text{Prob} > F = 0.0009$ indicate that our model is valid and good for making inferences. The R^2 of 0.063 implies that the model will explain 6.3% of the variations in accrual earnings management of firms listed on the financial service sector of Nigeria exchange group.

4.2 Hypotheses testing and results discussion.

H1: CEO ownership has no significant effect on accrual earnings management of firms in the financial service sector.

Result on table 4.7 shows that CEO ownership has coefficient of -0.018, which indicates that the increase in CEO share ownership by one unit, would amount to decrease in accrual earnings management of the financial service sector firms 0.01 units, and the lesser the quantity of share held by the CEO, the more they would engage in deceptive accounting practices. The implication is that the CEO would want to be very honest in preparation of the accounts where he held a significant amount of share. This agrees with agency theory, and it reduces agency problems. Moreover, P-value ($P > |t| = 0.001$) is less than critical value of 0.05 which indicates that, CEO ownership has statistically significant effect on accrual earnings management of FSF listed on NEXG at 1% level. Sequel to these findings, the study concludes that CEO ownership has statistically significant effect on accrual earnings management FSF on NEXG. The result complies with the prior study that found that CEO ownership has strong influence on earnings management of non-FSF in Amman (Qawasmeh & Azzam, 2020).

H2: CEO gender has no significant effect on accrual earnings management of firms in financial service sector.

The result shows that CEO gender diversity has regression coefficient of 0.21. This indicates that CEO gender diversity has positive impact on the accrual earnings management of FSF in Nigeria. The result implies that a unit increase on the appointment of female CEO, would result to increased volume of accrual earnings management in the financial statements by 0.21 units at the constant placement of other variables. The P-value ($P > |t| = 0.037$) indicates that female CEO is significant influencer of accrual earnings management in Nigeria financial service sector. Therefore, we accept alternate hypothesis that posits that CEO gender diversity has a positive statistically significant impact on accrual earnings management of listed companies in financial service sector on Nigeria exchange group at 5% level. The result corroborates the finding made by Altarawneh, et al. (2022), who empirically found that women CEO has negative statistical strong impact on discretionary accrual of firms sampled in Malaysian market. The study result however disagrees with the outcome of the investigation in Nigeria which found that female CEO has positive insignificant effect on FRQ of the banks reviewed (Ashafoke, Dabor & Ilaboya, 2021).

H3: CEO nationality has no significant effect on accrual earnings management of firms in the financial service sector.

The result on table 4.7 also shows that CEO nationality has a regression coefficient -0.379. The statistical figure implies that CEO of foreign nationality and accrual earnings management of FSF on NEXG are

inversely associating. Hence, the use of foreign CEO's would reduce the inclusion of accrual earnings management in the financial statements of financial service firms in Nigeria. It might emanate from the fact that foreign CEOs would want to prove their potentials to harness and expand benefits of the shareholder and showcase their understanding of the market environment of the Nigerian nation. The P-value ($P > t = 0.092$) indicates that foreign CEO is a determinant of accrual earnings management of the financial service sector at 10% significant level. Therefore, the study decided on alternate hypothesis that maintains CEO nationality has statistically significant effect on accrual earnings management of the firms under financial service sector of NEXG. The finding agrees with that of Orekhova, Kudin, and Kupera (2019), whose empirical result posit that foreign CEOs are faster to adapt to a new position that allows for improved profitability indices of their firms.

H4: CEO tenure has no significant effect on accrual earnings management of firms in financial service sector. More results on table 4.7 shows that CEO tenure with a regression coefficient of 0.058 implies that, the CEO tenure has positive effect on accrual earnings management of firms in financial service sector from 2012 to 2021 financial years. In effect, the extended tenure of the CEO allows them to manipulate the earnings of the enterprises within the financial service sector. The P statistics that have the value of 0.357 indicates that CEO tenure is not a strong determinant of accrual earnings management in the financial service sector. Based on the forgoing, the study accept that CEO tenure has insignificant effect on accrual earnings management of FSF in NEXG. The finding corroborates that of Amelia and Eriandani (2021), which has it that CEO turnover has insignificant impact on earnings management of the firms quoted on the Indonesian stock exchange.

5. Conclusion and Recommendation

The study undertook an investigation to unravel the characteristics of the CEO that influence the misrepresentations on the financial statements of the organisation as asserted in upper echelon theory. We sampled firms from financial service sector of Nigeria economy that has not been considered by researchers. The study sourced secondary data from financial statement of the firms' published within 2012 and 2021. OLS regression estimation technique was used for making inferences after testing for the assumption OLS regression. The study drew conclusion that CEO ownership, CEO gender diversity and CEO nationality are very crucial attributes that were found to determine the risk of accrual earnings management inclusion in the financial statements of the financial service sector firms in Nigeria. It therefore recommends that.

1. The shareholders should make the CEO's take up good chunk of shares which will make them see the entity as their own and invariable reduce the agency cost and guarantee a financial statement

that is free from accrual earnings management.

2. Appointment of female CEO should not be made a priority since the study did not find them a veritable instrument for preparing financial statements that is free from accrual earnings management.
3. The shareholder is encouraged to consider appointing foreign CEO to their organisations, who have empirically proved to have less flair for financial statement accrual earnings management, and the outcome possibly, is made because of their orientations.
4. Tenure of the CEO can be decided by the shareholders to either be short or long, since neither of them has any strong influence empirically on the accrual earnings management on the financial service firms of Nigeria exchange group.

Limitations and Suggestion for Further Studies

The study used only 30 firms from the financial service sector, out of the entire 50 firms listed under the sector, because we were challenged by getting the data of all the firms. The result is valid though because the sample represents 60% of the population. The study therefore encourages further studies on larger number of firms for the purpose of this investigation, to know if the result would be the same with this study.

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AN EXAMINATION OF THE ENVIRONMENTAL SUSTAINABILITY DISCLOSURE, LOGISTICS AND SUPPLY CHAIN OPERATIONS IN NORTHERN NIGERIA: EMPIRICAL EVIDENCE FROM KADUNA STATE

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Abstract

The objective of the study is to examine the extent to which the supply chain, logistics and overhead operations in the north sustains the environment. Specifically, the research focused on Kaduna state. The research relied on a quantitative approach and used a pragmatic paradigm by combining 2 different data from the same primary source. The unilateral exploratory sequential research design was adopted, and the research method was an interpretive case study. Exploitation was used as a technique to analyse the unstructured primary data and multinomial regression was used to analyse the structured primary data. One of the findings revealed that low rate in fuel and paper consumption in the overhead operations of Kaduna state significantly influences environmental sustainability, however there are no carbon emission disclosure records to verify that. The implication of this finding on practice is that using fuel economy engine vehicles in logistic operations does less harm to the environment. The research concludes that the north is environmentally sustainable in its overhead operations, but it has no record of environmental sustainability disclosure. Kaduna state should sustain its efforts in lesser rate fuel and paper consumption in its overhead operations and then outline indicators on how it off set carbon by recording such activities and the amount incurred and saved.

Keywords: Environment, Disclosure, Sustainability, Logistics, Supply, Chain, Operations

1. Introduction

Being environmentally friendly by promoting its sustainability while conducting business operations has come to be accepted as a principle in the business world. Identifying environmental objectives and training staff on how to protect the environment and disclose sustainability activities are some of the ways in achieving environmental sustainability (Worika, and Etemire, 2020; Leke, & Leke, 2019; Oyebanji et al., 2017; Yang et al., 2015; Piecyk; & Mckinnon, 2015) and its disclosure. Logistics and supply chain that engage green or ecofriendly operations have been evidenced to sustain the environment (Björklund Forslund, & Isaksson, 2016; Beske, & Seuring, 2014). More so, the overhead expenditure incurred on meetings, reports, receipts, selecting suppliers, distribution of consumables in achieving the goals of logistics and supply chain operations



impacts the environment. Unfortunately, in northern Nigeria the focus is more on the publicity of distribution without commiserating such distribution with more of environmental sustainability information. This is not encouraging as this goes to show that the extent to which the north sustains its environment when it comes to using vehicles to make distribution is not documented. It is from this context that the following questions are raised: Do green supply chain operations promote environmental sustainability disclosure? Do green logistic operations enhance environmental sustainability disclosure? Do green overhead operations enhance environmental sustainability disclosure? Based on this question the following objectives is identified to establish whether green operations in logistic, supply chain and overhead operations influence environmental sustainability disclosure.

The finding is beneficial to northern state government including other state governments in Nigeria that have agencies identified for executing government procurement supplies and distribution. Management of such agencies will see the dire need to initiate and formalize green initiatives and green documentation regarding carbon emission offset and green gas reduction and disclosures.

Studies on green logistics and supply chain practices are well documented in the literature, some of them includes (Jum'a, Zimon, & Ikram, 2021; Anders'en, 2021; Aslam, Rehman, & Asad, 2020; Ikegwuru, & Henshaw, 2020; Habib, Bao, & Ilmudeen, 2020; Jazairy, & Haartman, 2020; Agyabeng-Mensah, Ahenkorah, Afum, Dacosta, & Tian, 2020; Fayezi, Stekelorum, El Baz, & Laguir, 2019; Alhamali, 2019; Channa, & Asim, 2019). To the best of the researchers' knowledge there exists a dearth or no studies on green overhead expenditure as a standalone variable. Secondly, most green studies are focused on profit making organisations, which makes the current study different because it examined government agency with logistics and supply chain mandate by providing empirical finding on green overhead practices. The study is in five sections; section one includes this paragraph, and it is the introduction of the research. Section two, review of literature is presented while section three shows the methodology and section four presents and discusses the findings including their implication on practice and theory. Section five concludes and provides recommendations on the findings.

2. Literature Review and Hypotheses Development

In this section, the operational definition, some empirical studies, and theories on the research concepts are presented including the hypotheses formulated for the study.



2.2.1 Environmental Sustainability Disclosure ESD: Bateman et al, (2017) defines it as the various means used by business to reveal their environmental mitigation activities to stakeholders. It is seen as maintaining the environment by reducing the impact of carbon emission, waste and using renewable sources of energy in business operations (Ahmed & Najmi, 2018; Tachizawa, Gimenez, & Sierra, 2015) and revealing the operation. It is also using environmental specification, echo friendly procedures to run business operations (Voinea et al., 2020; Maleki Minbashrazgah & Shabani, 2019; Zhu et al., 2008). It is the consistency and dedication of all levels of a business management to reduce negative operational impact on the environment (Yang et al., 2019; Longoni, Luzzini, & Guerci, 2018; Vanalle & Lucato, 2017). We see it as the efforts put in by business to maintain the environment during its operations and reporting such efforts to interested party.

2.2.2 Green supply chain operations GSCO: It is defined as the echo friendly procedures used to carry out inbound and outbound operations which includes integrating supplier and customer into the supply chain design, production, recovery after delivery (Saeed et al, 2018; Masudin et al., 2018; Kaur et al, 2017; Sarkis, Zhu, & Lai, 2011) in order to continuously improve procedures to achieve compliance in sustaining the environment (Alhamali, 2019; Mumtaz, Ali & Petrillo, 2018; Chu et al, 2017). We see it as collaboration between the business, its customers, and suppliers on conducting operations that continuously have less impact on the environment.

2.2.2.1 Environmental Sustainability Disclosure and Green supply chain operations

On green manufacturing Ikegwuru, and Henshaw, (2020) sampled 90 restaurants and questioned 490 employees. They used regression as a technique. On eco design Alhamali, (2019) questioned 278 employees of a food processing enterprise and Fayezi et al., (2019) questioned 108 employees of a manufacturing firm, these studies used SEM as technique to evidence that green manufacturing, eco design significantly influence environmental sustainability. On supplier relationship, green product innovation and customer cooperation Anders´en, (2021); Channa, and Asim, (2019) relied on survey as a method to collect primary data and used SEM as a technique of data analysis to show that supplier relationship supports green product innovation and customer cooperation significantly relates to sustainability of the environment. While these studies did not factor in the disclosure of sustainability, the current study is different by evidencing that green supply chain operation and practices can influence environmental sustainability disclosure.

From another perspective, studies that relied on secondary data include Shi, et al (2022); using Thomson Reuters suppliers' environmental ratings and financial statement data to examine 717 firms across 23

countries for the period 2013-2017. Acar and Temiz, (2020) used Clarkson et al (2008) disclosure index and extracted data from financial statements of the sampled 133 firms for 12 month period. Kalash, 2020 extracted data from financial statements of 66 firms for the period 2014-2018; Longoni, and Cagliano, (2018) surveyed 134 respondents and used secondary data and hierarchical regression to evidence that green supply chain operations significantly influence disclosure while Shi, et al; Kalash; Acar and Temiz used regression as a technique to establish that larger firms and environmental performance significantly influence environmental sustainability disclosure. This study differently examined a government agency using qualitative and quantified data from the same primary source. This study hypothesizes that:

H0₁ Environmental sustainability disclosure ESD is not significantly influenced by green supply chain operations.

2.2.3 Green Logistics Operation GLO: It is seen as the flow of products, semi-finished products or raw materials in and out of the supply chain that can be used or reused (Hervani & Helms, 2005), procured, stored, packaged, distributed, circulated, marketed, recovered and reversed (Foo, Kanapathy, Zailani, & Shaharudin, 2019; Green, Inman, Sower and Zelbst 2019; Björklund, Forslund, & Isaksson, 2016; Zhu et al., 2015). We see it as supply chain inflow and outflow of inventory that is raw, semi-finished or finished product that can be reused, recycled, recovered, packaged, stored, marketed, transported, and distributed.

2.2.3.1 Environmental Sustainability Disclosure and Green logistics operations

Greenan, et al (2020) used secondary data by adopting the global reporting index GRI and logistic performance index LPI to examine 117 countries for the period 2007- 2016 and found that green logistic performance significantly influences environmental sustainability reporting. On green procurement practices Oyewobi, Ija, and Jimoh, (2017) collected primary data from 116 respondents from the construction sector; principal component analysis was used as technique of data analysis to reveal that environmental sustainability is influenced by green purchases. On green transportation, distribution and warehousing Jazairy, and Haartman, (2020) examined 20 logistics experts from 3 shippers and 5 logistic service companies, Shibin et al., (2020) surveyed 205 senior automotive SMEs managers, Agyabeng-Mensah et al, (2020) examined 200 managers on warehousing and optimisation. These studies used PLS as a technique of data analysis to show that green transport, optimization, warehousing, and distribution significantly influence environmental sustainability. Except for the study of Karaman, who evidenced disclosure is determined by green logistic operation Shibin et al; Jazairy, and Haartman, Oyewobi, Ija, and Jimoh only focused on sustainability not disclosure. This makes our study different because it provided findings on

disclosure by examining a government agency unlike these studies that examined companies with profit objectives. This research hypothesizes that:

H0₂ Environmental sustainability disclosure ESD is not significantly influenced by green logistics operations.

2.2.4 Green Overhead Operations GOO: Corporate, (2021) defines it as a reoccurring supporting expenses for generating revenue. It is the expenditure incurred daily or frequently on fuelling organisation vehicles which are scope 1 emission source for transport and distribution. Scope 3 indirect emission source not controlled by an organisation like stationery and paper used for taking minutes, vouchers, and receipts are considered overhead. Daily consumption of utility like power and water are considered overhead. We define GOO as the daily distribution and transportation of consumables using fuel economy and efficient engine vehicles, monitoring and reporting transactions using electronic means powered by renewable energy sources. This study provides findings on green overhead expenditure by hypothesizing that:

H0₃ Environmental sustainability disclosure ESD is not significantly influenced by green overhead expenditure.

2.3 Theoretical Framework

The natural resource-based view theory underpins the study variables. This is because ESD is influenced by pollution prevention. The theory was propounded by Hart, (1995) who demonstrated that natural resource simply meant business strategies that include environmental sustainability policies at the core of competitive organisational objectives depending on three main practices; prevent pollution, product stewardship and sustainable development. Studies of Olatunji et al., (2019); Alhamali, (2019) have used this theory to examine carbon efficiency objectives in automobile and product design aligned with competitive advantage of an organisation.

3. Methodology

3.1 Research Approach, Paradigm, Data Source and Method: The study uses a mixed approach influenced by a pragmatic paradigm because it combined two different data from primary sources. The research method adopted is an interpretive single case study of Kaduna state health supplies management agency KADHSMA. The choice of the method is influenced by the fact that the study is a multiple reality research that directs its research questions to documents and participants who have experienced the problem investigated.

3.2 Research Design: The research design for the study is a unilateral exploratory sequential design (Kwanbo et al, 2022; Creswell, et al, 2003). The design was chosen because the study uses 2 types of data;

qualitative (collected from participants using unstructured interview) which was analysed and structured questions were created therefrom and used to collect the second type of data which is quantified data to make clear the relationships established in the qualitative data. Also, the design allows for the integration of the findings from the 2 data.

3.2.1 Population and Sample Size and Technique of Data Analysis: The data collection was done at different times making it possible to make a sample for collecting the unstructured and afterwards the structured data. For the unstructured data collection, we took 10% of 48 employees of KADSMA and arrived at 4.8 which is approximately 5. The choice of selecting 10% is influenced by the positions of Creswell (1998), and Boyd (2001), recommendation of 2 to 10 participants as acceptable for an unstructured data collection. For the structured or quantified data collection we took an error of margin of 0.7% of the total population 303 (which includes KADHSMA's 213 health facilities, 48 employees, 42 suppliers and distributors) using Smith,(1983) formula $1 + N(b)^2$ where: N = population; b = error of margin, substituting we have $1 + 303(0.7)^2 = 1 + 303(0.49) = 1 + 148.47 = 149.47 =$ sample size of 150 participants for the structured interview. We chose 0.7% as the error of margin because we envisioned not all the participants will be willing to participate. The research discreetly analysed the unstructured data using reduction, classification, and interpretation as techniques. For the structured data analysis multinomial regression technique was used because the study has a dependent variable with more than 2 categories of responses.

3.2.2 Construct Measurement and Model Specification: It is important to note here that unstructured data are not a basis for measuring constructs or variables, responses are reported as findings the way they were collected but the structured data are scaled on 1 to 5 and these figures are used to measure the construct ESD, GSO, GLO and GOO. ESD is a function of GSO, GLO and GOO mathematically presented as $ESD = f(GSO) + (GLO) + (GOO)$. The following model is specified:

$$P_t E(y = 1/GSCO_t, GLO_t, GOO_t) = \frac{1}{1 + e^{-ESD_t}}$$

Where: P_t = Probability of being green by the agency; $E(Y)$ = cumulative probability function that take values between 1, 2, 3, 4, and 5; e = exponent and

$$ESD_t = \beta_0 + \beta_1 GSCO_t + \beta_2 GLO_t + \beta_3 GOO_t + \mu_t$$

Where:

β_0 = Constant; $\beta_1, \beta_2, \beta_3$ = Coefficients of parameters; ESD = Environmental Sustainability Disclosure; $GSCO$ = Green Supply Chain Operations; GLO = Green Logistics Operations; GOO = Green Overhead Operations; μ = error term

Questions were structured with predetermined responses on a scale of 1 to 5. These questions emanated from the main questions asked on how GSCO, GLO and GOO explain ESD as follows: Do green supply

chain operations promote environmental sustainability disclosure? Do green logistic operations enhance environmental sustainability disclosure? Do green overhead operations enhance environmental sustainability disclosure?

4. Results and Discussion

This section presents the results and discussion. Firstly, the analysis of the unstructured or qualitative data results are presented in Tables 1 and 2 and then the quantified data results in Table 3 afterwards an integration discussion of both the unstructured and structured findings leading to addressing the research questions and hypotheses testing are presented.

4.1 Reliability and Validity of Data

On reliability of the collected unstructured data, care full and exhaustive steps were taken to capture and record responses for ease of recovery and uniformity in reporting responses as captured. More so document review and observation were engaged as combined techniques of data collection. On validity and reliability of the structured or quantified data, the collection instrument was subjected to a test that confirmed a Cronbach's alpha value of 0.84 see table 3. Also, the internal reliability consistency of the constructs of the variables ES, GSCO, GLO and GOO have alpha value above 0.90 signifying that they are closely related as a group to establish findings. The goodness of fit Pearson value was 0.34; this is not significant, which proves that the data collected fits the model. The parameter estimate indicates, the standardized errors of GSCO as 0.37, GLO as 0.47 and GOO as 0.94, except for GOO the values of GSCO and GLO are less than 0.5 this shows that Multicollinearity is not a problem.

4.2 Qualitative Data Results

Table 1 shows the interviewees section, experience and qualification.

Table 1

Intervie wees	Section Head	Work Experience	Highest Qualification
1	Admin	8 years	B. Pharm
2	Finance	7 years	BSc
3	Distribution	6 years	B. Pharm
4	Warehousing	4 years	B. Pharm
5	Procurement	5 years	B. Pharm

Source: Field work, 2021

Tables 2 show the theme and findings from the interview. Columns one and two of the tables show the emerging themes and findings. Columns three to seven shows the participant numbers indicated in table 1.

The columns are used to reveal which participant the theme emanates from and is indicated with an **x**. In explaining the absence of formal objectives in achieving environmental sustainability objectives, **interviewee 1** said that *'Green objectives not in existence in a formal sense, we do not have an SOP on environmental sustainability, but we are environmentally concerned because we engage in online meetings, project meetings we do not consume paper we encourage online submission of tenders to reduce more vehicles used for physical submission'*. Also, **interviewee 2** revealed that *'fuel consumption records exist but not emission records and so the only information we can truly disclose is having efficient vehicles for distribution'*. **Interviewee 5** expressed that *'supplier relationship is more with NAFDAC who certify the suppliers the agency selects to procure drugs in this regard, Interviewee 4* revealed that *'they have a green relationship with customer when they return cartons to the agency for repackaging of drugs.*

Table 2 Interviewees

Green supply chain, logistics and overhead operations

Theme: green objectives not formally documented to achieve environmental sustainability disclosure		Interviewees from table 2				
Themes	Findings	1	2	3	4	5
Green objectives not formalised	We are green inclined; our operations are most times conducted on green principles, but we do not have them written as SOP not even in our mission and vision statement.	x		X	x	x
Supplier relationship and customer cooperation	The agency partner with NAFDAC and NESREA for the certification of our green suppliers and destruction of expired drugs and with KEPA for waste management and cleanliness, we do not share green information with our suppliers, we are yet to start manufacturing drugs.	x		X	x	x
Green Distribution and warehousing	Our customers who are the health facilities return carton to us for repackaging of drugs. Vehicles with efficient engines that emit less greenhouse gases due to low fuel consumption are used for distribution. Consumption data is used to make shipment which reduces wastages and expiry rate. The warehouse location is environmentally friendly and of pharmaceutical grading built to emit less heat into the environment.	x	x	x	x	x
Emission management and records	Fuel consumption records are available, but emission records are not let alone disclosing such information.	x	x	X	x	x
Green maintenance	Routing optimising is used for distribution of drugs using new vehicles with efficient engine, this reduces maintenance cost. We engage online meetings and	x	x	X	x	x

encourage online application and submission of tenders.

Source: Excerpt from Interview Transcription, 2021

4.3 Quantified Data Results

In table 3, the entire mean is higher than the standard deviation, this shows that the explanatory constructs can explain ESD. Nagelkerke R square has the highest prediction, this shows that it is better, and the model explains .99% of the variance in ESD which is correctly classified at 77.3%. The overall fit of the Nagelkerke model is indicated by the Pearson statistics significance which is at 0.347 which is not statistically significant. This shows that the data collected fit the model. The chi-square significance of green supply chain operations and green logistics operation are 0.52 and 0.80 respectively, this is not significant but that of overhead operation is 0.04 which is significant. This implies that we fail to reject hypotheses 1 and 2 but rejected hypothesis 3.

Table 3 Descriptive and Inferential Statistics (Multinomial regression technique see 3.2.1)

Construct	Mean Range	Std. Dev Range	Std. Errors	Alpha	Likelihood Ratio Test sig.
ESD	4.68-4.74	0.46-0.53		0.97	
GSCO	1.34-1.39	0.69-0.79	0.37	0.94	0.525
GLO	1.30-1.41	0.62-0.68	0.47	0.93	0.801
GOO	1.26-1.31	0.57-0.61	0.94	0.92	0.044
Pseudo R²:					
Cox and Snell	0.068				
Nagelkerke	0.099				
McFadden	0.061				
Pearson Sig	0.347				
Overall: % classification	77.3%				
Cron-bach Alfa	0.87				

Source: SPSS output listing, 2022

4.4 Addressing Questions and Hypotheses Testing

On the research question 1: Do green supply chain operations promote environmental sustainability disclosure? No, the study's findings on table 2 indicate that the examined agency does not have formal principles on green supply chain operations as a result green relationship with their suppliers does not exist because they are yet to start manufacturing drugs. Though they have a green relationship of cooperation with their customers who are Kaduna state health facilities that return cartons for repackaging drugs, there are no records indicating disclosure of environmental sustainability. Secondly in table 3, the significance level of the likelihood ratio test revealed a non-significance value of 0.525 which directed the failure to reject the null hypothesis 1. This finding does not support Shi, et al (2022); Acar and Temiz, (2020); Longoni, and Cagliano, (2018).

On the research question 2: Do green logistic operations enhance environmental sustainability disclosure? No, the study's findings on table 2 indicate that the examined agency does not have formal principles on green logistics operations. Though they have a warehouse that is built to emit less heat and use optimization and efficient vehicle engine to engage distribution, there are no records indicating disclosure of environmental sustainability. Secondly table 3 significance level of the likelihood ratio test revealed a non-significance value of 0.801 which directed the failure to reject the null hypothesis 2. This finding does not support Karaman, et al (2020); Longoni, and Cagliano, (2018).

On the research question 3: Do green operations enhance environmental sustainability disclosure? Yes, the study's findings on table 2 indicate that the examined agency does have vehicles with efficient engines that consume less fuel with low maintenance rate for distribution. Furthermore, the agency consumes less paper in conducting meetings and rely more on electronic platforms to send invite for tenders and submissions and keep fuel consumption records. Secondly table 3 significance level of the likelihood ratio test revealed a significance value of 0.044 which directed the rejection of the null hypothesis 3. This finding generally supports studies that have evidenced any green operations influence ESD Acar and Temiz, (2020); Shi, et al (2022); Agyabeng-Mensah, et al. (2020); Karaman, et al (2020); Ikegwuru, and Henshaw, (2020); Jazairy, and Haartman, (2020); Shibin, et al. (2020); Longoni, and Cagliano, (2018); Oyewobi, Ija, and Jimoh, (2017).

4.5 Implication of Findings

On practice, the findings of GSCO and GLO implies that the absence of a formal green principles that is captured in the mission and vision statement as well as the overall objective of the agency that encourages proper record keeping of emission management and disclosure cannot yield environmental sustainability disclosure. However, the findings on GOO implies that using efficient engine and optimization in distribution, using consumption data to reduce waste and expiry rate and having a warehouse that emit less heat to the environment and the reliance on electronic procedures than consuming many papers to conduct meetings are good practices of green operations.

On policy, the findings of GSCO and GLO on considering or selecting a supplier with National Agency for Food and Drugs Administration and Control NAFDAC certification by Kaduna state health supplies management agency KADHSMA implies that the policy is not adequate, because it did not consider National Environmental Standards and Regulation Agency NESREA certification as a criterion for selection. Having these two regulatory certifications as criteria for selecting suppliers will make the policy adequate and in the right direction because such certification includes customer consumption safety and environmental protection during manufacturing which are components of eco-design of products in a supply chain. Also the finding

implies that the policy of the agency to partner with Kaduna State Environmental Protection Agency KEPA and NAFDAC to destroy expired drugs is in the right direction.

Theoretically, the findings provided another perspective to the natural resource-based view NRBV theory that in practice service-based organisations of government engage pollution prevention practices without making such practices the core of their organisational objectives. This study validates the theory by revealing that pollution prevention practices of using efficient engines vehicles and consumption data for distribution, less fuel and paper consumption, online meetings, and submissions, optimizing of delivery routes and housing a warehouse that is built to emit less heat to the environment, keeping emission management records influence significantly environmental sustainability disclosure.

5. Conclusions and Recommendation

The study is a mixed approach research that relied on a pragmatic paradigm to examine whether green operations in logistic, supply chain and overhead expenditure influence environmental sustainability disclosure. Findings reveal GOO influence ESD while GSCO and GLO do not. Based on these findings the study concludes that the absence of formalized green principles inhibits the disclosure of environmental sustainability information while green overhead operational practices can promote ESD. In other words, we conclude that the north is environmentally sustainable in its overhead operations, but it has no record of environmental sustainability disclosure. The study recommends that the National Environmental Standards and Regulation Agency NESREA certification should be included as one of the criteria used in selecting suppliers. Green practices should be formalized as principles and presented as SOP for the conduct of green operations that will promote green disclosures. More so, Kaduna state should sustain its efforts in lesser rate fuel and paper consumption in its overhead operations and then outline indicators on how it off set carbon by recording such activities and the amount incurred and saved. The limitation of this study lies in its ability to examine a single agency and its customers and suppliers. Further studies should engage a multiple case study research by going beyond Northern Nigeria.

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LIQUIDITY, PROFITABILITY, ASSET STRUCTURE AND DEBT-EQUITY MIX OF LISTED NON-FINANCIAL COMPANIES IN NIGERIAN

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Abstract

This paper sought to empirically analyse the influence of liquidity, profitability and asset structure on debt-equity mix of non-financial listed companies in Nigerian. The authors used deductive and quantitative approach, focusing on population of 123 quoted companies in Nigeria that are non-financial between 2006-2020, from which only 58 firms that satisfied selection rules set were chosen as sample for this study. A generalized method of moments techniques was employed. The findings revealed that lagged value of long-term debt to Asset is positive and significant, liquidity, return on equity and non-current assets are positive and significantly related to long term debt to asset. Return on asset and tangibility are negative and significantly related to long term debt to asset. When long term debts to equity was taken to represent debt equity mix, findings showed that lagged value of long-term debt to equity is negative and significant, return on equity is negative and significant, liquidity, return on asset, tangibility and non-current assets were positive and significant. This paper recommended that Nigerian companies should consider many proxies for both dependent and independent variables and select the most appropriate variable that will minimize cost of capital and maximize the firms value in their financing decisions.

Keywords: Asset-structure, debt-equity-mix, liquidity, profitability, non-financial firms.

1.0 Introduction

Debt equity mix is the combination of long-term debt and equity, which are used by companies to fund their investments and grow their businesses. It is made up of shares (both equity and preference), debentures, bonds, long-term loans, retained earnings from operations, and loans from individuals and institutions. It is a combination of different types of long-term sources of funds. A robust debt-equity mix is very important for the company as it helps to maximize the shareholder's capital while minimizing the cost of capital for the company. Permanent financing is a big part of figuring out how much a company is worth, and finance managers must make very important decisions about the right mix of financing. Most businesses have a goal for their capital, even though the mix of debt and equity may change over time.

The groundbreaking article of Modigliani and Miller (1958) disclosed the irrelevance of debt-equity mix to firm's value and cost of capital. Strong assumptions such as, perfect capital market, no transaction cost, no taxation, no bankruptcy cost, no information asymmetry, and no friction in the capital market were made. Modigliani and Miller (1958) argued that the source of the money used to make investments has no effect on the market value of the firm, because, in a perfect capital market, investors can borrow and lend money at

the same rate of interest to counteract the financial decisions made on the choice of finance. In the same way, the weighted average cost of capital will not change no matter how much equity and debt a company has, because the effect of a decrease in the cost of debt will be canceled out by an increase in the cost of equity. Modigliani and Miler (1963) posited that in the event of corporate taxes, interest payments on debts are tax-deductible expenses, which implies that as debt increased, the market value of the firms' increased due to the debt tax shield. The optimal capital structure is obtained when there is a minimal cost of capital and an increase in the value of the firm.

An assessment of company's profit in relation to its expenses is Profitability. Excess of revenue generated from production of goods and services over its attributable expenses is profit. Profitability is the ability of the firm to produce income more than expenses incurred in generating such income (Owolabi., Obiakor., & Okwu, 2011). Profit is the outcome of successful deployment of the firm's scarce financial resources to its operating activities. Profit making is the essence of setting up any business venture and it's a crucial indicator of success in any organization. A vital goal of setting up a company is to achieve profit, maximize the profits as well as firms value. In enhancing the firm's value, management needs to set and implement the right strategy needed to attain this (Prasetyorini, 2010). The ability of the firm to generate high profit enhances the firm's value and serves as a vital tool for assessing the efficiency and effectiveness of management in running the affairs of the company (Andriani, 2017). Good performance will be reflected in the ability of management to generate maximum profit for the company (Hery, 2016). High profit firms use their internal equity to finance their operations and are most likely use less debt nor issue external equity to run the affairs of the company. The capability of firms to settle its short- and long-term obligations as at when due is Liquidity. The measuring tool for liquidity is the amount of current assets possessed by the firm, which can be converted to cash easily without losing its value.

The availability of Cash for immediate usage makes it the most liquid asset, it can be used for instant settlement of all obligations. Chasanah and Satrio, (2017), opined that companies having adequate liquidity need not borrow loan nor issue new shares, other than using retained earnings to finance its operations. This implies that high liquidity reduces debt level. Timely Stock disposal in security market without negative influence on its price signifies the liquidity content of such stock.

The wealth of the firm, having future benefits, such as fixed Assets, intangible assets, current assets, and other assets are known as Asset Structure Kesuma, (2009). Asset structure represents assets owned by a

firm with future benefits, firms having many assets invariably possess collateral that can be pledged as security for obtaining loans., hence they made use of debts in financing their operations Firms having many assets can use such assets maximally in production, and have high profits therefrom (Karima & Khafid, 2015). Asset structure means the ratio of different assets in a firm's total assets, that is, the ratio of fixed investment, securities- investment, and liquidity investment. Asset structure is measured as the proportion of property, plant and equipment, other assets, and current assets to Total Assets.

2.0 Review of Literature

2.1 Conceptual Review

2.1.1 An Optimal debt-equity mix

An Optimal debt-equity mix is the mix of debt and equity financing that minimizes the weighted average cost of capital and enhances the value of the firm. The effort of finance manager in setting suitable targets and continuous adjustments of the targets for equity and debt mix is to achieve optimal capital structure. In other to maximize the intrinsic value of the firm, the weighted average cost of capital must be reduced to the lowest level. When this point is reached, the optimum debt-equity mix is achieved. Optimum debt-equity mix as defined by Parmasivan and Subramanian, (2009) is the debt-equity mix level that assures the maximization of the shareholders' wealth as well as enhancing the value of the firm at the lowest weighted average cost of capital.

2.1.2. Liquidity and debt-equity mix

An organization's liquidity denotes the capability of the organization to meet its short-term debts and other obligations. According to Kimondo, Irungu, and Obanda (2016), an optimal level of liquidity is essential for promoting profitability and enhancing the welfare of shareholders and the value of the organization. Sound financial management enables the firm to plan, organize and apportion funds to easily meet their financial commitments as at when due and build a good financial credibility image (Akenga, 2017). Liquidity is the degree to which an asset can be bought or sold in the market without affecting its price. Ideally, the more liquid the firm is, the less leveraged it is. A company that has high liquidity means that it can pay the short-term debt, so it tends to reduce total debt.

2.1.3 Profitability and debt-equity mix

A profit is the difference between the revenue that a company has received from its outputs and the opportunity costs of its inputs. It equals to total revenue minus total costs, including, both explicit and implicit costs. The higher the profitability, the higher is the amount of internal fund from the retained earnings, decreasing the proportion of debt in the debt-equity mix. Pecking order theory predicts that there should be a negative relationship between profitability and leverage, since the order have preference for internally generated form of finance over external funds. Profitability is related to availability of internal funds and may therefore be related to less leverage with respect to pecking order theory, Fama & French (2002) as well as Liou et al., (2016) found that profitability is negatively and statistically significant with debt issues on the balance sheet.

2.1.4 Asset Structure and Capital Structure

Tangible asset is an asset that has physical substance, it refers to the proportion of fixed assets in a firm's total assets, firms acquire fixed assets for their production activities as they grow older, the magnitude of these fixed assets can be considered by its creditors as a guarantee that will allow them to recover their funds in case of financial distress experienced by the borrower (Erika, 2019). More tangible assets also alleviate conflicts between debt holders and shareholders, while creditors also have renewed guarantee of repayment, since tangible assets serves as collateral against inability to repay (Jensen & Meckling, 1976). Trade-off theory predicts and supports a positive relationship between tangibility and leverage. In the same vein, managers of highly geared firms are cautious of the danger involve in their inability to pay fixed interest to debt holders who are closely monitoring their activities, such managers are not able to consume perquisites of office in excess, (Grossman & Hart, 1982). Pecking order theory on the other hand predicts an inverse relationship between capital structure and asset tangibility. This may be due to low information asymmetry in respect of tangible assets, making cost of equity issuance lesser. Leverage ratios should therefore be lower for firms with higher tangible assets (Frank & Goyal, 2009)

2.2 Theoretical Framework

This study is based on two theories below.

2.2.1 Pecking order Theory (Asymmetric information model)

The pecking order theory, which was first proposed by Donaldson in 1961 and later improved by Myers and Majluf in 1984, explains how managers choose to finance their investment opportunities, it posits that

managers prefer to pay for their investments first with money from inside the company, like retained earnings, and then with money from outside the company, like debt or equity.

This preference comes from the idea of information asymmetry, which says that managers know more and better information about the company than people outside of it. This creates an imbalance in transaction power, which makes managers prefer to do business with themselves. External stakeholders want higher returns to make up for this, so internal financing is the cheapest and most convenient way to get money.

When they need outside funding, managers prefer debt over equity because debt costs less than equity. Debt holders want a lower return than shareholders, who want a higher return because they have less of a right to assets if the company goes bankrupt. When a company issues debt, it shows that they are confident in the investment and may mean that the stock is undervalued.

In contrast, the issuance of equity sends a negative signal, indicating an overvalued stock, and managers are hesitant to issue equity if they believe the market has underpriced it. This is because underpricing may lead to new investors capturing more than the net present value of the project, resulting in a net loss to existing shareholders.

2.2.2 Trade-off Theory

The trade-off theory posits that firms strive to achieve an optimal balance between the benefits of the tax shield from debt financing and the costs associated with financial distress, bankruptcy, and agency conflicts. The theory dates to Kraus and Litzenberger (1973) and is often regarded as a competing theory to the pecking order theory. The optimal debt-equity mix is reached when the present value of the tax shield is equal to the present value of the financial distress costs, and firms seek to adjust their levels of debt and equity to achieve this balance. The deduction of interest payments on debts from taxes encourages firms to borrow more up to the point where the present value of the debt tax shield is offset by the value loss due to financial distress costs and bankruptcy. In addition to the tax benefits, debt financing also has a disciplinary role by reducing free cash flow and encouraging firms to make more disciplined investment decisions (Gansuwan & Onel, 2012). The trade-off theory shows how important it is to find a balance between the different benefits and costs of debt financing to find the best capital structure.

2.3 Empirical Review

Empirical studies revealed mixed findings of the association among liquidity, profitability, asset structure and debt-equity mix. Among such empirical findings are the following:



Odukwu et al., (2022). examined the impact of liquidity and profitability on profits growth of Nigerian Pharmaceutical firms in Nigeria, using six quoted pharmaceutical companies in Nigerian. The results revealed that the current and quick ratios for liquidity had a significant relationship with the profitability ratio proxies by net profit margin and asset returns. Sutardjo & Afriyani, (2019). investigated the impact of liquidity and firm size on profitability and corporate value in the Indonesian financial firms. The paper focused on forty listed firms on Indonesia stock exchange, using structural equation modeling and Analysis moment structure. The results revealed that liquidity and profitability are positive and significantly related, but liquidity is negative and insignificantly related to firm value; profitability and firm value are positive and significantly related.

Kuria and Omboi, (2015) examined relationship between profitability and liquidity of banking and investment companies quoted on Securities Exchange in Kenya's Nairobi from 2009 to 2013, using inferential analysis and correlation techniques. Results revealed that debt to capital and debt to equity ratios had negative and significant relationship with asset returns, however there is no such link with long term debt. The debt-to-equity ratio of another model revealed a significant relationship with returns on equity, while the debt to capital ratio and ROE has a significant and negative relationship.

Cicilia and Fachrurrozie, (2021). examined the impact of profitability, liquidity, and Asset structure on capital structure with moderating variable being firm size, focusing on all real estate and property companies quoted on the Indonesian Stock Exchange from 2014 to 2016. Findings revealed that liquidity, profitability, and asset structure had negative and significant relationship with capital structure, firm size successfully moderate significantly the impact of liquidity on the capital structure but could not moderate the impact of asset structure and profitability on capital structure.

Akinyomi and Olagunju (2013), examined the determinants of capital structure in Nigeria for 24 randomly selected manufacturing firms quoted in Nigeria for a 10-years 2003-2012, culminating into a firm-year observation of 240. Panel data estimation technique was employed for data analysis, the findings indicate firm size was inverse and significantly related with long term debt to assets, debt tax shield was inverse and insignificantly related, profitability and firm growth opportunities have positive and insignificant relationship, while assets tangibility has positive and significant relationship with long term debt to assets.

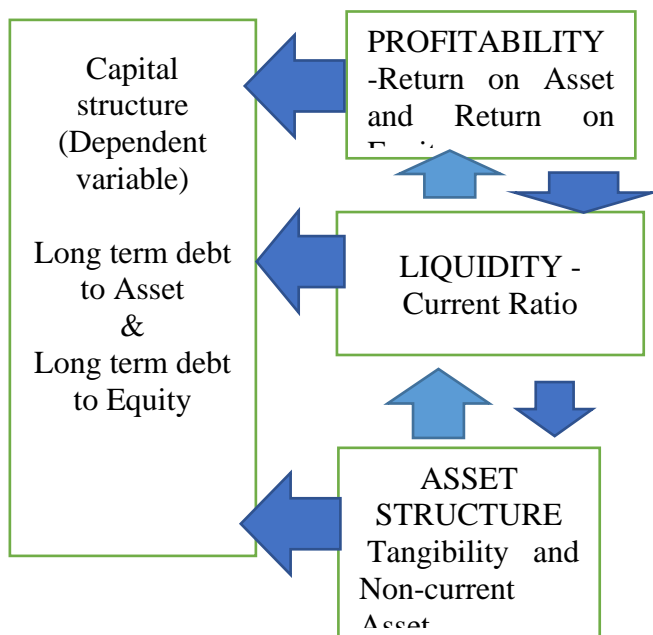
In India, Atif (2021) examined 'a study on the determinants of capital structure: evidence from India' using short term debt to total assets; long term debt to total assets and total debts to total assets as dependent variables (capital structure), the results indicates that Indian firms explore short term form of finance, while profitability, firm size, liquidity, tax rates and business risks were found to affect and have strong relationship with capital structure of Indian firms. In Spain, Liou, Cecilio, and Felix (2016) examined the determinants of

capital structure of 77 non-financial Spanish firms listed on Madrid stock exchange from 2001 to 2014, the study tested tangibility, size, volatility, profitability, Non-debt tax shield, growth opportunities and industry effective factors, it was found out that leverage have positive and significant relationship with size, Non-debt tax shield and industry effects have negative and significant relationship with profitability, growth opportunity and volatility. It was also observed that during the financial crises of 2008, the cost of financial distress was high.

2.4 Gaps in the Literature

Previous work done on capital structure mostly focused on developed nations, few work done in developing nations focused on other areas of capital structure research. This area of research have been neglected by previous researchers, this constitutes a gap that this work seeks to fill, In addition, most of the previous work used short term debt to assets, long term debt to assets and total debts to assets as proxies for debt-equity mix, few work focused on long term debt to equity, and since debt-equity mix is a mix of debt and equity, this constitutes another gap that has to be filled. This work used both long term debt to asset and long-term debt to equity as proxies for debt-equity mix in filling this gap.

2.5 Conceptual Model



3.0 Research Methodology

3.1 Research Design

The research design adopted in this study is deductive and quantitative approach, which is easy to explain based on data analysis results as well as easy to conclude. It is in line with the literature (Anjum et al., 2017; Hussain et al., 2017 & Maqsood et al., 2021). Characteristics of the data used for the study qualified it for a dynamic panel study. The longitudinal nature, that is fifteen-year time from year 2006 to year 2020 and the cross-sectional attributes, that is fifty-eight firms, substantiate the usage of dynamic panel technique.

3.2 Population of the Study

This comprises 123 non-financial quoted companies in Nigeria for the year 2006 to year 2020.

3.2.1 The Sample Size

The sample size was determined using judgemental/ purposive / inclusion and exclusion approach. Companies that have continuous data for fifteen years from year 2006 to year 2020 only were included, while newly listed companies not having adequate data for 15 years and repeated names of some firms were excluded, only 58 firms that had all the relevant data for all the research variables due to continuous existence for fifteen years, constitute the sample for the study.

3.2.2 Sampling Technique

Non-probability sampling/ randomization technique was adopted, this technique does not give equal and non-zero chances to all the individuals in the population to be selected in the sample. The above sample size approach is an example, where the sample is selected as per the judgement of the researcher based on certain criteria. Like this is convenience sampling, where samples are done as per the convenience of the researcher.

3.3 Data Collection Method

The study followed the scientific procedures for data collection, which is in line with past literature (Aqeel et al., 2022; Li et al., 2022; Yao et al., 2022). Secondary data (historical data) were collected in respect of dependent and independent variables from sampled companies' annual financial statements for the fifteen-year period covering the year 2006 to the year 2020. Secondary data usage provides systematic, empirical and unambiguous answers to research questions, since such data were independently provided by statutory auditors in audited financial statements. These reports are reliable, verifiable, and less prone to research manipulation. Examination of the data captured for the variables of interest from the audited financial statements of the sampled companies provides a basis for subjecting the hypotheses to robust and verifiable

empirical tests. Data for this study were obtained from the audited financial statements of each of the sampled companies as compiled by MachameRatios@database from official sources such as the Nigerian Exchange Group and Central Bank of Nigeria Statistical Bulletins for the year 2006 to the year 2020.

3.4 Data Estimation Method

3.4.1 GMM Analysis:

This study investigates liquidity, profitability, asset's structure, and debt equity mix of listed non-financial companies in Nigeria using Generalized Methods of Moments (GMM). This was used because, biases may exist in panel regression analysis, which could lead to inconsistent coefficient estimates across different techniques. Therefore, the System GMM estimation technique was used to estimate the dynamic panel model and correct for any possible biases. Previous research has identified IV estimator and 2SLS methods as effective tools for addressing endogeneity issues in panel regression analysis. However, these methods have a weakness in that they rely on "external" instruments, which are often weak and fail to meet the conditions of a good instrument. Specifically, it is difficult to find an instrument that is both correlated with the explanatory variable and uncorrelated with the error term, making it challenging to satisfy the exogeneity and relevance properties of a good instrument. GMM estimation techniques are more efficient than IV and 2SLS in the presence of heteroscedasticity. Therefore, the GMM technique was used to address endogeneity issues in this analysis and ensure the robustness of the results.

3.4.2 Multicollinearity Test:

This is a concept that indicates correlation among many independent variables in a model. Perfect collinearity exists in two variables, if their coefficient of correlation is +/- 1.0. The existence of multicollinearity among independent variables renders the statistical inferences less reliable. The variance inflation Factor (VIF) is recommended for examining the existence or otherwise of multi-collinearity. If the result of this VIF is above 10, then there is a challenge (Velnampy, 2011).

3.5 Model Specification

This study aimed at measuring the impact of liquidity, profitability and Asset Structure on debt-equity mix of quoted non-financial companies in Nigeria. To attain this aim, the models hereunder are specified.

Model one

$$LTDA_{it} = \beta_0 + \beta_1 LTDA_{it}(-1) + \beta_2 CUTR_{it} + \beta_3 ROET_{it} + \beta_4 ROA_{it} + \beta_5 TANG_{it} + \beta_6 NCAR_{it} + \varepsilon_{it} \dots \dots \dots 1$$

Where: LTDA = Long term debt to Asset.

Model two

$$LTDE_{it} = \beta_0 + \beta_1 LTDE_{it}(-1) + \beta_2 CUTR_{it} + \beta_3 ROET_{it} + \beta_4 ROA_{it} + \beta_5 TANG_{it} + \beta_6 NCAR_{it} + \varepsilon_{it} \dots \dots \dots 2$$

Where: LTDE = Long term debt to Equity.

3.6 Measurement of Variables and a priori expectations

3.6.1 Dependent Variables

3.6.1.1 Loan term debts to Assets ratio is a measurement representing part of a firm's assets financed with long-term debt, such as loans lasting more than one year. This ratio provides a general measure of the long-term financial position of a company, including its ability to meet its financial obligations for outstanding loans.

LTDA = Long Term Debt

Total Assets

Decrease in this ratio implies that the firm is becoming less dependent on debt to grow its business. A ratio result of less than 0.5 is considered good. It is a coverage or solvency ratio used to calculate the amount of a company's leverage. Prior studies that used long term debt to asset to represent debt-equity mix among many others include (Akinyomi & Olagunju, 2013; Arsov & Naumoski, 2016 & Cevheroghu-Acar, 2018).

3.6.1.2 Long term debt to Equity ratio shows how much of a business assets are financed by long term financial obligations, such as loans.

LTDE = Long term debt
Shareholders' Equity

Shareholders' equity is the total assets minus total liabilities. It is riskier if it has a high ratio. A good debt to equity ratio is anything lower than 1.0. A ratio of 2.0 or higher is usually considered risky. If it is negative, it means the company has more liabilities than assets and that will be too risky.

3.6.2 The Explanatory Variables

This consists of liquidity, profitability, and asset structure.

3.6.2.1 Liquidity: This is represented by current ratio, calculated as current Asset divided by current liability. It is the working capital available to meet short term obligations as they fall due. It refers to the efficiency with which an asset can be converted into cash without affecting its market price or cash itself. The trade-off theory's viewpoint is that companies with high liquidity should take up more debts in order to benefit from tax shield deriving from interest payment on debt and therefore have positive relationship with capital structure., Pecking order theory's preference for internal financing views that companies with high liquidity should reduce their leverage and make use of internal funding for their investment and therefore have negative relationship with capital structure.

3.6.2.2 Profitability: This is represented by both return on assets and return on equity. Return on asset is calculated as net income divided by total assets, while return on equity is calculated as net income divided by shareholders' equity. There is no consistent theoretical prediction on the effects of profitability on debt-equity mix. The Tradeoff theory predicts positive relationship on the premise that more profitable companies should use more debt to shield more income from taxes. Pecking order theory views that more profitable companies have lower need for external financing and should therefore have lower leverage.

3.6.2.3 Asset Tangibility is calculated as fixed asset divided by total asset, it shows the proportion of fixed assets in the total assets of the company, it is assumed that tangible assets can be used as collateral. Higher tangibility therefore lowers the risk of a creditor and increase the value of the assets in the case of bankruptcy. The more tangible the assets of the firm are, the greater its ability to issue secured debt and the less information is revealed about the future profits of the company. Several empirical studies support this position, such as Rajan and Zingales, (1995) as well as Titman and Wessels, (1988);

3.6.2.4 Non-current Assets are calculated as original purchase cost of long-term investment less depreciation. They are assets and properties owned by a business that are not easily converted to cash within a year. They may also be called long term assets, for long term use and are expected to generate income. They include bonds, shares, and other long-term investments as well as intangible assets such as copyrights and patents, they are always capitalized as balance sheet items and depreciated over their useful life. Pecking order theory predicts a negative relationship with debt-equity mix.

4.0 Results and Discussion of Findings

4.1 Descriptive Analysis

In this section, the descriptive statistics for both the explanatory and dependent variables of interest were examined. Each variable is examined based on the mean, median, maximum, minimum, and standard deviation.

Table 1 below displays the descriptive statistics for the variables that are used in this study. A critical examination of the descriptive statistics for the dependent and independent variables reveals several issues.

Table 1: Descriptive statistics

VARIABLES	MEAN	MEDIAN	MAXIMUM	MINIMUM	Std. Dev
LTDA	18.5426	12.8107	192.2804	-333.6500	25.1073
LTDE	-70.5832	27.5625	54397.6700	-148399	5665.8770
CUTR	1.4453	1.1784	38.6978	0.0239	1.8748
ROET	111.2980	11.1959	69701.1400	-2087.7000	2509.0370
ROA	3.6829	3.5754	176.2669	-71.3574	13.4393
TANG	40.4176	39.1863	114.9298	0.0790	23.4468
NCAR	48.8943	50.3239	95.7825	-66.8201	24.5190

Source: Author (2023)

Long term debt to asset (LTDA), revealed that the mean value of the sampled companies was 18.5426, this value is low, it can be stated that non-financial quoted firms in Nigeria do not use much long term debt in their respective debt-equity choice, most non-financial firms made use of short term loans and overdraft, which are rolled over many times, rather than employing long term loan. The median value was 12.8107, lower than the mean, the maximum value was 192.2804 while the minimum value was -333.6500, and the standard deviation was 25.1073. In the case of long term debt to equity (LTDE), the mean value of the sampled companies was -70.5832 while its median value was 27.5625, this explains the wide variation in the standard deviation of 5665.8770 from the mean. The maximum value was 54397.6700 while the minimum value was -148399.

For Liquidity (CURR), the mean value of the sampled companies was 1.4453 while its median value was 1.1784. The maximum value was 38.6978 while the minimum was 0.0239 and the standard deviation was 1.8749. The variation is not that far from the mean, however the range between the maximum for some firms of 38.6978 and the very low minimum of 0.0239 for others is not good enough. For Profitability (ROET) return on equity, the mean value of the sampled companies was 111.2980 while its median value was 11.1959. The maximum value was 69701.1400 while the minimum was -2087.7000 and the standard deviation was 2509.0370. The wide difference between the mean of return on equity of 111.2980 and mean of return on assets of only 3.6829, implies that most of the firms engaged equity in financing their operations rather than debt. It also implies that

every Naira invested in equity generates ₦111.2980 returns compared to same Naira invested in assets that generates only ₦3.6829 in earnings. Tangibility had a mean of 40.4176, median of 39.1863, maximum value of 114.9298 and a very low minimum value of 0.0790, the maximum value depicts big firms that have grown to acquire fixed assets that can be used as collateral for loan and reduces asymmetry information, as creditors are confident of recouping their money, in case of any eventuality, the minimum of 0.0790 depicts struggling firms that does not have much assets, the standard deviation is as much as 23.4468 from the mean.

4.2 Variance Inflated Factor and Value of Tolerance

VIF was used to test the presence of multi-collinearity. Field, (2009), as well as Hair et al., (1995), posit that this can be examined by applying VIF and tolerance level. If the VIF was more than or equal to 10 and tolerance was lower than 0.10, then presence of multi-collinearity is confirmed in the model. VIF for this study ranges between 1.01 and 2.79 and the tolerance ranges between 0.359036 and 0.986597, while the mean value of the VIF was 1.42, which is less than 10 and the tolerance greater than 0.10, thereby indicating the absence of multi-collinearity.

Table 2: VARIANCE INFLATED FACTOR AND VALUE OF TOLERANCE

VARIABLE	VIF	1/VIF
CUTR	1.13	0.884176
ROET	1.02	0.984209
ROA	1.38	0.722482
TANG	2.79	0.359036
NCAR	2.77	0.361531
MEAN VIF	1.42	

Source: Author (2022)

4.3 Econometric Analysis

MODEL 1:

$$LTDA_{it} = \beta_0 + \beta_1 LTDA_{it}(-1) + \beta_2 CUTR_{it} + \beta_3 ROET_{it} + \beta_4 ROA_{it} + \beta_5 TANG_{it} + \beta_6 NCAR_{it} + \varepsilon_{it}$$

GMM Result

Dependent Variable: LTDA				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTDA(-1)	0.287	0.021	13.668	0.000
CUTR	4.994	0.425	11.748	0.000
ROET	0.000	0.000	10.904	0.000
ROA	-0.268	0.054	-4.921	0.000
TANG	-0.061	0.030	-2.015	0.044

NCAR	0.486	0.039	12.515	0.000
Effects Specification				
Mean dependent var	0.269	S.D. dependent var	24.083	
S.E. of regression	26.285	Sum squared residual	500209.800	
J-statistic	42.476	Instrument rank	58.000	
Prob(J-statistic)	0.621			

Source: Author's Computation Using EViews

LTDA(-1): This variable captures the effect of the lagged value of LTDA on the current level of long-term debt. The positive and significant coefficient suggests that the level of long-term debt in the previous period has a strong influence on the current level of long-term debt. This could indicate that firms with a history of high long-term debt are more likely to continue to use long-term debt as a financing source.

CUTR: Current ratio measures a firm's ability to meet its short-term obligations with its current assets. The positive and significant coefficient implies that firms with higher current ratios tend to have higher levels of long-term debt. This suggests that firms use long-term debt to finance their short-term liquidity needs. This also implies that an increase in the ratio of working capital (Liquidity) of non-financial listed companies in Nigeria increases the debt-equity mix of such companies and the positive impact is also significant. This corroborates the trade-off theory. Empirical studies have also found a positive relationship between current ratio and long-term debt. This result agrees with prior empirical results which show that liquidity is a major driver of debt-equity mix. (Atif, 2021; Cevheroglu-Acar, 2018; Utami & Inanga, 2012).

Most specifically, the results did not tally with previous findings of various researchers that report that liquidity has no significant influence on debt-equity mix. (Abdullahi & Alifiah, 2020; Khaled & An-Nisha, 2021; Masooma, 2016).

ROET: Return on equity measures a firm's profitability in relation to its equity. The positive and significant coefficient suggests that profitable firms tend to have higher levels of long-term debt. This could indicate that long-term debt is used to finance profitable investments. Empirical studies have found mixed results regarding the relationship between profitability and long-term debt. For example, a study by Ashraf et al. (2022) found a positive relationship between profitability and long-term debt in Pakistani firms, while a study by Wang et al. (2018) found no significant relationship between profitability and long-term debt in Chinese firms.

ROA: Return on assets measures a firm's profitability in relation to its total assets. The negative and significant coefficient suggests that firms with higher return on asset tend to have lower levels of long-term

debt. This could indicate that firms with higher profitability have less need for external financing in line with pecking order theory. TANG: Asset tangibility measures the proportion of a firm's assets that are fixed or tangible. The negative and significant coefficient implies that firms with higher asset tangibility tend to have lower levels of long-term debt. This could indicate that firms with more tangible assets have less need for external financing as they can use their fixed assets as collateral for loans. Empirical studies have also found a negative relationship between asset tangibility and long-term debt. For example, a study by Wang et al. (2021) found that asset tangibility is negatively related to the level of long-term debt in Chinese firms.

NCAR: Non-current assets measure a firm's investment in long-term assets such as property, plant, and equipment. The positive and significant coefficient suggests that firms with higher non-current assets tend to have higher levels of long-term debt. This could indicate that firms use long-term debt to finance their investments in fixed assets.

Are Iano-Bond Serial Correlation Test

Test order	m-Statistic	Prob.
AR(1)	-1.066	0.287
AR(2)	-0.041	0.967

Source: Author's Computations Using E view

Based on these results, there is no significant evidence of first-order serial correlation (AR (1)) in the data, since the p-value associated with the AR(1) test statistic is larger than the usual significance level of 0.05. However, there is also no significant evidence of second-order serial correlation (AR (2)) in the data, as the p-value associated with the AR(2) test statistic is also larger than 0.05. Therefore, it can be concluded that there is no evidence of serial correlation in the panel data at either the first- or second order.

MODEL 2:

$$LTDE_{it} = \beta_0 + \beta_1 LTDE_{it}(-1) + \beta_2 CUTR_{it} + \beta_3 ROET_{it} + \beta_4 ROA_{it} + \beta_5 TANG_{it} + \beta_6 NCAR_{it} + \varepsilon_{it} \text{ -----}2$$

Dependent Variable: LTDE				
Method: Panel Generalized Method of Moments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTDE(-1)	-0.013	0.000	-1569.760	0.000
CUTR	224.744	1.365	164.633	0.000
ROET	-2.034	0.001	-2545.772	0.000
ROA	6.407	0.148	43.210	0.000
TANG	10.928	0.085	128.815	0.000
NCAR	23.599	0.093	253.141	0.000

	Effects Specification		
Mean dependent var	-10.948	S.D. dependent var	8326.472
S.E. of regression	3517.892	Sum squared resid	896000000.000
J-statistic	43.689	Instrument rank	61.000
Prob(J-statistic)	0.688		

Source: Author's Computations Using E-view

LTDE (-1): This variable represents the lagged value of the dependent variable, LTDE. The negative coefficient suggests that a higher value of the LTDE ratio in the previous period is associated with a lower LTDE ratio in the current period. This finding implies that companies may adjust their long-term debt levels to maintain a desirable debt-to-equity ratio over time. This finding is consistent with prior research by Li et al. (2022), who found that firms actively manage their debt levels to maintain target leverage ratios.

CUTR: The current ratio measures a company's ability to meet its short-term financial obligations. The positive coefficient suggests that higher current ratios are associated with higher LTDE ratios. This finding implies that companies with stronger liquidity positions may be more likely to rely on long-term debt to finance their operations. This result is supported by previous research, including the study by Al-Malkawi et al. (2021), who argued that companies with better liquidity are better able to service their debt obligations.

ROET: The return on equity, measures a company's profitability, that is, net income to shareholders equity. The negative coefficient suggests that higher profitability is associated with lower LTDE ratios. This finding implies that companies with higher profitability may be able to finance their operations with internally generated funds and may be less reliant on long-term debt. This result is consistent with previous research, including the study by Al-Malkawi et al. (2021). ROA: The return on assets measures a company's profitability, that is, net income to total assets. The positive coefficient suggests that higher profitability from total assets is associated with higher LTDE ratios. This finding supports the previous finding that higher profitability generally increases the need for long-term debt financing in line with trade-off theory. TANG: Asset tangibility measures the proportion of a company's assets that are fixed / tangible (e.g., property, plant, and equipment). The positive coefficient suggests that higher asset tangibility is associated with higher LTDE ratios. This finding implies that companies with more tangible assets may be more likely to rely on long-term debt financing, as these assets can serve as collateral for debt holders. This result is consistent with previous research, including the study by Al-Malkawi et al. (2021), Chen et al., (2021), Khaled & An-nisha, (2021) Choi, (2014) among others.

NCAR: Non-current assets represent long-term investments that cannot be easily converted into cash. The positive coefficient suggests that higher non-current asset levels are associated with higher LTDE ratios. This finding implies that companies with more non-current assets may be more likely to use long-term debt financing to support these investments. This result is also consistent with previous research, including the study by Al-Malkawi et al. (2021).

Arellano-Bond Serial Correlation Test

Test order	m-Statistic	Prob.
AR(1)	-0.02	0.98
AR(2)	NA	NA

Source: Author's Computations Using E view

Based on these results, there is no significant evidence of first-order serial correlation (AR(1)) in the data, since the p-value associated with the AR(1) test statistic is larger than the usual significance level of 0.05. However, there is also no significant evidence of second-order serial correlation.

5.0 Discussion of Major Findings

Significant Findings: The findings that are crucial include the following: The study used panel generalized method of moments (GMM) estimation technique to investigate liquidity, profitability, asset structure and debt equity mix of listed non-financial companies in Nigeria. The study finds that the lagged value of long-term debt (LTDA) and current ratio (CUTR) have positive effects on long-term debt, suggesting that firms with a history of high long-term debt and those that use long-term debt to finance their short-term liquidity needs, are more likely to have higher long-term debt levels.

Return on equity (ROET) has a positive effect on long-term debt, indicating that profitable firms tend to use long-term debt to finance profitable investments. However, return on Asset (ROA) and asset tangibility (TANG) have negative effects on long-term debt, implying that firms with higher profitability and more tangible assets have less need for external financing. Non-current assets (NCAR) have a positive effect on long-term debt, indicating that firms use long-term debt to finance their investments in fixed assets.

The GMM results further suggest that liquidity, profitability, and asset structure are associated with a company's long-term debt-to-equity ratio (LTDE). Specifically, companies may adjust their long-term debt levels to maintain a desirable debt-to-equity ratio over time. Higher current ratios are associated with lower LTDE ratios, suggesting that companies with stronger liquidity positions may be less likely to rely on long-term debt to finance their operations. Higher profitability (return on equity) is associated with lower LTDE ratios, suggesting that companies with higher profitability may be less reliant on long-term debt. Higher

profitability (return on assets) is positively related to long-term debt to equity. Asset tangibility and non-current assets are positively associated with LTDE ratios, implying that companies with more tangible and non-current assets may be more likely to rely on long-term debt financing.

6.0 Conclusion and Recommendations

6.1 Conclusions

This study has found several factors that influence a firm's debt-equity mix. The results suggest that firms tend to adjust their debt levels towards their target levels, which is consistent with the trade-off theory. The study also confirms the pecking order theory, which suggests that companies prefer to use internal financing sources before resorting to external financing sources such as debt and equity. Additionally, the study found that firms with higher liquidity and profitability tend to have lower debt levels, while those with more tangible assets, higher non-current assets tend to have higher debt levels. It is worth noting that the study employs a robust methodology and a large sample size of firms across multiple industries. The use of generalized method of moment technique allows for the control of unobserved heterogeneity and potential endogeneity issues, increasing the reliability of the results.

Moreover, the findings are consistent with the existing literature on the determinants of debt levels, providing further evidence to support the theoretical frameworks of pecking order theory, debt conservatism, and trade-off theory. The consistency of these findings across various studies and contexts further reinforces their robustness and validity.

It is also important to note that the study highlights the importance of liquidity, profitability, and asset structure in shaping debt levels. These findings provide useful insights for firms, investors, and policymakers to better understand the factors that influence debt levels and inform their decision-making processes.

6.2 Recommendations

Firms should

- 1) Consider past debt levels when setting current debt targets.
- 2) Monitor their liquidity levels to maintain a healthy balance between liquidity and debt.
- 3) Strive for profitability to reduce the debt burden.
- 4) Consider asset tangibility when making financing decisions.
- 5) Pay attention to non-current assets to achieve an optimal debt equity mix.
- 6) Consider various proxies for both dependent and independent variables and select the most suitable one that will minimize cost, maximize value, and guaranty optimum debt-equity mix for the firm in their financing decisions.

6.3 Contribution to Knowledge

1) This study is among the few studies that investigated the impact of liquidity, profitability and asset structure on the debt-equity mix of non-financial quoted companies in Nigerian Exchange Group, and thus, has extended the evidence on debt-equity mix research using two distinct proxies for debt-equity mix.

2) This work examined the impact on debt-equity mix of at least two proxies for profitability and asset structure, to avoid unbalanced conclusion regarding their relationship with debt-equity mix.

Their impacts on debt-equity mix were measured on two proxies to facilitate constructive results were arrived at on possible conditions for positive, negative, significant, or insignificant impact on debt-equity mix.

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CORPORATE GOVERNANCE MECHANISM AND FINANCIAL PERFORMANCE OF LISTED NON-FINANCIAL FIRMS IN NIGERIA.

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Abstract

The similarity of prior studies in this area of corporate governance mechanism and financial performance is the use of OLS regression analysis, which focuses on the effect of the independent variables on the conditional mean of the dependent variable. The classic regression shows the relationship between the dependent variable and the independent variable by assuming that the regression coefficients/covariates effects are constant across the population. However, this does not explain relationship at different conditional quantiles of the outcome variable, which helps to provide a more holistic scan of the whole distribution of the outcome. The regression analysis that meets the requirement of a conditional mean at different points is the quantile regression (QR). This study defers in methodology from other studies by adopting the quantile regression approach to ascertain the different level of performance. This is the research gap that this study bridged by examining the effect of corporate governance (CG) mechanisms on financial performance of listed non-financial firms in Nigeria. The study applied a statistical tool developed by Taro Yamane (1967) and employed a sample of sixty (60) listed non-financial companies from the Nigerian Stock exchange that have consistently issued their audited annual financial reports from 2013 to 2019. The secondary data collected are analyzed using descriptive statistics, correlation analysis and quantile regression approach. The empirical results from the quantile regression approach showed among other things that board size has a significantly positive effect on firm performance at the 25th and 75th percentiles, board independence has a significantly negative effect on firm performance at the 50th percentile, and Chief Executive Officer (CEO) ownership has a significantly positive impact on firm performance at that same percentile. It was suggested, based on the research's findings, that the management of Nigeria's publicly traded firms should maintain and grow an acceptable board size for better and improved company performance.

Keywords: Corporate, Financial, Governance, Non-Financial, Performance

1.0 Introduction

A topic that is hotly contested is how corporate governance affects financial performance. The performance of corporate and corporate governance factors has been significantly associated in research throughout the years. The numerous financial scandals involving prominent businesses and corporate failures, like those at Enron, WorldCom, Xerox, African Petroleum, Unilever Nigeria Plc, and Cadbury Nigeria Plc, among others, may be the cause of the rising interest in governance studies. Corporate governance is concerned with the ways in which the organization's stakeholders utilize all their influence to make sure those managers and directors steer the organization's affairs in a way that considers the interests of all stakeholders. Good corporate governance promotes manager to behave in the shareholders' best interests as evidenced by literature and actual business circumstances (Ajagbe, Oluyinka & Long, 2011; Ferreira, 2010). In the governance of an organization, a manager's interest tends to conflict with shareholders' interest when they



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do not earn their desirables (Jensen & Meckling, 1976). This opportunistic behavior of management can negatively affect the performance of the firm. The fundamental issue in corporate governance from an agency point of view is how to avoid any form of opportunistic behavior and set out strategy that will lead to wealth maximization of shareholders (Macus, 2008).

The impact of corporate governance on the performance of listed companies in both developed and developing economies has, still, been the subject of numerous studies. In industrialized nations, a study on corporate traits and valuation inferences was conducted by Fekri, Milad, Hafezali, Omar and Omer (2016). According to the results of the study's ordinary least square method, there is evidence that corporate governance has considerable impact on firm performance. Conyon (2017) also examined the connection between corporate governance (female diversity in the boardroom) and firm performance in a study including more than 300 US companies between 2007 and 2014. The corporate governance variable, according to the study, has an impact on firm performance. In a developing country like Nigeria, researchers such as Agbim (2019), Dabor, Isiavwe, Ajagbe and Oke (2015), Enilolobo, Adesanmi and Aigbe (2019), Ngozi and Oranefo (2020) and Oladeju and Agbesanya (2019) have investigated the association between corporate governance and business performance. These studies conclusions are not conclusive and do not agree with one another. This can be the result of OLS incorrectly or using inadequate methods. Using the ordinary least square regression analysis, Al-Itomaidi, Almaqtari and Ahmad (2019), Badu and Appiah (2017), Enilolobo, Adesanmi and Aigbe (2019) and Oladeju and Agbesanya (2019) all revealed a substantial correlation between corporate governance system and business performance. Using conventional ordinary least square regression techniques Agbim (2019), Dabor, Isiavwe, Ajagbe and Oke (2015) and Ngozi and Oranefo (2021) found no discernable impact of corporate governance mechanisms or factors business performance. These studies are comparable in that they employ OLS regression analysis, which focuses on the impact of the independent factors on the conditional mean of the dependent variable. The classic regression shows the relationship the dependent variable and the independent by assuming that the regression coefficients/covariate effect are constant across the population. This does not. However, this does not explain relationships at different conditional quantiles of the outcome variable which helps to provide a more holistic scan of the whole distribution of the outcome. The regression analysis that meets the requirement of a conditional mean at different points is the quantile regression (QR). The quantile regression approach is used in this study to deviate from standard methods and determine the various levels performance by looking at how corporate governance structures affect the performance of listed non-financial enterprises in Nigeria. To the study, the following research questions were developed.

1. What impact does the size of the board have on the performance of the firm at various quartile points?
2. What impact does board independence have on a firm's performance at various quartile points?
3. What impact does ownership by the CEO have on the performance of the firm at various quartile points?
4. What impact does the independence of the audit committee have on the performance of the firm at various quartile points?

2.0 Review of Literature

2.1 Firm's Performance

A method of assessing management performance and determining whether organizational objectives are met is through the performance of the company. It can be portrayed by growth, market value, return on assets (ROA), and return on capital employed (ROCE) (Boshnak, 2021; Conyon & He, 2017; Phan & Duong, 2021; Uribe-Boharquez, Martinez-Ferrero, Garcia-Sanchez, 2018). Economies of scale and market domination can be brought about by size, which can increase future profitability. Most of the time, the owner's, or manager's perceptions in response to the survey serve as gauge of the company's performance (Justin, Bell, Payne & Kreiser, 2010). According to Hawawini, Subramanian and Verdin (2003) argument, external influences role in deciding how business performance is affected. Companies' performance is assessed in three dimensions, according to Egbunike and Okerekeoti (2018). The level of business productivity comes first. Next, is the aspect of profitability followed by the aspect of market premium. The second dimension is identical to the company's financial performance which is a level of how much a company's earnings exceed its costs. A company's financial performance is evaluated using specific ratios. In a financial statement, ratios illustrate the relationship between two figures belonging to same unit. Return on assets (ROA), return on earnings (ROE), return on capital employed (ROCE), return on sales, net profit margin and operating margin are a few of these ratios.

Researchers like Amer, Ragal and Shehata (2014), Bansal and Sharma (2016), Hogue, Islam and Azam (2013) and Ibrahim and Abdulsammad (2011), employ accounting-based assessment as a performance metric for organizations since it is a useful tool for measuring a firm's profitability. It demonstrates an organization's short-term profitability and includes return on equity (ROE) and return on assets (ROA). While authors like Ganguli and Agrawal (2009), Shan and McIver Ron (2011) and Wahla, Shahsyed and Hussain (2012) used market-based measurements that put an emphasis on the expectations of the organization's shareholders' (i.e., the owners') towards the company's future performance. Some market-based measures adopted in research are market-to-book value (MTBV), Tobin Q, market value added (MVA), log of market,

dividend yield (DY), price-earnings ratio, capitalization and so on. The major distinction between markets-based measures and accounting-based measures is the forward-looking approach of the former and the backward-looking approach of the later. However, there are essentially two different types of performance measurement that management uses depends on their needs at the time.

2.2 Corporate Governance

Corporate governance (CG) is the term for the procedures, organizational frameworks, and data used to direct and monitor an institution's management (Duncan & Cameron, 2005). It focuses on board responsibilities, disclosure, and investors' involvement. And other related topics, including the idea that a board's effectiveness is mainly determined by its makeup (Ogunsanwo, 2019). It concerns the creation of a balance between economic and social aims as well as between personal and collective ambitions (Udeh, Abiahu & Tambou, 2017). By assuring the protection of stakeholders' interests, a good CG structure lays the groundwork for achieving accountability between the organization's directors, management, and owners (Duncan & Cameron, 2005). A healthy economy is typically the result of good corporate governance standards, which also guide the economy to achieving superior returns for the business's owners (Jenkinson & Majer, 2012 as cited in Bala, Almustapha & Olarewaju, 2019). Since there are several corporate governance regulations for different economic sectors in Nigeria, the idea of corporate governance (CG) is not entirely new. To address the unique needs of their enterprises, industry authorities created CG codes. The corporate governance for Banks and Discount House was introduced in 2014 specifically to address the needs of the banking sector. It was issued by the CBN (repealed 2006 CBN Code); in the telecommunication industry, the Code of Corporate Governance for the Telecommunication was introduced in 2016, it repealed the Nigerian Communications Commission code of 2014; Code of Good Corporate Governance for Insurance Industry was introduced in 2009. The National Insurance Commission (NIC) introduced it in 2014. The Securities and Exchange Commission (SEC) repealed its 2003 law with the Code of Corporate Governance for public Companies in Nigeria, which was implemented in 2011. Finally, the National Pension Commission's code of Corporate Governance for Licensed Pension Fund Operators, published in 2008 (PENCOM).

2.3 Corporate Governance mechanisms

2.3.1 Board Size

Since management implements board decisions, the board is seen as a crucial component of corporate governance. These choices have a big impact on not just the company's performance, but also on how long it will be in operation. It is thought that a large board size initially makes it easier to perform important board functions, but at some point, a large board starts to experience coordination and communication issues, which makes the board less effective, and the firm performs worse (Guest, 2009; Jensen, 1993; Lipton &

Lorsch, 1992). What matters most is how big this crucial corporate governance mechanism is and how it affects the success of the company. Boards with smaller sizes are favored in many of the public discussions and empirical research conducted in the USA and other industrialized nations where boards are crucial to corporate governance. In contrast to the well-established negative correlation between board size and firm performance, some studies (Coles, Daiel & Naveen, 2008; Dalton & Dalton, 2005; Guest, 2009; Topal & Dogan, 2014) show that board size is influenced by firm-specific factors, so the direction of the correlation between it and performance may vary between companies.

In Section.2 of the Nigerian corporate governance code empowers its users to determine the size and composition of their boards considering the scale and complexity of their operations; the need for sufficient members to serve on its committees; the need to secure quorum at meetings; as well as ensuring diversity (KPMG, 2019). The overall implications are that firms have the power to determine the size and make-up of their boards according to the requirements of their sectoral regulators.

2.3.2 Board Independence

According to the literature on corporate governance, a company's ownership and management should be kept separate. Inside directors are not seen to be as impartial as independent non-executive directors with the appropriate skill sets, who do not have any business or other links that could obstruct their capacity to exercise independent judgment or act in the best interests of the shareholders. The independent non-executive directors take an objective perspective, which allows them to closely monitor the Chief Executive Officer (CEO) and challenge him or her when standards, policies, or procedures are broken to safeguard the interests of the shareholders (Duchin, Matsusaka & Ozbas, 2010). In many nations around the world, independent directors are required to make up a portion of the corporate body by laws or regulations. It is assumed that outside director' interests align more closely with minority shareholders' than with those of inside directors. Additionally, outside directors give businesses access to the outside world or a window into it, assisting with networking and securing essential resources. A majority of the board members should be outsiders, according to Fama and Jensen (1983), for it to be considered independent. Independent directors are thought to be more attentive in keeping an eye on the company's actions and decisions.

2.3.3 CEO Ownership

The performance of the company may suffer as a result if the CEO's interests are not aligned with those of the shareholders (Core, Holthansen & Larcker, 1999). Since it is used as a tool to complete this assignment, CEO compensation becomes relevant in this situation. For instance, financial bonuses and long-term income, including stock-related compensation, can be included in the CEO's compensation (Zajac, 1990). Given that numerous studies have found results that suggest this, including the CEO as a shareholder may be

advantageous to organizational performance (Griffith, 1999; Kim & Lu, 2011). Elsilä, Kallunki, Nilsson and Sahlström (2013) evaluate the personal wealth of the CEOs to determine whether investing a larger percentage of the CEO's overall wealth in the company boosts the firm's incentives and, as a result, the performance of the company. The study examined data from a listed Swedish company as an example, and the findings showed that accounting profitability increased in direct proportion to the CEO's wealth.

2.3.4 Independence of the Audit Committee

The foundation of the audit committee is two pillars of accountability: first, management's accountability to the boards, and second, the boards' accountability to the shareholders. To assure the accuracy of financial reporting, the audit committee and internal audit play crucial roles as the company's internal control system. The board's supervision responsibility, which includes monitoring the company's internal and external audit processes, directly informs the audit committee's work (Garg, 2007). The primary duties of the audit committee are to tighten internal accounting controls and conduct ongoing reviews of the company's financial data to increase the accuracy and integrity of financial reporting. The ratio of executive and non-executive committee's composition: Compared to audit committees with executive directors, the former is thought to be more independent. There is evidence that executive directors would predominate the top management of the company's decision-making process, leading to less impartial conclusion. For instance, Shivdasami (1993) and Yermack (1996) find that executive directors reveal only a limited portion of facts to non-executive directors aimed at preventing stakeholders from getting all the information. The oversight function of suitable checks and balances to ensure that management fulfills its duties of maximizing wealth as expected by the shareholders is the most critical function of an effective audit committee (Solomon & Solomon, 2004).

2.4 Review of Relevant Theory

Agency Theory

The dominant paradigm in studies and analyses of corporate governance is undoubtedly agency theory, which has been applied widely in various aspects. This theory is based on the writing of Berle and Means (1932), who discussed the division of firm ownership from management. Jensen and Meckling (1976) and Fama and Jensen (1983), two seminal researchers, are frequently cited as sources for this theory. A person who is appointed or hired to act in the principal's best interests is known as an agent. The owners of every business initially serve as the organization's managers, but as the company grows, the owners will need to hire people who will be responsible for managing the business. Directors are those people, or agents. The owners' best interests must come first for them (directors). A contract between a company's owners (shareholders) and management is described as an agency relationship by Jensen and Meckling (1976). The shareholders engage the directors to manage the firm on their behalf. The three major costs incurred by the

owners (principal) in ensuring that the managers act in their best interest. First, the monitoring cost is incurred, because of the monitoring and controlling activities of the principal. Second, the bonding cost is incurred, because the agents try to convince the shareholders that their interest will not be sidelined. The managers' (agents) actions that can jeopardize the interests of the owners or shareholders result in residual loss. The total of the bonding cost, monitoring cost, and residual loss is referred to as the agency cost. According to Berle and Means (1932), the manager (agent) is viewed as a man who is self-interested, self-serving, egotistical, and opportunistic by nature. Due to these characteristics, shareholders are required to keep an eye on their operations and hire an external auditor to check them. When the shareholders' (owners') and managers' objectives conflict, a conflict of interest is all but guaranteed. Principals should make sure that any lapses in the contract between the owners and the agents are effectively addressed because these lapses are the most likely places where management may behave opportunistically (Adelopo, 2010; Gomez-Mejia & Wiseman, 2007). In the organization, other kinds of agency issues might appear in a variety of situations, especially when decisions are made regarding mergers and acquisitions, investing, and diversification (Lane, Cannella & Lubatkin, 1998). This may show up as management's propensity to block reasonable offers to advance their own interests at the expense of the shareholders (Buchholtz & Ribbens, 1994). The main goal is to decrease or eliminate the agency's operating expenses to boost the returns that can be distributed among the remaining claimants. Consequently, the focus of this theory was on how directors, who are also thought of as agents, manage the activities of organisations on behalf of owners (shareholders).

2.5 Empirical Review

2.5.1 Board Size and Financial Performance

With varying degrees of success, several studies have investigated how board size affects financial performance.

Omotoye, Adeyemo, Omotoye, Okeme and Leigh (2021) examined the relationship between different audit committee and board characteristics and the market performance of listed deposit money banks in Nigeria. Twelve (12) banks with annual reports that were listed on the Nigerian stock exchange between 2013 and 2017 were used to collect data, and the fixed and random regression analysis was used to evaluate the data. The study concluded that the size of the board of directors has a negative and significant impact on firm performance.

Boshnak (2021) used a sample of 210 Saudi Stock Exchange listed companies from 2017 to 2019 to examine the relationship between corporate governance mechanisms and firm performance in Saudi Arabia. To examine the relationship between corporate mechanism and business performance, descriptive and

multivariate regression models were used. The findings showed that the size of the board had a negative impact on company performance.

The effect of corporate governance on firm performance during the Covid-19 pandemic in Sri Lanka was explored by Farwis, Siyam, Nazar and Aroosiya (2021) using a sample of 27 listed enterprises during the years 2019 to 2020. To test the established assumptions, data were gathered using quantitative techniques from 27 businesses listed on the Colombo Stock Exchange (CSE) using descriptive statistics, correlation analysis, t-test, and ordinary least square regression techniques. It was discovered that the number of directors and their qualifications had a considerable favorable impact on the performance of the company.

2.5.2 Board Independence and Financial Performance

The proportion of independent non-executive directors to all directors, or “board independence,” is the measure of board effectiveness. In several studies, the relationship between board independence and firm performance was investigated. The findings were inconsistent. According to certain studies, there is a positive relationship (Ahmed & Handam, 2015; Pan, Huang & Gopal, 2018), a negative relationship (Vo & Nguyen, 2014) or even no relationship (Zabri, Ahmad & Wah, 2016).

Boshnak (2021) conducted study on the relationship between Saudi Arabian firm performance and corporate governance mechanisms. Regression analysis and manual content were both used in the study of 210 Saudi Stock Exchange companies that have been listed as a sample from 2017 to 2019. The dependent variable, company performance, which is proxied by ROA, ROE, and Tobin’s Q, was analyzed using descriptive and multivariate regression techniques. The findings demonstrated a negative relationship between board independence and firm performance.

The moderating impact of institutional context was examined by Uribe-Bohorquez, Martinez-Ferrero and Garcia-Sanchez (2018) in their study of board independence and company performance. 2,185 businesses from across the global were analyzed from 2006 to 2015. To analyze the data for the study, regression models for panel data were adopted. It was discovered that board independence increases the firm’s technical efficiencies.

2.5.3 CEO Ownership and Financial Performance

According to Douong (2016) research, the 2003 dividend tax cut provided evidence about CEO ownership and company performance. The research involved 541 distinct companies in 41 industries and covered the years 2002 to 2006. According to the study, the shift in CEO ownership affects business performance and investment efficiency in an unevenly balanced way.

An empirical study on the connection between governance and financial performance was carried out in Indonesian by Garad, Rahmawati and Pratolo (2021). The study's objective was to investigate the connections between ownership, financial performance, board size, audit committee, and company value. With the use of the WordStat 8 statistical method, the study used descriptive statistics, correlation, and the cloud analysis procedure. The findings reveal that audit committee independence has a considerable beneficial impact on financial performance whereas ownership structure has a significant negative impact. Frydenberg and Neegaard (2018) looked at CEO ownership and stock market performance of listed Oslo Stock Exchange (OSE) from 2010 to 2016. Data were collected from a sample of 73 companies on OSE, and multivariate regression was used to examine the results. According to the findings, businesses that have a CEO who owns at least 5% of the company perform better than both businesses that do not.

2.5.4 Audit Committee (AC) Independence and Firm Performance

Oroud (2019) looked at the relationship, between the audit committee's attributes and revenue. From 51 companies, 255 observations were collected for the panel data. As of 2017, the Australian Stock Exchange (ASE) had 63 industrial enterprises listed as members. According to the regression research, the profitability of the industrial enterprises listed on the ASE is significantly impacted by Ac independence.

Study by David, Chang and Low (2021) on corporate governance practices and Real Estate Investment Trusts' ten-year performance in Malaysia and Hong Kong (2010 to 2019). The analysis of the panel data was used to investigate how corporate governance mechanisms affected business performance (ROA, ROE, and Tobin's Q). According to the analysis's findings, Tobin's q, return on equity, and return on assets are all significantly impacted by the audit committee's independence.

However, Mohammad (2018) used a sample of 74 non-financial enterprises listed on the Jordanian Stock Exchange (JSE) between 2010 and 2016 to examine the effect of AC features on firm performance. The Bruesh and Pagan Lagrangian multiplier (LM), which allows users to choose between pooled OLS, fixed, and random effects, was used. According to the study's findings, AC independence and business performance have a poor association.

3.0 Methodology

The longitudinal research design was used in this study. It recorded activity of listed non –financial institutions on the Nigeria Stock exchange (NSE) for the years 2013 to 2019. 116 non-financial companies listed on the Nigerian Stock Exchange (NSE) from 2013 to 2019 make up the study's population (NSE, 2019). The Taro Yamane (1967) method was used to determine a sample size of sixty (60) using the formula:

4.0 $n = \frac{N}{1+N(e)^2}$ Where: n = sample size, N= Population of the study, e = error term (9%)

$$5.0 \quad n = \frac{116}{1 + 116 (0.09)^2}$$

$$7.0 \quad n = \frac{116}{1.9396}$$

$$8.0 \quad n = 60$$

$$9.0 \quad n = 60$$

Consequently, the purposive sampling technique was used to select sixty (60) listed firms and the descriptive statistical method was used to describe the data. It provides information on the mean, standard deviation and Jarque-Bera. While the Ordinary Least Square and the Quantile Regression method were adopted for the estimation of the model.

Model Specification

The study adapts the Liu, Hsueh, and Wu, (2017) model which was expressed as:

$$ROA_{itq} = a + \beta_{1q}BSIZE_{it} + \beta_{2q}BOIDN_{it} + \beta_{3q}CEOSH_{it} + \beta_{4q}ACIND_{it} + \beta_{5q}FS_{it} + \beta_{6q}FLEV_{it} + \mu_{i,t} \text{ ----(1)}$$

$$ROE_{itq} = a + \beta_{1q}BSIZE_{it} + \beta_{2q}BOIDN_{it} + \beta_{3q}CEOSH_{it} + \beta_{4q}ACIND_{it} + \beta_{5q}FS_{it} + \beta_{6q}FLEV_{it} + \mu_{i,t} \text{ ----(2)}$$

$$TOQ_{itq} = a + \beta_{1q}BSIZE_{it} + \beta_{2q}BOIDN_{it} + \beta_{3q}CEOSH_{it} + \beta_{4q}ACIND_{it} + \beta_{5q}FS_{it} + \beta_{6q}FLEV_{it} + \mu_{i,t} \text{ ----(3)}$$

Where: ROA = Return on Assets, ROE = Return on Equity, TOQ = Tobin's Q, BSIZE = Board size, BOIDUN = Board independence, CEOSH = CEO ownership, ACIND = Audit committee independence, FS = Firm size, FLEV = Firm leverage, i = number of industries, t = number of years, q = Quantile and μ = the error term.

4.1 Data and Analysis

Table 1: Descriptive Statistics

Variables	Mean	Std. Deviation	Jarque-Bera
ROA	1.92	19.14	11.15 (0.00)
ROE	23.56	527.61	13.24 (0.00)
TOQ	1.54	1.49	11.06 (0.00)
BSIZE	9.16	2.94	5.61 (0.00)
BOIDN	67.79	14.19	4.90 (0.00)
CEOSH	4.95	12.37	11.47 (0.00)
ACIND	48.39	14.19	8.79 (0.00)
FS	7.12	0.84	4.14 (0.00)
FLEV	65.05	41.00	11.08 (0.00)
All data observation	418	418	418

Source: Authors' Compilation (2022)

Table 1 displays the mean (average) for each variable, together with the standard deviation and Jarque-Bera (JB) statistics (normality test). According to a review of firm performance metrics, the average return on asset (ROA) throughout the seven-year period was 1.92 percent, with standard deviation value of 19.14. This shows that non-financial listed companies in Nigeria were able to utilize their total assets to generate an average profit of 1.92 percent. The average returns on equity (ROE) and return on assets (RETOA) were

23.56 percent and 527.61, respectively. Tobin Q (TOQ), as determined by the market-to-book ratio of the sample firms, was N1.54k with a standard deviation value of 1.49. This means that the non-financial quoted firms in Nigeria were able to use their equity capital in generating profit on average of 23.56 percent. Accordingly, the market-to-book ratio for listed non-financial companies in Nigeria was N1.54k. It was noted that the board size (BSIZE) averaged 9.16 with a standard deviation of 2.94 throughout the seven-year period (2013-2019). This means that there were nine (9) directors on average on the board of the tested listed companies in Nigeria. Board independence (BOIDN) has a standard deviation of 14.19 and has been on average 67.79 percent during the past seven years. This indicates that non-executive directors made up most of the boards of directors for the sampled listed companies in Nigeria.

Additionally, we noticed that the average CEO ownership (CEOSH), which was calculated as the CEO total shares divided by the total directors' share, was 4.95 percent with a standard deviation of 12.37. We found that the audit committee independence (ACIND) of the chosen publicly traded companies was, on average, 48.39 percent, with a standard deviation of 14.19. Firm leverage (FLEV), a control variable, was on average 65.05 with a standard deviation of 41.00 and firm size (FS), on average 7.12 with a standard deviation of 0.84. The Jarque-Bera (JB) statistics in Table 2 also demonstrate that all the variables had a normal distribution. This indicates that the data was not skewed and could be trusted to be used to generalize about the sampled Nigerian listed companies. To find out if the series deviates from normality, consider the results of the skewness and Kurtosis as well. The data fit into a normal data series because of the importance of the variables, as seen in table 2 below, and this is depicted below.

Table 2: Skewness/Kurtosis tests for Normality

----- joint -----					
Variable	Obs	ObsPr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
roa	418	0.0000	0.0000	-	0.0000
roe	418	0.0000	0.0000	-	0.0000
toq	418	0.0000	0.0000	-	0.0000
bsize	418	0.0000	0.1282	28.40	0.0000
boidn	418	0.0000	0.2824	19.59	0.0001
ceosh	418	0.0000	0.0000	-	0.0000
acind	418	0.0000	0.0000	-	0.0000
fs	418	0.0201	0.0851	7.95	0.00188
flev	418	0.0000	0.0000	-	0.0000

Source: Authors' Compilation (2022)

Table 3: Pearson Correlation Matrix

	ROA	ROE	TOQ	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
ROA	1.00								
ROE	0.66	1.00							

TOQ	0.22	0.34	1.00						
BSIZE	0.14	0.07	0.03	1.00					
BOIDN	0.08	0.06	-0.07	0.19	1.00				
CEOSH	-0.16	-0.12	-0.09	-0.34	-0.31	1.00			
ACIND	0.14	0.13	0.09	0.14	0.22	-0.01	1.00		
FS	0.18	0.15	0.01	0.51	0.07	-0.28	0.06	1.00	
FLEV	-0.46	-0.05	0.11	-0.13	-0.18	0.14	-0.08	0.11	1.00

Source: Authors' Compilation (2022)

Table 3 focuses on the relationship between company performance (ROA, ROE, and TOQ) and characteristics related to corporate governance (BSIZE, BOIDN, CEOSH, ACIND, FS and FLEV). According to the findings, board size (BSIZE) was positively correlated with return on asset (ROA=0.14), return on equity (ROE=0.07), and Tobin Q as determined by market-to-book ratio (TOQ) =0.03). This means that most companies with a larger board of directors were more likely to experience an increase in market-to-book value, return on equity, and return on assets. In the instance of board independence (BOIDN), the variable was positively correlated with return on asset (ROA=0.08), return on equity (ROE=0.06), and Tobin Q measured by market-to-book ratio (TOQ=-0.007), and negatively correlated with both. This suggests that companies with more board independence were probably better at producing returns on assets and returns on equity, but their market-to-book value appeared to be declining. In the instance of CEO ownership (CEOSH), we also noticed that the variable was negatively correlated with return on asset (ROA=-0.16), return on equity (ROE=-0.12), and Tobin Q as determined by market-to-book ratio (TOQ=-0.09). As a result, firms with higher CEO ownership were more likely to have a decline in market-to-book value as well as a reduction in return on assets and return on equity. The return on asset (ROA=0.14), return on equity (ROE=0.13), and Tobin Q evaluated by the market-to-book ratio (TOQ=-0.09) were all positively correlated with the audit committee independence (ACIND). As a result, companies with greater audit committee independence were probably more effective at producing return on assets, return on equity, and increasing market-to-book value. Return on asset (ROA=0.18), return on equity (ROE=0.15), and Tobin Q as determined by market-to-book ratio (TOQ=0.010) were all positively correlated with firm size (FS), which served as control variable. This suggests that larger businesses were more likely to generate higher returns on assets and equity as well as higher market-to-book values. Additionally, firm leverage (FLEV) was negatively correlated with return on asset (ROA=-0.46) and return on equity (ROE=-0.05) but favorably correlated with Tobin Q as assessed by the market-to-book ratio (TOQ=0.11). Moreover, we noted that no two explanatory factors were perfectly connected, according to correlation analysis. We also observed that correlation analysis revealed that no two explanatory variables were perfectly correlated. This means that there is the absence of multi-collinearity problem in our model.

The OLS Regression and Quantile Regression Results for Return on Asset (ROA)
Table 4.1a. The OLS method results for Return on Asset (ROA)

	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-17.28	-0.56	-0.08	-0.06	0.13	5.03	-0.18
t-value	-1.76	-1.52	-1.24	-0.84	2.11	3.94	-8.91
p-value	0.079	0.129	0.214	0.401	0.036	0.000	0.000

$R^2 = 0.2064$, $F = 17.69$, $Prob = 0.0000$

Table 4.2b. The quantile regression results for Return on Asset (ROA)

25%							
$R^2 = 0.2158$	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-18.15	-0.48	-0.04	-0.09	0.06	5.04	-0.24
t-value	-2.97	-1.42	-0.66	-1.33	1.02	4.27	-12.72
p-value	0.046	0.157	0.507	0.184	0.306	0.000	0.000
50%							
$R^2 = 0.1326$	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-1.18	-0.31	-0.01	-0.07	0.04	2.50	-0.17
t-value	-0.04	-2.41	-0.82	-2.85	1.87	5.52	-23.76
p-value	0.733	0.017	0.413	0.005	0.062	0.000	0.000
75%							
$R^2 = 0.0907$	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	2.01	-0.35	-0.01	-0.08	0.03	2.29	-0.15
t-value	0.35	-1.62	-0.31	-1.84	0.90	3.06	-12.54
p-value	0.726	0.105	0.759	0.067	0.367	0.002	0.000

We observed from table 4.1ab that the OLS R^2 was about 21%, the Pseudo R^2 of 25th, 50th and 75th percentiles were 22%, 13% and 9% systematic variations in firm performance measured by return on asset (ROA) which were jointly explained by the independent variables (board size, board independence, CEO ownership, audit committee independence, firm size, and firm leverage). The F – statistics value of 17.69 and a P-value of 0.0000 ($Prob = 0.0000$) shows that the model overall was statistically significant at 5%. This reveals that the model is fit, and its variables were carefully selected.

The OLS Regression and Quantile Regression Results for Return on Equity (ROE)
Table 4.2a The OLS method results for Return on Equity (ROE)

	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-108.03	-2.56	1.23	-1.05	-0.79	12.87	0.41
t-value	-0.36	-0.26	0.61	-0.45	-0.40	0.33	0.64
p-value	0.722	0.796	0.543	0.650	0.686	0.744	0.520

$R^2 = 0.0031$, $F = 0.21$, $Prob = 0.9721$

Table 4.2b The quantile regression results for Return on Equity (ROE)

25%							
R ² = 0.0099	C	BFSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-37.54	-0.49	0.05	-0.11	0.22	4.71	-0.05
t-value	-1.47	-0.51	0.32	-0.60	1.33	1.42	-1.08
p-value	0.143	0.609	0.747	0.548	0.184	0.157	0.280
50%							
R ² = 0.0063	C	BFSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-14.66	-0.38	0.007	-0.11	0.15	2.72	0.01
t-value	-1.64	-1.14	0.12	-1.66	2.75	2.35	0.95
p-value	0.101	0.255	0.901	0.097	0.006	0.019	0.343
75%							
R ² = 0.0103	C	BFSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-11.87	-0.71	0.08	-0.17	0.08	2.52	0.17
t-value	-0.93	-1.62	0.61	-1.11	0.65	0.96	3.96
p-value	0.352	0.105	0.543	0.268	0.516	0.339	0.000

Given the tables above, we observed that the OLS R² was about 1%, the Pseudo R² of 25th, 50th and 75th percentiles were 1%, 1% and 1% systematic variations in firm performance measured by return on asset (ROA) which were jointly explained by the independent variables (board size, board independence, CEO ownership, audit committee independence, firm size, and firm leverage). The F – statistics value of 0.21 and a P-value of 0.9721 (Prob = 0.9721) shows that the model overall was statistically insignificant at 5%. This reveals that there are some variables significant to the model that has not been captured.

The OLS Regression and Quantile Regression Results for Tobin Q (TOQ)

The OLS and quantile regression results obtained shown in table 4.3 below.

Table 4.3a The OLS method results for Tobin Q (TOQ)

	C	BFSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	1.39	0.05	-0.01	-0.008	0.003	0.01	0.008
t-value	1.68	0.19	-1.90	-1.31	0.63	0.14	5.06
p-value	0.093	0.849	0.058	0.189	0.515	0.890	0.000

R² = 0.0753, F = 5.53, Prob = 0.0000

Table 4.3b The quantile regression results for Tobin Q (TOQ)

25%

R ² = 0.0585	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	0.56	0.01	-0.001	0.001	0.001	-0.06	0.007
t-value	2.86	2.14	-0.89	1.20	1.56	-2.34	17.51
p-value	0.004	0.033	0.376	0.232	0.120	0.020	0.000

50%

R ² = 0.0448	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	1.12	0.02	-0.001	-0.002	0.003	-0.12	0.006
t-value	2.65	1.44	-0.39	-0.73	1.31	-2.18	7.69
p-value	0.008	0.147	0.700	0.466	0.090	0.030	0.000

75%

R ² = 0.0772	C	BSIZE	BOIDN	CEOSH	ACIND	FS	FLEV
Coef.	-0.01	0.12	0.004	0.01	0.01	-0.14	0.009
t-value	-0.01	3.08	0.60	1.75	1.58	-0.99	4.16
p-value	0.989	0.002	0.546	0.081	0.116	0.323	0.000

We observed from table 4.3.3ab that the OLS R² was about 8%, the Pseudo R² of 25th, 50th and 75th percentiles were 6%, 5% and 8% systematic variations in firm performance measured by return on asset (ROA) which were jointly explained by the independent variables (board size, board independence, CEO ownership, audit committee independence, firm size, and firm leverage). The F–statistics value of 5.53 and a P-value of 0.0000 (Prob. = 0.0000) shows that the model overall was statistically significant at 5%. This reveals that the model is fit.

4.2 Discussions

Board Size and Financial Performance

The results revealed that board size had a positive coefficient signs and probability values <0.05. This implies that the effect of board size on firm financial performance is statistically significant only in performance measured by Tobin Q at 25th and 75th percentiles while statistically insignificant at OLS results. This implies that increase in board size would lead to increase in firm financial performance. Larger board sizes significantly lead to higher performance. The OLS result was consistent with the findings of Omotoye, Adeyemo, Omotoye, Okeme and Leigh (2021) who established that board size exerts a negative and significant impact on firm performance.

Board Independence and Financial Performance

The results revealed the effect of board independence on firm financial performance is statistically insignificant by the different parameters over the different points of conditional distribution and even the OLS. This implies that increase in the number of non-executive directors sitting on the board has no effect on firm

performance, because it only failed the significance test at p-values >0.05 . On the other hand, the insignificant outcome of the parameters suggests that board independence is not a strong determinant of firm performance. The insignificant nature of the variable 'board independence' could be attributed to the fact that, despite the provision of the revised SEC Code that the non-executive directors should be in the majority among the board of directors, the total average of non-executive directors in our study showed 67.7%. Empirically, the OLS result was consistent to the findings of Uribe-Bohorquez, Martinez-Ferrero and Garcia-Sanchez (2018) on relationship between board independence and firm performance and revealed that board independence increases the firm's technical efficiencies.

CEO Ownership and Financial Performance

The results revealed that the effect of CEO ownership on firm financial performance is negatively and statistically significant at firm performance measured by return on asset (ROA) at 50th percentile and not statistically insignificant from the OLS result. This implies that increase in shareholding by the Chief Executive Officer significantly led to a decrease in firm performance the OLS result was contrary to the findings of Garad, Rahmawati and Pratolo (2021) who revealed that CEO ownership exhibits a significant negative effect on financial performance.

Audit committee Independence and Financial Performance

The results revealed that the effect of audit committee independence on firm financial performance is positive and statistically significant at 50th percentile and even the OLS results measured by return on asset (ROA) at p-values <0.05 . This implies that the proportion of non-executive directors in the audit committee of the sampled companies would significantly lead to increase in firm performance. From the empirical evidence, the OLS results were consistent with the findings of David, Chang and Low (2021) revealed that audit committee independence has a significant effect on firm performance.

5.0 Conclusion and Recommendations

The audit committee's independence and board size have a favorable and significant impact on a company's financial performance at the 25th, 50th, and 75th percentiles, respectively, according to our research findings using the quantile regression technique. The effect of CEO ownership on firm financial performance is negatively and statistically significant at 50th percentile while board independence has insignificant effect on firm financial performance measured by the different parameters over the different points of conditional distribution.

Based on major findings, we therefore recommend that:

- (i) For improved company performance, management of Nigeria's listed non-financial companies should maintain and grow an acceptable board size. It provides a positive message for Nigerian businesses that perform above average and below average.
- (ii) The study suggests that that firms with high level of non-executive members' sitting on the board as corporate governance mechanism did not drive performance for below-average, average and above-average performing firms.
- (iii) The study also suggested that management's attention should be drawn to CEO ownership because it leads to a decrease in performance for average performing firms.
- (iv) The study suggested that management should increase the number of out-side directors in the audit committee to increase performance for average performing firms.

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VALUE RELEVANCE OF SUSTAINABILITY REPORTING OF LISTED INDUSTRIAL AND CONSUMER GOODS COMPANIES IN NIGERIA

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Abstract

This research examines the effect of Sustainability Reporting (SR) on firm value of listed industrial and consumer goods companies (LICGC) in Nigeria. It adopts ex-post facto research design and a population of 34 (13 industrial goods and 21 consumer goods) companies as at 31st December 2022 listed on the Nigerian Exchange Limited (NGX). Thirty-two (32) firms were selected as sample size using purposive sampling method. The study period was from 2013 to 2022, while the technique for data analysis was multiple regression. Content exploration was utilized to obtain sustainability reporting index from the annual report of the sampled companies. Finding revealed that environmental, social, and corporate governance SR have significant and positive impact on company's value while economic SR has no significant influence on company's value. The study recommended the disclosure of sustainability reporting as this will spur a better regulatory rating in addition to improve share price.

Keywords: Sustainability Reporting, Global Reporting Initiative, Firm Value, Environmental Disclosure

1. Introduction

Companies have the main goal of boosting its value (Kurniawati, Riwayati & Firdaus, 2022). Khaghaany, Kbelah and Almagtome (2019) posit that in identifying the market value of the shares of a company, accounting data is crucial and inevitable. Reported information is said to have value and is relevant for decision making by investors when stock price responds to accounting information, (Echobu, Ekundayo & Abu, 2021). The connectivity between share price and accounting information makes it value relevance. Companies are paying special attention on becoming sustainable which has led to a significant increase in the last decade on studies on sustainability reporting (Bartlett, 2012). Especially so, given that business expansion in the era of globalization is now centered on a combination of financial, social, and environmental factors rather than just financial observations or a company's status (Mulya & Prabowo, 2018; Werastuti, Atmadja & Adiputra, 2021).

Nguyen (2020) posits that the public consciousness as regards to SR has made companies to reveal their efforts and actions being taken toward sustainability disclosure. The study of Husnaini and Basuki (2022) noted that there is always a decline of information asymmetry between companies and investors where a company disclose more on sustainability reporting, making it an avenue for companies to promote corporate governance.

Some countries such as Indonesia, France and South Africa have made SR mandatory, however, in many other countries, SR is still mainly in the purview of voluntary reporting (Echobu et al., 2021; Elena, 2021; Endiana & Suryandari, 2021). Firms have a tendency to reveal sustainability information willingly for two reasons: the first reason is to ensure uninterrupted access to resources and markets thereby making the company to conform to social expectation (i.e. increased customer patronage, access to labour and capital market). The second reason is that there is increase in capital market participants from the incremental information on SR, this makes investors to assess the risk profiles and financial forecasts more reliable, which in return leads to higher share price (Swarnapali & Le, 2018).

Over the past ten years, traditional financial disclosure has come under tremendous criticism for failing to accurately reflect all a firm's value (Uwuigbe, 2018; Buallay, 2020). This argument, together with the growing demand for non-financial reporting, the rise in ecological consciousness around the world, and the push for sustainable economic growth, are motivating businesses to make their operations more environmentally conscious and sustainable. Indriawati and Yanti (2021) opined that the essence of reporting the components of SR which are: environmental, social, and economic activities in annual reports is to promote transparency, responsibility, and accountability of the company to shareholders and prospective investors. One of the rudiments and crucial factor for all investors is the company's market value (Hendra, Yahya & Absah, 2022; Gift, Chukwubuike & Ndubuisi, 2021).

SR is based on the Standard of the Global Reporting Initiative (GRI). Many studies on SR have been conducted after GRI Guideline was published (Sutopo, Kot, Adiati & Ardila, 2018; Singh & Agrawal, 2022; Hariyani, Wahyuandari & Salatnaya, 2022). A non-governmental organisation with headquarters in the Netherlands is the GRI. It started in 1997 as a project of the United Nations Environment Program and became autonomous in 2002. According to the study of Emeka-Nwokeji and Osisioma (2019), systemic risks and the true expenses associated with operating in today's world are not adequately highlighted by current company reporting, and global climate change and the successive loss of resources, financial crisis, and economic downturn have elevated essential doubts about the operation of the capital markets. To what extend has sustainability disclosure influence firm value?

In other to answer the, this study found that there has been considerable controversy regarding the genuine effect of SR on company's market value, frequently due to the quality of the qualitative data in SR. Moreover, SR standards are still voluntary, and Nigeria's level of reporting is quite low (Emeka-Nwokeji & Osisioma,

2019). The need to include sustainability disclosure in other to obtain quality report beyond financial measures as in the case of shareholders of Cadbury Nigeria Plc is paramount, the shareholders discovered that the company's shares they acquired was based on audited financial statement that was altered and misleading.

The disagreement of different studies on whether company can make the most of their value if they execute SR couple with the heterogeneous results from different studies gave rise to this study. For instance, Almaqtari, Elsheikh, Tawfik and Youssef (2022), Bartlett (2012), Emeka-Nwokeji and Osisioma (2019) discovered that environmental sustainability disclosure has a significant favorable influence on market value of firm, while Atanda, Osemene and Ogundana (2021) reported a significant adverse effect. The study of Atanda et al. (2021), Bartlett (2012), Almaqtari et al. (2022) opined that social sustainability disclosure has a significant positive effect on firm value as against the opposing opinion of Emeka-Nwokeji and Osisioma (2019) with a negative and not significant effect. Finally, it was discovered from the review of literature that the empirical evidence of economic and corporate governance sustainability disclosure remains scanty in emerging economy such as Nigeria, and the emphasis has mostly been on advanced economies.

A study of this nature that aimed at determining the effect of SR (denoted by environmental, social, governance and economic) on company's value (represented by Tobin's Q score) of Listed Industrial and Consumer Goods Companies (LICGCs) in Nigeria have the hypotheses of the study below:

Ho₁: Environmental sustainability disclosure (EnSD) has no significant effect on firm value of LICGCs in Nigeria

Ho₂: Social sustainability disclosure (SoSD) has no significant effect on firm value of LICGCs in Nigeria

Ho₃: Corporate governance sustainability disclosure (CgSD) has no significant effect on firm value of LICGCs in Nigeria

Ho₄: Economic sustainability disclosure (EcSD) has no significant effect on firm value of LICGCs in Nigeria

2. Review of Literature

2.1 Conceptual Review

According to Loh, Thomas and Wang (2017), SR refers to the act of making non-financial information known to the public, this has to do with the publication of an entity's environmental, social, governance and economic activities, in a strategic manner. The study of Mulya and Prabowo (2018) postulated that the intention of sustainability report is to communicate company's commitment towards the economy, environment, and

social performances to the stakeholders and communities in a transparent way. The report provides stakeholders with a deeper picture of the firm's sustainable development initiatives.

Bartlett (2012) infer that SR has to do with company's public disclosure about their environmental, social, and governance measures and the strategies mapped out by the company to deal with the associated risks of SR. It refers to the incorporation of the Environmental, Social, and Governance (ESG) component into investing analysis, securities selection, portfolio creation, and risk management. (Emeka-Nwokeji & Osisioma, 2019). Kurniawati et al. (2022) observed that the SR is a different document that is disclosed from the annual report and has a voluntary nature. SR communicate to stakeholders about company's accomplishments and effort in becoming accountable for their actions and it include information on all topics that the annual report is unable to cover.

The study of Atanda et al. (2021) elaborated on social, environmental, and economic SR. Economic sustainability is the efficient use of available resources through a variety of tactics, allowing for the long-term achievement of a positive and responsible balance. It may discuss the reporting company's financial performance as well as the company's effects on the financial situations of its stakeholders and the international economic systems in which it conducts business. Financial and non-financial reporting are both necessary for environmental sustainability. Non-financial reporting covers a variety of topics related to environmental health and safety, including energy use, waste management, biodiversity, and carbon emissions.

Human rights, employment practices, business ethics, labour and industrial relations, anti-corruption practices, including non-discrimination policy, lobbying and advocacy, employees' safety and training, and local employment opportunities, particularly for hosts, are all part of social sustainability (Halimah, Irsyanti & Aini, 2020)

Emeka-Nwokeji and Osisioma (2019) viewed company's value as an economic degree which reflects the market value of an enterprise. According to Indriawati and Yanti (2021), the degree to which a company utilizes its resources adequately will reflect on company's share price and this is the investor's perception of company's value. This infers that the greater the stock price, the greater the worth of the company. According to Hendra et al. (2022), corporate value is the stock's market value. The stock market price, which represents investment choices, financing, and asset management, it shows the wealth of shareholders and the business

itself. Kurniawati et al. (2022) stated that the stock price, which reflects the market's assessment of the firm's performance, can be used to determine the worth of a business. The stock price equilibrium is at the point where supply and demand for the stock are balanced in the market.

2.2 Empirical Review

The study of Emeka-Nwokeji and Osisioma (2019) examined the extent to which SR of 93 non-financial companies listed on the Nigerian Stock Exchange (NSE) between 2006 and 2015 affect market value. The elements of SR used were environment, social, and governance. The proxy for firm market value was Tobin's Q, while the availability of each disaggregates components from the sustainability disclosure index of each firm using content analysis was used to measure environment, social and governance sustainability disclosure. Overall sustainability disclosures had considerable positive significant impact on business value, according to the results of the pooled ordinary least squares model. According to the individual hypotheses examined, corporate governance and environmental sustainability disclosure have a considerable positive influence on a company's market value, however social sustainability disclosure has an insignificant negative impact.

Atanda et al. (2021) considered the consequence of SR from three criteria (environmental, social, and economic) on firm value. Tobin's Q method was utilized to measure company's value. To assess the SR of 10 listed deposit money banks in Nigeria for the years 2014 to 2018, a sustainability disclosure index was created by utilizing indicators from the GRI SR framework, the total indices for each sustainability disclosure facet were simply averaged. The outcomes of the ordinary least square fixed effects regression showed that economic sustainability disclosure had an insignificant positive impact on company's value, social sustainability disclosure had a significant positive impact, and environmental sustainability had a significant negative impact. Thus, banks with significant environmental sustainability operations typically have lower firm values; also, increased social sustainability disclosure raises firm values, as demonstrated a rise in bank reporting of economic sustainability has no statistically significant impact on changes in company value.

For 10 different industries, Bartlett (2012) looked at the influence of corporate SR on business valuation from 2008 to 2009. Linear regression was used for data analysis. The closing stock price served as a stand-in for firm value, and sustainability reporting score served as a stand-in for the independent variable. The outcome of cross section valuation showed that market value is significantly connected favourably with both the environmental and social components of SR.

A study was undertaken by Almaqtari, et al. (2022) to establish the impact of several sustainability indicators on the value of businesses. 319 companies were employed in the study, which was conducted from 2016 to 2021. From the 319, 81 were from Turkey and 238 were from the United Kingdom (UK). Firm value was represented by Tobin's Q. The ESG score was used to calculate ESG. Findings showed a significant positive effect of ESG indicators on company's value. What this means is that Tobin's Q is far more correlated with ESG measures than with stock prices or market-to-book value.

It was the goal of Mulya and Prabowo's (2018) investigation to determine how sustainability reporting affects firm value. One of the things they looked at was reporting on economic sustainability. Economy was assessed using content analysis from the sustainability reporting index, and company value was assessed using the Tobin's Q technique between 2014 and 2015. They employed 74 Indonesia Stock Exchange (ISE) listed businesses. The outcome of the regression analysis showed that reporting on economic sustainability has a significant positive effect on firm value.

Endiana and Suryandari (2021) sought to provide empirical proof of the value relevance of sustainability reporting for investors purchasing or disposing of stock as well as how it impacts on business value. 306 firms listed on the (ISE) between 2017 and 2020 made up the study's sample. To calculate firm value, each company's market value was measured using four months after the end of its fiscal year. For SR, the degree of disclosure score derived from the GRI Standards indicator of sustainability reporting was used. The study's findings revealed that SR significantly increases a company's market worth. In other words, the high market value of a company is because of the greater rate of transparency of SR. Moreover, investor's view SR data as having value-relevant information when making investment decisions.

The goal of the study by Kurniawati et al. (2022) was to diagnose empirically the influence of SR disclosure on the enterprise value of 11 manufacturing companies quoted on the (ISE) from 2016 to 2020. Tobin's Q ratio was used to calculate business value, and the GRI Sustainability Reporting Index was utilised to gauge SR. The outcome of the regression study demonstrated that SR significantly increases firm value.

According to the study of Jeriji and Nasfi (2022), sustainability reporting is required in South African and French businesses. As a result, their research looked at how mandated SR assurances affect firm value from the 2007 to 2018 timeframe. 83 French listed firms on the SBF120 index and 88 South African listed companies on the Johannesburg Stock Exchange (JSE) were used to test the hypothesis using fixed effects ordinary least squares panel regression. Company's value was assessed using the Tobin's Q metric. The test resulted in a high significant positive link between SR and business value. Like this, Thompson, et al. (2022) looked at the value relevance of SR for the top 100 companies that generated the most wealth and

value for shareholders on the JSE in South Africa from 2015 to 2019. A strong positive link between SR and business value, as proxy by Tobin's Q, was found in the fixed-effect panel data study.

Mutiha (2022) ascertained if there is a meaningful correlation between company value and the quality of SR disclosure. Tobin's Q was utilised as a stand-in for firm worth, and a score of the disclosure of the SR quality served as a stand-in for SR disclosure. In total, 40 listed non-financial organisations that published sustainability reports in 2019 and 2020 was used as the study's observations. It was found using the panel data regression method that there is a significant positive link between the quality of SR and equity share price.

Loh et al. (2017) did research on the link between SR and firm value of 502 sample mainboard-listed companies on the Singapore Exchange (SGX). SR score from GRI was used, 1 if a company discloses any sustainability reporting indicator, and 0 if there is non-disclosure. Stock market value was used to measure firm value. From the weighted least squares (WLS) regression, it was discovered that SR is positively related to company's market value.

Swarnapali and Le (2018) research sought to determine whether corporate SR may influence company's value in a developing nation like Sri Lanka. 220 companies listed on the Colombo Stock Exchange were used in the study. A binary variable was utilized to measure the independent variable, which is SR, score 0 was assigned to companies that did not submit sustainability reports and 1 for those that did. Tobin's Q was utilised in the study to calculate company value. Data outcome disclosed a strong and positive correlation between business market value and sustainability reporting.

To determine the link between SR and corporate value for 330 non-financial quoted companies on the Vietnamese stock exchange between 2015 and 2019, Nguyen, Dang, and Ta (2022) conducted a study. For evaluating firm value and SR, Tobin's Q value and GRI reporting from the economic, environmental, and social dimensions were employed, respectively. A significant and positive link between GRI reporting and company's value was revealed by the regression analysis.

Meini and Chotimah's (2022) research focused on the factors that affect corporate value. From 2016 to 2020, panel data of 37 businesses listed on the (ISE) was used, and Warp plc was used to process the data. The Tobin's Q score which was the proxy for corporate value was found to be positively and insignificantly impacted by the SR disclosure index. In the same vein, Hendra et al. (2022) investigated how 47 mining

sector company value listed on the (ISE) between 2015 and 2019 is affected by SR. Firm value was assessed using the Tobin's Q metric. The SR was determined using content analysis from the sustainability index. Multiple linear regression analysis and Smart PLS software were the analytical techniques used. The results demonstrated that SR has an insignificant positive impact on business value.

The SR disclosure and value significance of 519 Saudi companies listed on Tadawul were analysed by Haidar and Sohail (2021). While GRI reporting was used to quantify SR disclosure, Tobin's Q score was employed to determine business worth. Regression analysis was the method used for data analysis. The results demonstrated that GRI reporting had an insignificant positive impact on firm value.

From 2013 to 2017, Nguyen (2020) investigated the connection between SR and firm value for 97 sizable publicly traded German companies. Global Reporting Initiative (GRI) was used to determine SR and return on asset was used to determine firm value (ROA). A significant negative link between business worth and the amount of sustainability reporting was found through regression analysis.

An investigation on the influence of SR on corporate value was conducted by Husnaini and Basuki (2022) from 2014 to 2017. 494 companies were employed in the study, which was undertaken in five Association of Southeast Asian Nations (ASEAN) nations, comprising Indonesia, Malaysia, Singapore, the Philippines, and Thailand. Tobin's Q was used to quantify company value while content analysis based on the GRI was used to measure SR. SR has an insignificant negative effect on company's value in accordance with the hypothesis tested that was done from the regression of Ordinary Least Square (OLS) method.

Between 2016 to 2018, Indriawati and Yanti (2021) examined whether SR disclosure has an impact on the value of 19 non-financial companies quoted on the ISE. The price to book value ratio was used to calculate the firm's value. The price to book value ratio reveals how much a company's shares are worth in the market when valued at their book value. The SR disclosure index was used to quantify the disclosure of SR. The outcome of the regression analysis showed that the impact of SR on business value is both negative and insignificant.

2.3 Theoretical Framework

Legitimacy Theory

This theory believes that there is an agreement between a firm and the society, which is legally binding, the former should ensure that all its actions benefit everyone in the society within the jurisdiction in which the firm operate daily. If the activities of a company will impact negatively on the community they operate, management is expected to voluntarily disclose the impact (Atanda et al., 2021). Modern legitimate theory began with Hogner publication on an article in the early 1980s, the thrust of the article was on social and environmental accounting practice. Haidar and Sohail (2021) opined that long surviving firms will always ensure that their operations are legal, in accordance with the law and is accepted by the society. Disclosing information voluntarily is one of the various forms managers of company legitimize the existence of their company. The legitimacy theory is predicated on the idea that society and enterprise have a social contract.

Legitimacy vacuum exists when there is a variance between a company's operations and how the society expect the firm to operate (Thompson et al., 2022). Firms normally use voluntary disclosure of information to reduce the legitimacy gap. Voluntary disclosure is that information not mandatory by law, however, is disclosed based on the firm discretion. Since legitimacy theory centers on social contract, by which companies execute a sequence of activities that society want. It is always difficult to established social contract. This is because there are different expectations from different stakeholders in the society. Nonetheless, it is frequently connected to a broad range of tacit and apparent societal demands pertaining to how companies must conduct their operations. According to Emeka-Nwokeji and Osisioma (2019), tacit demands are those that are not legislated and vary relying on the individual because they can be interpreted variously by each person. Explicit demands are those that are mandated by law. The significance of legitimacy theory to firm value and sustainability reporting is on the practical implementation of social contract that exists between business and society by a way of reporting of environmental, social and governance matters to the society. Disclosure undoubtedly affects a company's market value.

3. Methodology

The ex-post facto research technique is used in this empirical research. The population comprised of 34 (13 industrial goods and 21 consumer goods) firms as of 31st December 2022 listed on the Nigerian Exchange Limited (NGX) of which thirty-two (32) of them were chosen as sample using purposive sampling technique. The two major criteria used for selecting the 32 firms were first, each of the firm must have a constant accounting year end within the ten years period of this study and secondly, each firm should not have more

than six months of trading halt. Secondary data from each of the firm's financial statement was used from 2013 to 2022. The technique utilized to analyse the data was multiple regression.

The regression equation utilised in this research is depicted in the model below:

$$FVA_{it} = F (ENVI_{it}, SOCI_{it}, CGOV_{it}, ECON_{it}, \mu_{it}) \dots \dots \dots (1)$$

The model can be expressed as:

$$FVA_{it} = \beta_0 + \beta_1 ENVI_{it} + \beta_2 SOCI_{it} + \beta_3 CGOV_{it} + \beta_4 ECON_{it} + \mu_{it} \dots \dots \dots (2)$$

Where: "FVA = Firm Value; ENVI = Environmental sustainability disclosure; SOCI = Social sustainability disclosure; CGOV = Corporate governance sustainability disclosure; ECON = Economic sustainability disclosure; β = coefficient of the parameter; it = Time coefficient; μ = error term.

Table 1: Description and Measurement of Constructs

Variable	Variable Type	Measurement Parameters	Sources
FVA	Dependent	The summation of the current equity value plus the book value of debt divides by company's total assets Tobin's Q = $\frac{MVE + BVD}{TAS}$	Husnaini and Basuki (2022), Haidar and Sohail (2021), Meini and Chotimah (2022), Hendra et al. (2022), Mutiha (2022)
ENVI	Independent	Sustainability Reporting Disclosure Index (SRDI) SRDI = $\frac{\text{sum of items revealed}}{\text{sum of items to be revealed}}$	Bartlett (2012), Endiana and Suryandari (2021), Ashimwe, Buerthey and Kim (2022)
SOCI	Independent	SRDI = $\frac{\text{sum of items revealed}}{\text{sum of items to be revealed}}$	Emeka-Nwokeji and Osioma (2019), Nguyen, Dang, and Ta (2022), Kurniawati et al. (2022)
CGOV	Independent	SRDI = $\frac{\text{sum of items revealed}}{\text{sum of items to be revealed}}$	Almaqtari, Elsheikh, Tawfik and Youssef (2022), Hendra et al. (2022)
ECON	Independent	SRDI = $\frac{\text{sum of items revealed}}{\text{sum of items to be revealed}}$	Atanda et al. (2021), Mulya and Prabowo (2018), Indriawati and Yanti (2021)

Source: Author's Compilation (2023)

Table 2: GRI Standards

Environmental	Social	Corporate Governance	Economic
Carbon emissions	Product responsibility	Anti-corruption and code of ethics	Market presence
Biodiversity	Training and education	Governance processes	Value and supply chain

Water	Human rights	Code of corporate governance	Indirect economic impact
Energy	Labour and industrial relations	Effectiveness of risk management processes	Economic performance
Material	Employees and health safety	Conflicts of interest	Risk management
Transportation	Philanthropy	Delegating authority Process	procurement practice
Environmental compliance	Customer health safety	Communicating critical concerns	Taxes
Waste management	Security practices	Review of economic, environmental, and social topics	Anti-competitive Behavior

Source: Loh et al. (2017), Atanda et al. (2021), Werastuti, et al. (2021), Echobu et al., 2021

Diagnostic Tests

Hausman test for fixed and random effects, correlation matrix, descriptive statistics, Variance Inflation Factors (VIF) and heteroskedasticity test were performed as part of this article's diagnostic procedures.

Table 3: Descriptive Statistics

	FVA	ENVI	SOCI	CGOV	ECON
Mean	0.005831	2.925205	0.736212	1.166689	0.837684
Median	0.006067	3.000000	0.731720	1.176091	0.602060
Maximum	0.007003	3.176091	0.839345	1.397940	1.301030
Minimum	0.004019	2.000000	0.611664	1.000000	0.301030
Std. Dev.	0.000857	0.289059	0.058066	0.104376	0.341349
Skewness	-0.799704	-1.728315	0.252039	-0.008421	-0.031726
Kurtosis	2.518959	5.164457	1.901263	2.496489	1.217885
Jarque-Bera	37.19340	221.7755	19.48424	3.384095	42.39946
Probability	0.000000	0.000000	0.000059	0.184142	0.000000
Sum	1.865781	936.0657	235.5878	373.3406	268.0588
Sum Sq. Dev.	0.000234	26.65403	1.075567	3.475329	37.16958
Observations	320	320	320	320	320

Source: Eviews 10 output. The descriptive data are displayed in the table above.

Table 4: Correlation Matrix

	FVA	ENVI	SOCI	CGOV	ECON
FVA	1.000000				
ENVI	0.530228	1.000000			
SOCI	-0.057550	-0.273627	1.000000		
CGOV	-0.017501	0.248709	0.237892	1.000000	
ECON	0.282758	0.535831	-0.337704	-0.048974	1.000000

Source: Eviews 10 output

There were no strong relationships visible in the correlation matrix.

Table 5: VIF

Date: 01/18/23 Time: 02:45			
Sample: 1 320			
Included observations: 320			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
ENVI	0.030808	170.3623	1.642354
SOCI	0.158207	202.8792	1.250359
CGOV	0.017607	154.8346	1.225609
ECON	0.020508	10.72562	1.523268
C	0.359207	378.4205	NA

Source: Eviews 10 output

The purpose of the multicollinearity test from table 5 is to determine if there is an interaction between the independent constructs that can skew the findings. Using VIF, the outcome supports the absence of multicollinearity between the independent constructs. This indicates that there is no multicollinearity between the exogenous constructs because the centered VIF is less than 10.

Table 6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-stat.	32.28032	Probability F(4,315)	0.1401
Obs*R ²	93.03497	Probability Chi ² -(4)	0.1632
Scaled explained SS	106.9035	Probability Chi ² -(4)	0.2176

Source: Eviews 10 output

The heteroskedasticity test, shown in table 6 above, is carried out to determine whether error variability is constant. The need of constant variance is one of the underlying premises of linear regression. The Breusch-Pagan-Godfrey test was used to determine whether this premise was broken. The outcome showed that there was no heteroskedasticity because the likelihood of the chi square was greater than 5%, as indicated by the probability of chi-square being 0.1632 (16.32%), in other words, at 5% level of significance, it is insignificant. This suggests that the results will not be impacted by the error of variability.

Table 7: Hausman Test

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.678766	4	0.0000

Source: Eviews 10 output

The hausman test from table 7 was used to take a decision between cross section random effect and fixed effect in the OLS regression. Use fixed effect if the probability is less than 5%; otherwise, use cross section random effect. The hausman test probability value is less than 5%, which shows that the fixed effect regression model is best suited for the collected data.

Table 8: Panel Least Squares

Dependent Variable: FVA				
Method: Panel Least Squares				
Date: 01/18/23 Time: 02:12				
Sample: 2013 2022				
Periods included: 10				
Cross-sections included: 32				
Total panel (balanced) observations: 320				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ENVI	0.000818	0.064805	12.62006	0.0000
SOCI	0.002349	0.000531	4.426356	0.0000
CGOV	0.000490	0.000120	4.073255	0.0001
ECON	0.000102	0.056805	1.789247	0.0746
C	0.001052	0.000388	2.712583	0.0071
Effects Specification				
Cross-section fixed (dummy variables)				
R ²	0.967224	Mean dep. var		0.005831
Adjusted R ²	0.963185	S.D. dep.t var		0.000857
S.E. of regression	0.000164	Akaike info criterion		-14.48234
Sum squared residual	0.000006	Schwarz criterion		-14.05840
Log likelihood	2353.175	Hannan-Quinn criter.		-14.31305
F-stat	239.4525	Durbin-Watson stat		2.034000
Prob(F-statistic)	0.000000			

Source: Eviews 10 output

The regression model with all the constructs examines overall significance using the F-statistic. The model has a good fit, given the prob. F-statistic value of 0.00 is less than 0.05. The adjusted R-square of 0.96 shows that 96% of the variability in company value is described by the study's factors, while only 4% is accounted by additional constructs that were not captured in this study.

The first finding from table 8 showed a significant positive effect of environmental sustainability disclosure on company's value for listed industrial and consumer products companies in Nigeria (Prob = 0.0000, Coefficient

= 0.000818). Thus, publicly traded manufacturers of consumer goods and industrial goods with a high level of disclosure of environmental sustainability are likely to generate higher market value. The hypothesis, which states that environmental sustainability disclosure has no significant effect on the value of companies of LICGCs in Nigeria is rejected. The results of Almaqtari, et al. (2022), Nguyen, et al. (2022), and Bartlett (2012) documented evidence of a significant positive effect of environmental sustainability disclosure on company's value.

The second finding from table 8 showed that social sustainability disclosure significantly increases firm value of LICGCs in Nigeria (Prob = 0.0000, Coefficient = 0.002349). This suggests that the greater the disclosure of social sustainability, the higher the company's value of LICGCs. The alternative hypothesis that states that social sustainability disclosure has significant effect on firm value of LICGCs in Nigeria is accepted. This finding agrees with the studies of Atanda et al. (2021), Bartlett (2012), Almaqtari et al. (2022), and Nguyen et al. (2022) that found a significant positive influence of social sustainability disclosure on business value.

The third finding from table 8 showed that corporate governance sustainability disclosure significantly increases the firm value of LICGCs in Nigeria (Prob = 0.0001, Coefficient = 0.000490). This suggests that more disclosure of information about corporate governance sustainability will lead to noticeable impact on business value. The alternative hypothesis that states that corporate governance sustainability disclosure has significant effect on firm value of LICGCs in Nigeria is accepted. The findings of Emeka-Nwokeji and Osioma (2019), Almaqtari, et al. (2022) who documented evidence of significant positive influence of corporate governance sustainability disclosure on business value support this finding.

Table 8 further showed that economic sustainability disclosure has an insignificant positive impact on the share price of LICGCs in Nigeria (Prob = 0.000102, Coefficient = 0.0746). This suggests that increasing the disclosure of economic sustainability will not, on average, raise value of the quoted companies. The hypothesis that states that the disclosure of economic sustainability has no significant effect on the firm value of LICGCs in Nigeria is accepted. This outcome is in line with the finding of Atanda et al. (2021), who found that disclosure of economic sustainability had an insignificant positive effect on business value.

4. Conclusion and Recommendations

According to the investigated hypotheses, economic sustainability disclosure has an insignificant but positive impact on the firm value of LICGCs in Nigeria, whereas environmental, social, and corporate governance sustainability reporting have significant and positive effect. According to the study's findings, disclosure of environmental, social, and corporate governance sustainability will significantly boost the listed company's

value. Environmental, social, and corporate governance sustainability reporting have impact on the value of the listed companies.

The recommendations are helpful to stakeholders in sustainability reporting, it stems from the theoretical, practical, and regulatory implications.

Environmental sustainability reporting is crucial in the evaluation of SR index and this study has proved that it affects firm value positively, hence, companies should ensure adequate disclosure of environmental sustainability as contained in the GRI as it will enhance firm value, this will also spur a better regulatory rating.

The practical implication of social sustainability reporting is that LICGCs in Nigeria engage in social sustainability reporting in order to legitimize their operation. Investors should further examine customer health safety, product responsibility and human rights violation as these are among the key areas that bind a company and the society.

This study discovered that there was no sufficient corporate governance disclosure on effectiveness of risk management processes and conflict of interest in LICGCs in Nigeria. Companies should improve on the disclosure of effectiveness of risk management and conflict of interest to have an enhance share value.

Theoretical from this study, economic sustainability reporting is harmful to firm value, empirical studies should be conducted using different sectors to support this finding.

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BANK GOVERNANCE AND MARKET PERFORMANCE IN NIGERIA

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Abstract

The study looks at how bank governance affects market performance of banks in Nigeria. Specifically, it considers board composition, gender diversity, board size, bank age, and firm size effect on stock return of eight internationally authorized banks from year 2005-2021, making 136 observations. Data utilized were sourced from annual reports of the respective banks accompanied by Central Bank of Nigeria archive. Descriptive statistic, unit root, Hausman, and Pooled Ordinary Least Square tests were exploited at the 95% confidence interval. The result of the unit root test shows that all the variables were integrated at level; thus, requiring the Hausman test which confirmed the accession of the Pooled Ordinary Least Square test to determine the presence of short-run effect between the dependent and independent variables. The Pooled Ordinary Least Square showed that gender diversity, board size, and board composition were positive and significant to stock returns; however, bank age is positive and insignificantly related to stock returns of these banks. Consequently, the study concludes that bank governance significantly promotes stock returns of the internationally authorized banks in Nigeria. The study advocates for banks to continually adopt innovative products to remain competitive. In addition, an optimal mix of board size and composition alongside gender diversity should be vigorously pursued to promote market performance.

Keywords: Bank Governance, Stock Returns, CBN, Hausman Test, Pooled Ordinary Least Square.

1. Introduction

A healthy, vibrant, and efficient banking system is imperative for the proper functioning of any economy. This is because such a banking system can certainly contribute to the real sector by playing effective intermediators' role of granting credit to private individuals, institutional investors, and the government. Odi and Olulu-Briggs (2016) maintains that bank credits help simplify economic activities such as Agriculture, Forestry and Fishery, Manufacturing, Mining and Quarrying, Real Estate and Construction, Domestic Trade, Imports and Exports; and most importantly provide capital for small and medium scale Enterprises. A well-functioning banking system is one that can use its resources effectively and efficiently in the pursuit of value creation for shareholders' alongside satisfying the needs of their different stakeholders', which can vigorously be achieved through economies of scale, product differentiation, cost reduction, market reach and technological edge. For managers to achieve value creation, research has proved that they must employ proper and sustainable corporate governance codes to arrive at a balance in their financial, social, economic, and environmental decisions (Keffas & Olulu-Briggs, 2011). Nevertheless, the attainment of these objectives

may somehow contradict with the goals of the manager, resulting in a conflict of interest, generally known as agency-principal dilemma. To resolve these divergences and their associated costs, shareholders use a variety of strategies such as activity monitoring, gifting of shares, or an agreement to purchase shares at a subsidized rate, using managers' performance as a basis for such agreements (Agrawal & Cooper, 2017). Hooper *et al* (2009) is of the view that lowering agency and transaction costs results to better-quality governance, and thus increases shareholder returns. On the other hand, Fahlenbrach *et al.* (2012) suggested that providing high incentives to managers reduces firm performance. For this reason, the issue of corporate governance arose as a means of resolving agency conflicts (Hart, 1995).

The Central Bank of Nigeria (2022) define governance as a set of rules, procedures, and laws that control and regulate banks' employees and their financial activities. Bank governance involves accountability, transparency, risk management, sustainability, integrity, social responsibility, stakeholder theory and fairness. Without governance codes, the banking system will be crowded with uncertainties leading to an increase in transaction cost. Agrawal and Cooper (2017) mentioned that issues of poor governance may also lead to increase in tax revenue and loss of investors' income (Awolowo *et al.* 2018). When managers without regards to internal governance mechanisms, act in their self-interest, it erodes the benefits of good governance practices (Mselmi & Regaieg, 2017). For example, is the failures of Enron, World.com, Xerox, Allied Irish Bank, Parmalat, and other African financial institutions which have resulted to loss of employees' jobs and financial securities, not counting a drop in stock returns.

In recent times, fraud and corrupt practices carried out by bank officials have brought to question the issue of bank governance. According to the CBN (2018), there is no doubt that corruption in banks have led to a breakdown in the financial system. Moreover, board members lack independence and productivity along with fragile and ethical standards when conducting their businesses (Olulu-Briggs, 2020). Kehinde (2013) opine that corrupt acts perpetrated by bank officials makes it difficult for the banking institutions to contribute to real sector growth. Their findings named weak internal structures, incompetence of board members, poor risk management processes, and insider abuses among others.

A thorough look at the empirical literature in the case of Nigeria shows paucity of research as to how bank governance affects market performance. For instance, Erin *et al.* (2020) examines risk governance and performance of financial sector firms; Joshua *et al.* (2019) studied how bank governance influence financial performance, while that of Ifionu and Keremah (2016) researched into bank reforms and performance in Nigeria. Notwithstanding the numerous investigations on how bank governance has impacted on the performance of the banking sector in both developed and domestic societies, there still exist several

conflicting arguments. Most of the previous research have either opposed submissions or similar findings which are still being contested. This may be because of the selected sample size, geographical area, methodology employed and or the source of the data leading to uncertainties in the investigation process. More so, there may be variations in the measures of bank performance or governance principles. This study investigate how bank governance has impacted on the performance of banks from the period 2005-2021 based on available data. To avoid variations in data sampling, the banking sector index was used to proxy market returns; while firm size, gender diversity, bank age, board size and board composition are measures of bank governance. In addition, annual secondary series were gotten from the audited annual reports of eight (8) internationally recognized banks based on capacity, character, collateral, and capital (CBN, 2020). This is our point of departure from other studies.

The study is divided into five sections; first is introduction, second is literature, third, fourth and fifth are methodology, results and discussion, and conclusions and recommendations respectively.

2. Literature Review

This investigation is based on the Agency and Stewardship theories. According to Jensen and Meckling's (1976) agency theory, managerial decisions in businesses with widely held equity tend to diverge from shareholder expectations to maximize their wealth. This breeds the issue of agency problems which means that when agent act in their own interest by not divulging information i.e. knowledge asymmetry, they end up harming the owners of the business. According to Eisenhardt (1989), agency challenges develop when the interests of the principal and the agents clash, and it is difficult or quite expensive for the principal to ascertain the activities of the agents. The problem is that the principal cannot assure that the agent is acting ethically and in his best interests. However, to address issues of agency problems, researchers have made some valuable suggestions. Fama and Jensen (1983) and Eisenhardt (1989) proposed the establishment of monitoring and supervisory procedures to safeguard stakeholders from management conflicts of interest. In line, Jensen, and Meckling (1976) submitted that shareholders can exert accountability by incurring fees to stop agents from misappropriating cash.

As put forward by the stewardship theory, managers are largely driven by a desire for successes and responsibility, as such, they are outstanding company stewards who work tirelessly to produce higher corporate earnings (Donaldson & Davis, 1994). The stewardship hypothesis thus proposes that management should have a considerable number of internal executives to ensure more successful and effective general leadership.

A great deal of recent studies has been conducted on governance, bank governance and market performance in various climes, which have generated diverse discoveries too. Kakar *et al* (2021) studied 39 banks in Pakistan over the period 2010-2015, on the association between risk management, corporate governance, ownership structure, and bank performance; and showed that corporate governance and risk management substantially promotes banks' performance. Utilizing a sample of 20 commercial banks in Ghana from 2011-2017, and adopting the random Pooled ordinary least square technique, Afriyie *et al.* (2021) investigated corporate governance and its impact on the financial performance. The result upholds that board composition, net interest margin, and bank size affects profitability positively; bank age and cost-to-income ratio affects profitability negatively; but board size does not spur profitability. Erin *et al.* (2020) examined the impact of risk governance on performance of 50 listed financial sector firms in Nigeria from 2013-2017. Utilizing the Pooled OLS technique, the study shows strong support for positive and substantial relationship between risk governance and financial performance. Joshua *et al.* (2019) in their analysis of governance and performance of 10 listed deposit money banks in Nigeria covering 2007-2016, adopted the Pooled OLS method and revealed that audit committee, bank size and board composition substantially promote performance with only board size as positive but non-significant to return on assets of deposit money banks. Handa (2018) explored on how board structures affect performance of 70 banks in India from 2008-2015. The result supports that board committees, directors' remunerations, female directors, and duality of chairman-CEO significantly affects bank performance. Sampling 11 banks in Tunisia from 2006-2013, Mselmi and Regaieg (2017) adopted the Pooled OLS technique to evaluate how governance influences stock market performance. The result shows that good governance promotes stock market performance. Hajer and Anis (2016) examine how governance affects performance of 8 quoted banks in Tunisia from 2000-2011. The authors uphold that there is no visible standard governance practice and as such each bank is free to adopt its own structure to drive its performance. In Bahrain, Ahmed and Hamdan (2015) employed the Panel OLS method to assess how governance influenced the performance of 42 quoted firms from 2007-2011. The findings indicate that governance spurs performance positively. Keffas and Olulu-Briggs (2011) researched into the financial performance of both CSR and Non-CSR banks in Japan, US and UK using the non-parametric frontier analysis. The outcome of the findings shows that when firms institute corporate governance principles, they have better capital adequacy, asset quality, and are more well-organized in the management of their asset portfolios. Utilizing 30 cross-country data of 296 financial sector firms, Erkens *et al.* (2010) argues that firms with higher institutional ownership and independence of boards are worse in

terms of stock returns during financial crisis. This they acclaim attribute to higher risk exposure of the firms prior to the crisis.

3. Methodology

Purposive sampling technique was chosen for the 8 internationally authorized deposit money banks in Nigeria which includes: Access Bank, Fidelity Bank, First Bank, First City Monument Bank, Guaranty Trust Bank, Union Bank, United Bank of Africa, and Zenith Bank (CBN, 2022). Data was gotten from the audited annual reports of the banks from 2005-2021, making an aggregate observation of 136. The Pooled ordinary least square (POLS) technique was employed for the analysis. Following Afriyie *et al.* (2021); Joshua *et al.* (2019); and Mselmi and Regaieg (2017), firm size, bank age, board size and board composition were used as proxies for bank governance; and stock market return as proxy for market performance.

For stock market return, we apply the formula below on the banking sector index (BSE-Index);

$$\text{MRTS}_{i,t} = (P_{i,t} - P_{i,t-1} / P_{i,t-1}) \times 100 \quad 1$$

Thereafter, we apply the descriptive, unit root, hausman, and pooled ordinary least square techniques.

Our study model becomes.

$$\text{MRTS} = f(\text{BOS}, \text{BCOM}, \text{BA}, \text{FZ}, \text{GDY}) \quad 2$$

$$\text{MRTS}_{it} = \beta_0 + \beta_1 \text{BOS}_{it} + \beta_2 \text{BCOM}_{it} + \beta_3 \text{BA}_{it} + \beta_4 \text{FZ}_{it} + \beta_5 \text{GDY}_{it} + \sigma_{it} \quad 3$$

$$\beta_1, \beta_2, \beta_3, \beta_4 \text{ and } \beta_5 > 0$$

Where, $P_{i,t}$ and $P_{i,t-1}$ = Opening and closing price for the market (BSE-Index).

MRTS = Market return; BOS = Board size; GDY = Gender diversity; BCOM = Board composition; BA = Bank age; FZ = Firm size (Natural logarithm of total assets); $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 = Constant parameters; β_0 = Intercept; i = different firm I in year t ; σ_{it} = Error term.

4. Results and Discussion

Table 4.1: Descriptive Outcome

	MRTS	BOS	BCOM	BA	FZ	GDY
Mean	0.004630	7.398438	2.285751	50.00000	8.225299	0.246844
Standard dev.	0.001383	1.186139	0.487393	36.34307	1.871126	0.115816
Skewness	0.505961	-0.495830	1.227352	0.871901	-0.283612	0.126518
Kurtosis	2.125250	2.743924	6.711861	2.183019	1.855741	2.564425
Jarque-Bera	9.542272	5.594478	105.6186	19.77761	8.699048	1.437934
P-values	0.008471	0.060978	0.000000	0.000051	0.012913	0.487255

Source: E-views10

From table 4.1, the descriptive analysis of the variables shows that MRTS, BOS, BCOM, BA, FZ, and GDY have their annual mean values as 0.004630, 7.398438, 2.285751, 50, 8.225299, and 0.246844. The level of

variability from mean values of MRTS, BOS, BCOM, BA, FZ, and GDY are 0.001383%, 1.186139%, 0.487393%, 36.34307%, 1.871126%, and 0.115816 singly. MRTS, BCOM, GDY, and BA are positively skewed while BOS, and FZ are skewed negatively. BCOM is leptokurtic; MRTS, BA and FZ are platykurtic; and BOS and GDY are mesokurtic. The Jarque-Bera p-values indicates that all the variables are not normally distributed except BOS and GDY.

4.2 Stationary Test

Table 4.2: Levin, Lin & Chu (LLC) test

Variables	LLC Result	P-value	Remark
MRTS	- 2.73435	0.0031	I(0)
BOS	- 3.15796	0.0008	I(0)
BCOM	-7.29321	0.0000	I(0)
BA	-4.24162	0.0000	I(0)
GDY	8.66373	0.0000	I(0)
FZ	-6.99871	0.0000	I(0)

Source: E-views10

From table 4.2, all the variables are integrated at level I (0) at the 95% confidence interval. This outcome prompts the employment of the pooled ordinary least square with either the random or fixed effect model based on the Hausman test.

4.3 Hausman Test

Table 4.3: Hausman Test

Correlated Random Effects – Hausman Test			
Test cross-section random effects			
Test summary	Chi-Sq. stat	Chi-Sq. d.f.	Probability
Cross-section random	191.406295	5	0.0000

Source: E-views10

From table 4.3, the Chi-Sq. Stat. of 191.406295 reveals that the individual effects are uncorrelated with the explanatory variables at 95% confidence interval. Thus, our outcome evokes the application of the fixed effect model.

Table 4.4 Pooled OLS Result

Dependent variable: MRTS				
Method: Panel Least Squares				
Variables	Coefficient	Std. error	t-statistic	Probability
BOS	0.000711	0.000287	2.477217	0.0145
BCOM	0.623438	0.157125	3.967795	0.0001

BA	0.016023	0.016292	0.983490	0.3272
GDY	0.026849	0.009737	2.757344	0.0067
FZ	42.95459	13.76808	3.119867	0.0022
C	0.005640	0.005376	1.049077	0.2961
Effects specification				
Cross-section fixed (dummy variables)				
R-squared	0.759162		F-statistic	81.95649
Adjusted R-squared	0.749899		Prob(F-statistic)	0.000000
Durbin Watson statistic	1.567651			

Source: E-views10

From table 4.4, the result affirms that BOS, BCOM, FZ, and GDY are positive (0.000711, 0.623438, 42.95459, and 0.026849) and significant (2.477217, 3.967795, 3.119867, 2.757344) to market returns (MRTS) respectively. This implies that 1% increase in BOS, BCOM, FZ, and GDY will lead to 0.000711%, 0.623438%, 42.95459%, and 0.026849% increase in MRTS individually. BA is positive (0.016023) but insignificant (0.983490) to MRTS. This indicates that 1% increase in BA will cause MRTS to reduce by 0.016023%. The Adjusted R-square of 0.749899 signifies that bank governance explains 74.99% variations in MRTS; while the other are captured by variables not included in this study. The D-W stat of 1.567651 indicates that the model is free from first order autocorrelation and the F-stat. of 81.95649 indicates that overall, the model significantly fits the data.

Table 4.5: Diagnostic Testing: Cross-Section Dependence (correlation) Test

Test	Statistic	Prob.
Breusch-Pagan LM	-0.867735	0.3855
Pesaran scaled LM	1.475302	0.1401
Bias-corrected scaled LM	1.720649	0.0853
Pesaran CD	1.809009	0.0704

Source: E-view 10.0

From table 4.5, the correlation tests indicates that their probability values are higher than 5% level of significance, meaning that there is no residual cross-sectional dependency (correlation) among the variables.

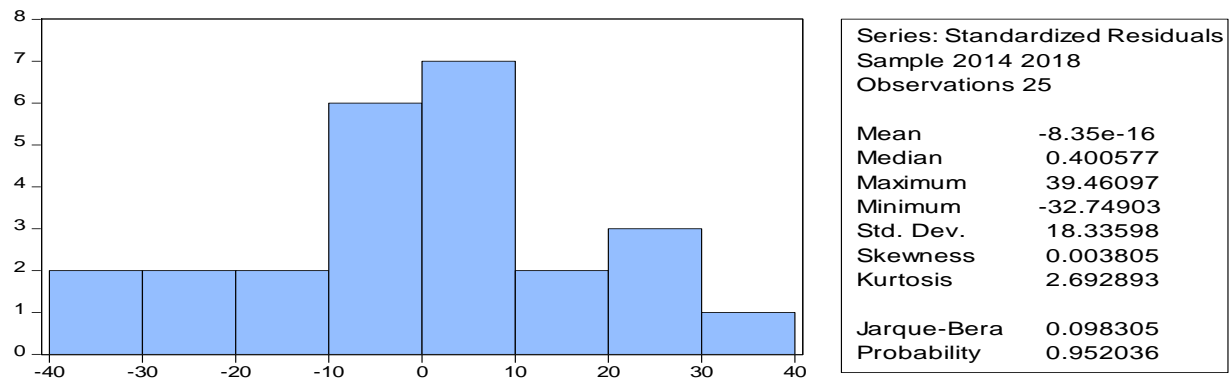


Figure 4.1: Diagnostic testing: Normality Test

From figure 4.1, the histogram is bell-shaped and the p-value of the Jarque-Bera statistic is above the 5% threshold (0.952036). As a result, the null hypothesis that the distribution is normally distributed holds.

5. Discussion of Findings

In determining market performance of banks, board composition is key to an increase in stock returns. A well-composed board is an optimal mix of both directors and non-executive directors which allows for efficient and effective decision making as regards their financing, investment, dividend, and liquidity decisions. This is supported by Carter et al. (2003) who advocated for board diversity as it improves the potential for information and thus maximize firm's performance through the aggregation of human and social capital. Also, Lynall et al. (2003) opine that board directors are responsible for external dependency management, which helps to reduce uncertainties and transaction costs in accordance with quality governance; in line with Kakar et al (2021); Afriyie et al (2021); Erin et al (2020); Joshua et al (2019); Handa (2018); Mselmi and Regaieg (2017); and Ahmed and Hamdan (2015). However, it differs from the study by Hajer and Anis (2016); and Erkens et al (2010) that corporate governance does not promote the performance of firms.

Board size significantly promote stock returns as well. This means that as firms increase in size, it is expected that the number of persons in the board should increase to allow for more comprehensive and quality decision making, collaborative innovations that will affect stock returns positively (Carter et al, 2003; Lynall et al, 2003). Bank age is positive but insignificant to stock returns. This entails that as banks age, it returns tends to fall gradually. This finding can be likened to the fact that most of the aged banks are already in their maturity phase of development and most of their staff have insufficient technical expertise about contemporary business novelties. This is in consensus with Erin et al (2020); Joshua et al (2019); Handa (2018); Ahmed and Hamdan (2015); and Mselmi and Regaieg (2017) that the size of a firm does not lead to more returns rather the strength of their broadened undertakings.

Firm size substantially promotes stock returns. This is due to the benefit banks enjoy in terms of economies of scale, strong competitive advantage, and wider coverage. This finding agrees with Hooper et al (2009) claim that lower agency and transaction costs are a result of better-quality governance, which is achieved through the size of their assets. On the contrary, most studies have shown that better governance does not always promote shareholder wealth, particularly during times of financial crisis (Beltratti & Stulz, 2012; Gupta et al., 2013).

Finally, gender diversity significantly stimulates stock returns. This means that increasing the ratio of female directors to that of their male counterpart, raises the bank's market price per share. This view is supported by Vitolla et al (2019) that increasing gender diversity helps in enhancing information disclosure which stimulates stock returns of banks.

Limitations

This study is restricted to only 8 DMBs that have international recognition by the Central Bank of Nigeria as of 2021. Inclusion of other DMBs with same criteria can influence the outcome of the study. Also, not all the dimensions of bank governance are captured in this study, for instance, CEO duality, board class, religion, and ethnicity. All of these can affect the outcome of the study. Lastly, the study is restricted to only one sector of the Nigerian economy which is the banking sector.

6. Conclusion and Recommendations

The study applied the agency and stewardship theories to investigate the influence of bank governance on market performance in Nigeria covering the period 2005-2021, giving an aggregate of 136 observations. The explanatory variables are board composition, size, gender diversity, bank age and bank size; and the explained variable is stock market return which is proxy of the sectorial index of banks in Nigeria. The study's findings strongly affirm that board size, board composition, gender diversity, and firm size are core aspects of bank governance that exert positive and significant influence on market performance. However, banks' age has no significant influence on performance. In line with the findings, this study strongly advocates for banks to continually innovate products to remain competitive. In addition, an optimal mix of board size and composition as well as gender diversity should be actively pursued to promote market performance.

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THE BEHAVIOUR OF PERSONNEL COST EXPENDITURE AND EFFICIENCY OF USAGE WITH THE INTRODUCTION OF IPPIS AMONG THE PUBLIC INSTITUTIONS IN NIGERIA: SYNOPSIS FROM DATA ENVELOPMENT ANALYSIS

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Abstract

The study examined the pattern of personnel cost expenditure behavior and its efficient usage among decision-making units (DMUs) in the geo-political zones in Nigeria from 2014-2021. Population of the study comprised eighty-five (85) DMUs in the six (6) geo-political zones of the country. Taro Yamane technique was adopted in selecting fifty (50) DMUs from three (3) geo-political zones among education and health sectors. Data used were collected through the Annual General Warrants. Data Envelopment Analysis (DEA) model was adopted for the analysis. The results revealed that there were fluctuations in the efficiency scores of the personnel cost utilization among the DMUs across the geo-political zones. The average efficiency scores of CCR and BCC models showed 0.71 and 0.82, 0.69 and 0.82 efficiency scores for both health and education sectors respectively. The overall results indicated that none of the units achieved full efficiency across the geo-political zones. The study recommended a central scheme of control initiatives by the Ministry of finance to the DMUs to reduce slack personnel cost balances and ensure full resource utilization. The conclusion of the study is that only a periodic and regular evaluation of the resource inputs to the DMUs and the efficient usage among the DMUs across the geo-political zones of the country can enhance full efficiency.

Keywords: BCC, CCR, Data Envelopment Analysis (DEA), Decision Making Units (DMUs), Efficiency Scores, IPPIS

1. Introduction

Before the introduction of Integrated Payroll and Personnel Information System (IPPIS) into the public institutions, one of the common challenges of the financial management is the determination of the efficient usage of emolument costs released to all the Decision-Making Units (DMUs) operating in all the six geo-political zones of the country. Out of all the statutory financial allocations to the DMUs, personnel cost releases assume the largest proportion. It is also deeply controversial in usage and vulnerable to abuse (Odewole & Salawu, 2020). Personnel cost is a part of the financial releases to both fully and partly funded public institutions throughout the financial year for settling staff salaries. The advent of IPPIS brought about a change in the dynamics of personnel cost usage. There was a sudden shift from the traditional method and procedure to the electronic releases of the personnel costs to the DMUs. Arrangement was put in place for statutory financial provisions to be made annually from the budgeted personnel cost allocations and credited to the DMU's budget line in either IPPIS's office or GIFMIS's office (Odewole, Ololade & Akande, 2022). Access to the personnel fund is strictly regulated by the accountant-General's office. The pattern of releases

is uniform across the DMUs throughout the six geo-political zones of the country. The challenge among the DMUs is the assessment of the efficiency of the usage of the cost inputs in the geo-political zone with the introduction of IPPIS. Therefore, the focus of the study is the assessment of the pattern of personnel cost expenditure and the efficiency of usage across the geo-political zones in Nigeria. Data Envelopment Analysis (DEA) was adopted as a technique to generate the efficiency scores. It is a non-parametric tool commonly employed in determining the technical efficiency of an entity's resource utilization. Most of the previous literatures on the study of efficiency concentrate largely on productive and technical efficiency in the analysis of resource allocation and usage of cost inputs in an entity. The shortcoming of the approach is its limitation and restriction on only firms' efficiency with the private sector. The focus has therefore been on the micro-economic variables. The public sector service efficiency of resource usage is which deals with macro-economic variables and wider scope is hardly harnessed and addressed. The gap created by the previous studies is therefore the main focus of this work. The macro-economic variables of the economy were considered. This makes the work largely essential and beneficiary not only to operators at the micro-economic levels but also to government functionaries and the larger society. The study is therefore driven by public service efficiency theory. The remainder of the paper is as follows: following the introductory section, section 2 of the study reviewed the literature. Section 3 dwells on the methodology. Section 4 presents, analyses, and discusses the results of the work while section 5 concludes the study.

2. Literature Review

Financing public sector entities for efficient service deliveries is one of the burning issues in public financial theory and management. Efficient usage of personnel cost releases to the DMUs has become a renewed challenge to the central authority even after the introduction of Integrated Payroll and Personnel Information System into the public sector entities. IPPIS was specifically initiated into the public service payroll management to moderate the trends of payroll abuses in the entity (Iloanya, Udunze & Nebo, 2020). The inability of the conventional, manual payroll system to achieve a fraud-free personnel payment system. and account accurately for aggregate salary payments for the total workforce in the public service propelled its introduction as a gateway to transparent personnel cost disbursement and utilization (Nangih & Davies, 2017, Asishana, 2020). The shift to the payroll payment system changed the pattern of cost releases to the DMUs. Unlike the conventional and traditional method of personnel cost releases, IPPIS platform brought about a complete dynamic into the personnel payment procedure. The employee provides a unique number tagged 'IPPIS No' with a designated account number at the point of capturing where monthly salaries are paid (Nangih & Davies, 2017). Monthly salaries inputs, new placements, salary adjustments, incremental credits,

and implementation of salary awards etc are initiated on a monthly basis to smoothen the process of salary payments. A trial payment payroll is released to the DMUs to verify the correctness of payment components for all employees enrolled on the payment system. At the trial payroll stage, corrections on monthly salary computations are allowed before the release of final payroll when salaries payment is finalized (Jared, Migiro & Mutambara, 2017, Odewole & Salawu, 2019). Out of all the central statutory allocations to the DMUs, personnel cost releases are more prone to much abuse with a high incidence of 'ghost worker syndrome' payments prevalent in the federal civil service (Odewole & Ololade, 2022, Idris, Adaja, & Audu, 2015). With the introduction of IPPIS payment platform, the integrity of employees' personnel payment data is enhanced and preponderance of serial wastages in personnel cost fund is minimized (Iroanusi, 2019, Odewole, Olowookere & Oladejo, 2021). Salient provisions in the contents of the new personnel payment platform are to ascertain the actual personnel cost emoluments payable on monthly basis by the central authority. One of the greatest hurdles among the DMUs is the ascertainment of the efficiency in personnel cost usage across the geo-political zones.

The determination of the efficient usage of resource utilization among the DMUs with the use of DEA has a trace to the field of economics, finance, and accounting theories (Inua & Maduabum 2018, Robert, Beata & Kristina, 2018). DEA's application focuses not only on single input/output flows but also on multiple inputs/outputs variations in the entity's efficiency determination (Agasisti & Pohl 2019, Abdulkareem & Oyeniran, 2019). Early proponents of DEA measurement based its use on single variable input/ output and multiple inputs/output variables. Charnes, Cooper, and Rhodes (1978) originally proposed DEA as a technical tool of resource assessment with the assumption of no random mistakes. However, assumption was heavily criticized by many scholars as being unrealistic (Tuskan & Stjanovic, 2018, Bonaccorsi & Dario, 2019). The efficiency performance measurement dated back to the theories of both allocative and technical efficiency by Farrel (1957). The initial application of DEA was visited on not-for-profit-making organization's assessment of efficiencies such as hospitals, schools, etc. The usage later extended to other private institutions like insurance companies, banks etc (Inua & Okafor, 2019, Kempkes, G., & Pohl, C., 2018). Currently, its adoption has prominence and over-bearing dominance over the univariate financial ratios in the appraisal of entities' performance (Lin & Zuo 2019, Cheng, Cai, Tao, He, Chen, & Chen, 2019, Hernandez & San, 2019 Rhys & Tom, 2019). Prominent scholars on DEA have anchored their studies on productive efficiency theory in line with Farrel's (1957) proposition across different fields of study. The present study however focuses on public service allocative efficiency theory as a departure from the norm. The theory also provides a theoretical framework that drives the rest of the work.

3. Method of Analysis

The models of Charnes, Cooper, and Rhodes (CCR) (1984) and Banker, Charnes and Cooper (BCC) (1984) were used comparatively in the determination of the pattern of personnel costs efficiency analysis across three geo-political zones. Both constant, variable inputs and outputs were adopted by the study in the assessment of DEA techniques. The output-oriented version carries efficiency scores for the DMUs, within the range of 1 to infinity. Whereas efficiency score is localized between 0 and 1 in the input-oriented version. The rate of efficiency for each of the DMU as a unit of resource in a set of $k = 1, \dots, n$. A particular decision-making unit is therefore assessed according to other available resource. The maximal value is 1, or 100% indicates highest efficiency scores while any value less than 1 is an indication of the relative inefficiency.

The functional proposition of the Data Envelopment Analysis model with s outputs variables, variable inputs of m , and u DMU's, in line with (Charnes *et al.*, 1978) and Cooper *et al.* (2007) is therefore as follows:

$$\max h_0(u, v) = \frac{\sum_r u_r y_{r0}}{\sum_i v_i x_{i0}}$$

Subject to:

$$\begin{aligned} \frac{\sum_r u_r y_{r0}}{\sum_i v_i x_{i0}} &\leq 1 \text{ for } j = 1, \dots, n, \\ u_r, v_i &\geq 0 \text{ for all } i \text{ and } r \end{aligned} \quad (1)$$

Charnes and Cooper (1962) proposition adopted for the linear fractional programming with a combination of solution of (u, v) for which $\sum_{i=1}^n v_i x_{i0} = 1$ was selected. The equivalent linear problem arising from the solution resulted to the variance of variables from (u, v) , to (μ, v) , which is a product of the application of DEA model and universally re-written as follows:

$$\max z = \sum_{r=1}^s \mu_r y_{r0}$$

Subject to:

$$\begin{aligned} \sum_{r=1}^s \mu_r y_{rj} - \sum_{i=1}^m v_i x_{ij} &\leq 0 \\ \sum_{i=1}^m v_i x_{i0} &= 1 \\ u_r, v_i &\geq 0 \end{aligned} \quad (2)$$

While the linear programming dual problem is

$$\Theta^* = \min \Theta$$

Subject to:

$$\begin{aligned} \sum_{j=1}^n x_{ij} \lambda_j &\leq \Theta x_{i0} \quad i = 1, 2, \dots, m; \\ \sum_{j=1}^n y_{rj} \lambda_j &\geq y_{r0} \quad r = 1, 2, \dots, s; \\ \lambda_j &\geq 0 \quad j = 1, 2, \dots, n. \end{aligned} \quad (3)$$

The transformation model which is often referred to as the "Farell's model" among the academia, or output-oriented model, maximizes outputs of a given DMU with the given input level.

The second expressional transformation is the input-oriented model. It minimizes inputs at a given output level (Zhu, 2009, Cooper *et al.*, 2007):

$$\min \Theta - \varepsilon \left(\sum_{i=1}^m S_i^- + \sum_{r=1}^n S_r^+ \right)$$

Subject to:

$$\begin{aligned}
\sum_{j=1}^n \lambda_j x_{ij} + S_i^- &\leq \theta x_{i0} \quad i = 1, 2, \dots, m; \\
\sum_{j=1}^n \lambda_j y_{r0} + S_i^+ &= y_{i0} \quad r = 1, 2, \dots, s; \\
\lambda_j &\geq 0 \quad j = 1, 2, \dots, n \\
\sum_{j=1}^n \lambda_j &= 1r
\end{aligned} \tag{4}$$

Where, x_{ij} indicates the i th input of the j th DMU, y_{ij} indicates the r th output of the j th DMU, and λ_j and U_r , indicate the weight of the j th DMU while v_r is the efficiency score of DMU _{j} .

The VRS assumption or BCC model is used in the determination of the scale of efficiency which is as follows:

$$\text{Scale Efficiency} = \frac{\text{Technical efficiency from CRS}}{\text{technical efficiency from VRS}} \tag{5}$$

Cook, Kaoru and Joe (2014) rolled out a relationship between a minimum number of DMUs to the number of variable inputs and expressed as follows:

$$n \geq \max\{m \times s, 3(m + s)\}, \tag{6}$$

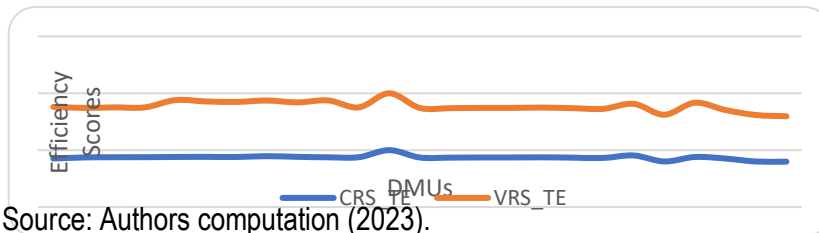
Where m , s , and n are the numbers of inputs, outputs and DMU's respectively.

4. Interpretation and Discussion of Results

Figure 1 and 2 show the generated efficiency scores from the DMUs in both health and educational institutions respectively in year 2014. The efficiency scores through CCR and BCC models were based on personnel costs utilization among the DMUs. The mean efficiency scores were 0.871 and 0.901 for CCR and BCC respectively. The interpretation in comparing with average efficiency, is that 40% of the DMUs in the health sector operated above the sectoral average of 0.899, whereas the remaining 60% were less efficient. Similarly, under the BCC only 28% of the DMUs in the education sector operated above the sectoral average of 0.861 in comparison with the overall average, while the remaining 72% were inefficient. It therefore implies that most of the DMUs in both sectors were not efficient in personnel costs utilization. The Decision-Making Units (DMUs) could not therefore efficiently utilize all cost allocations in their respective envelopes in each allocative financial year without slack balances (Salawu & Odewole, 2020, Lin & Zuo, 2019). In analyzing the personnel cost utilization on geo-political zones under health sector, the efficiency score attained in the Southwest region 1. The North central zone recorded the mean score of 0.883, while in the Eastern zone, 0.880 was the highest recorded mean score. By implication, the DMUs under health sector in the Southwest region displayed the highest efficiency frontiers in personnel cost utilization among the three regions. Under the education sector, Southwest region displayed the highest attainable efficiency score at 0.851. However, in the North central, 100% efficiency was obtainable among the DMUs. while Eastern zone recorded 0.852 as the highest efficiency score attainable. It therefore implies that, North central performed better than the

other regions by fully utilizing all emolument cost releases to all the DMUs without idle balances in the personnel cost fund. The personnel cost budget was transparently free from being padded.

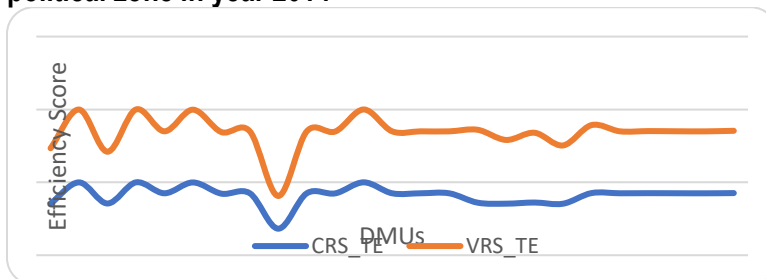
Figure 1: Efficiency scores curves of personnel costs utilization in the health sector on geo-political zone basis in 2014



Source: Authors computation (2023).

Figure 1 shows the graphical presentation of the results of usage of personnel costs for the ministries among health institutions using both variable returns to scale and constant return to scales (BCC and CCR) models.

Figure 2: Efficiency scores curves of Personnel costs utilization under education sector on geo-political zone in year 2014

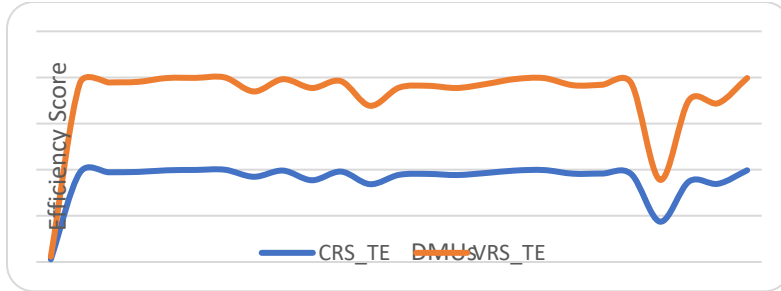


Source: Authors computation (2023)

Figure 2 presents the graphical illustration of the personnel costs usage among educational institutions using the constant returns to scale and variable returns to scale (CCR and BCC Models).

Figures 3 and 4 present the trend of the efficiency scores generated from the DMUs in the usage of personnel costs in 2015. Under the health sector, 80% of the DMUs operated above the benchmark. The DMUs were averagely efficient in the utilization of personnel cost fund during the year. That is, the DMUs could not achieve the maximal efficiency score of 1. However, the remaining 20% units were distinctively inefficient. Similarly, under the education sector, the sectoral average is 0.945 under BCC, the findings revealed that only 72% of the DMUs in the sector operated above this level. The assessment therefore rated DMUs under the health sector in the Eastern region above the other two zones. The entities maximally utilized all the allocated personnel cost fund efficiently without left-over balances during the accounting year (Odewole&Salawu,2021). In the North central, 0.990 efficiency score was obtainable, while the Eastern zone recorded 0.973. The ability of the DMUs to effectively utilize the personnel fund was clearly manifested better in the Southwest than the other regions.

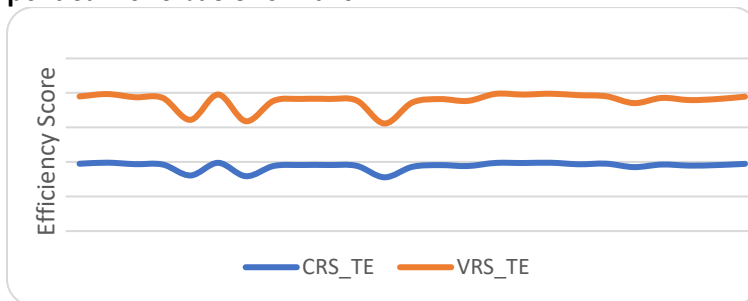
Figure 3: Efficiency scores curves of personnel cost utilization under health sector on geo-political zone basis in 2015



Source: Authors computation (2023).

Figure 3 shows the trend of Efficiency of Personnel cost fund among the DMUs under Health Sector in 2015 with the application of CCR and BCC models. It shows that the DMUs were averagely inefficient in personnel cost fund under the two models in the three regions.

Figure 4: Efficiency scores curves on personnel cost utilization under education sector on geo-political zone basis for 2015

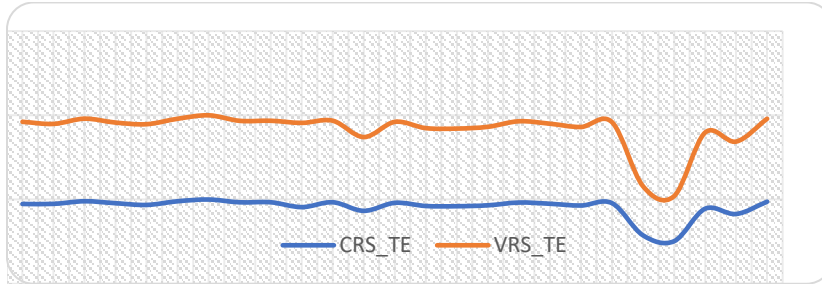


Source: Authors computation (2023).

Figure 4 shows trend of the scores of efficiencies of personnel cost funding among the DMUs in the Education Sector for all six geo-political zone of the country for the year (2015). Both CCR and BCC reveal that the DMUs were inefficient.

Figures 5 and 6 illustrate the performance of cost inputs' usage among the DMUs in the two sectors in 2016. The efficiency frontiers were marginally different from the previous years' assessments. None of the entities attained efficiency score of 100% or equal to 1. On the zonal basis analysis, the highest efficiency mean score attained in the Southwest region was 0.980. The north central zone recorded 0.968, while the eastern zone recorded 100% efficiency score in fund utilization. During the year, the DMUs in the eastern region fully utilized the personnel cost fund allocated to the DMUs in the region. On the contrary, in the education sector, 0.924 was the highest attainable efficiency score among the DMUs in the Southwest. The North central recorded 0.913 efficiency score, while 0.921 was the highest efficiency score attainable in the Eastern zone. The efficiency index was therefore highest among the DMUs in the Southwest region in the usage of allocated personnel fund compared with other regions (Odewole, Olowookere & Oladejo, 2020).

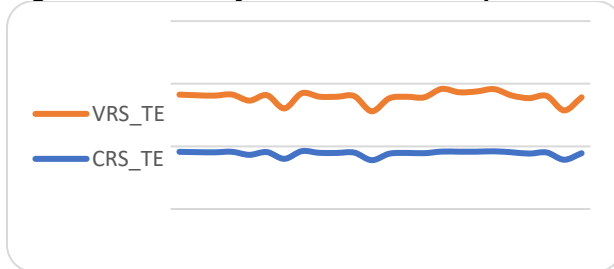
Figure 5: Efficiency scores curves for personnel cost utilization under health sector on geo-political zone basis for 2016



Source: Authors computation (2023)

Figure 5 portrays the pattern of cost efficiency scores among the health institutions in 2016. Both CCR and BCC models' results reveal that most of the DMUs were inefficient in personnel cost usage.

Figure 6: Efficiency scores curves for personnel usage under education in 2016



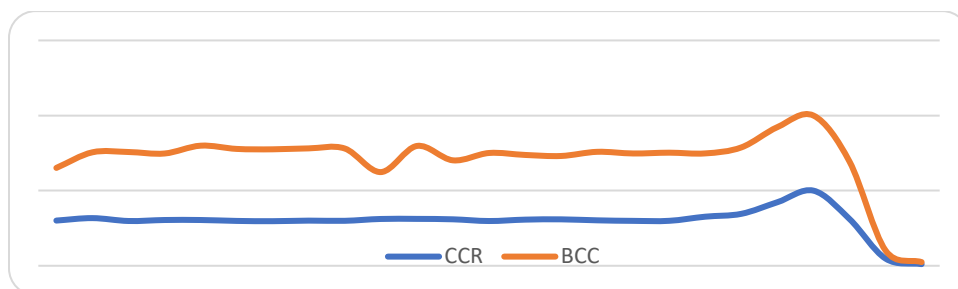
Source: Authors computation (2023)

Figure 6 indicates the pattern of scores of personnel cost efficiency among the educational institution in 2016 using CCR and BCC models. The results reveal that most of the DMUs were inefficient in fund usage within the accounting year.

Figures 7 and 8 represent the scores of efficiencies generated from Decision-making units in both sectors in 2017. The average cost efficiency usage in the selected geo-political zones level were 0.595 and 0.822 respectively for CCR and BCC. That is, 76% of the DMUs in the health sector among the geo-political zones operated above the sectoral average of 0.822. The efficiency scores of the remaining 24% DMUs were below the cut-off points. The behavior of input usage was however different among the educational institutions during the year. Under sector, the sectoral average was 0.930 for the BCC results, and only 48% of the DMUs operated above the standard. The remaining 52% of the DMUs could not utilize the available inputs to the level of the benchmark. Also, the analysis of the inputs' utilization shows that the highest mean score was attained in Southwest region with full efficiency frontiers of 100% or 1. It therefore indicates an improvement over the 2016 input utilization performance. The highest attainable mean score was 0.634 in the North while the Eastern zone recorded 0.624 efficiency score. It therefore implies that South-western region was ranked top with the highest mean efficiency score compared to other regions under health sector. The trend of inputs' usage however differs significantly under education sector. The Southwest attained the

highest efficiency scores of 0.693 and 0.768 in the North Central. The Eastern zone recorded 0.623. The performance efficiency score analysis therefore put the North central region as the best performer in the personnel inputs' usage for the year.

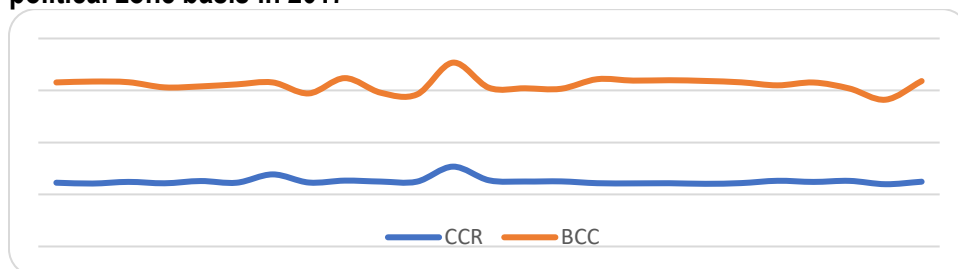
Figure 7: Efficiency scores curves for personnel cost usage under health sector on geo-political zone basis for 2017



Source: Source: Author's Computation (2023)

Figure 7 presents the trend of the cost efficiency among the health institutions for the three geo-political zones of the country for the year (2017). Both CCR and BCC reveal that the entities could not maximize all the allocated fund budgeted for the year

Figure 8: Efficiency scores curves for personnel cost utilization under education sector on geo-political zone basis in 2017



Source: Author's Computation (2023)

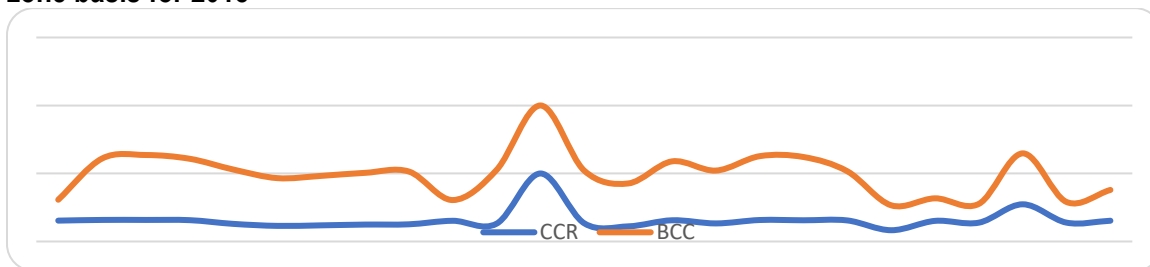
Figure 8 illustrates the trend of the efficiency of personnel cost funding among the DMUs in the Education Sector for the three geo-political zones of the country for the year (2017). Both CCR and BCC results reveal that the DMUs in the sector were marginally inefficient in the personnel cost usage for the year

Figures 9 and 10 indicate the summary of the efficiency scores for both education and health sectors in 2018. The results of the mean efficiency levels for both CCR and BCC models are 0.317 and 0.682 respectively. The overall sectoral average efficiency score was put at 0.682. From the analysis, only 72% of the DMUs in the health sector were afloat above the sectoral average and are adjudged marginally efficient in the personnel cost usage, while the remaining 28% are distinctively inefficient in the personnel cost inputs' utilization. Similarly, under education sector, the sectoral average is 0.879 with BCC model. The result of the

finding therefore shows that only 52% of the DMUs in the sector could sustain an acceptable efficiency level above the sectoral average while the remaining 48% were inefficient.

The highest efficiency score of 100% was attained in the Southwest followed by North central with 0.317 and Eastern zone was 0.312. It therefore implies that both the North central and Eastern zones had heavy idle personnel cost balances. This could be because of excess personnel cost allocations to the DMUs in the zones over and above the actual amount required. Under education sector, 0.320 is the highest attainable efficiency score among the DMUs in the Southwest, the Eastern zone, 0.321, North central, 0.319 efficiency score. Eastern region performed better than the other regions in the efficient utilization of personnel cost inputs' appraisal for the year.

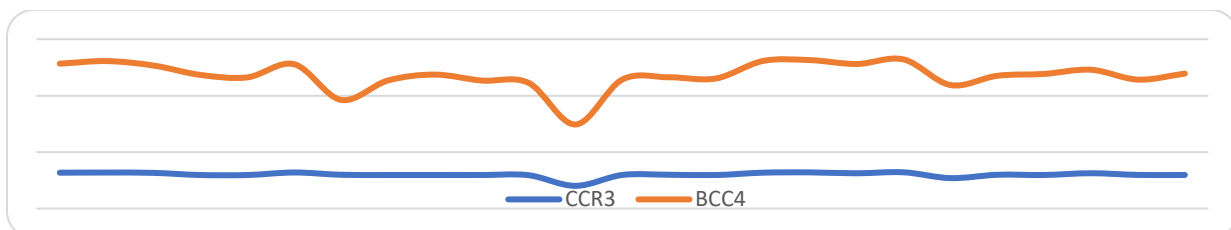
Figure 9: Efficiency scores curves for personnel cost usage under health sector on geo-political zone basis for 2018



Source: Source: Author's Computation (2023)

Figure 9 indicates the trend of efficiency in the utilization of personnel cost inputs among the DMUs in the health sector for the year (2018). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Figure 10: Efficiency scores curves for personnel cost usage under education sector on geo-political zone basis in 2018



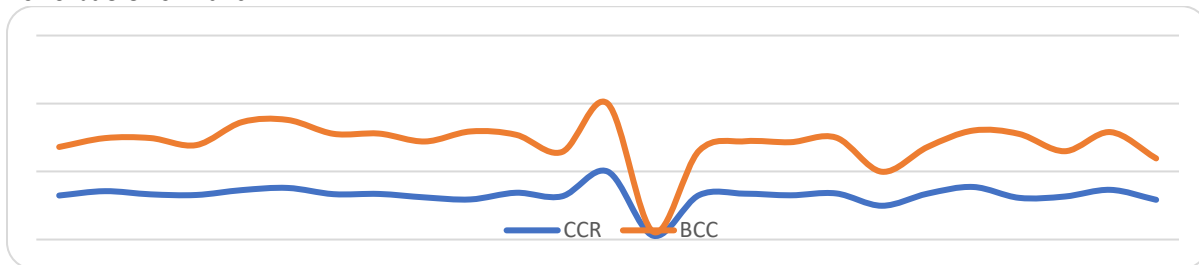
Source: Source: Author's Computation (2023)

Figure 10 shows the trend of the efficiency of personnel cost usage among the DMUs in the education sector for the year 2018. Results of CCR and BCC reveal that the DMUs were inefficient in the personnel cost inputs' usage and could not fully utilize all the allocated personnel fund budgeted for the year.

Figures 11 and 12 display the pattern of behavior of efficiency scores curves generated from the decision-making units under both education and health sectors in 2019 in the geo-political zones. Only 48% of the DMUs in education soared high above the average of 0.763 with the application of BCC model. In the

Southwest region, the mean score attainable was 100% efficiency. The DMUs operated at the highest efficiency frontiers in the personnel cost usage during the year. The Southwest optimum efficiency score was, however, restricted to the region. In the North central zone, the mean score obtainable was 0.731 while Eastern zone recorded 0.688 as the highest average score. By implication, the DMUs in the Southwestern region demonstrated the ability of fully utilizing the personnel cost releases among the three regions. The trend was however restricted to the DMUs in health sector. In the education sector, Southwestern zone obtained 0.641. Also, in the North central, 0.710 efficiency was recorded among the DMUs. The Eastern zone recorded 0.633 as the highest efficiency score attainable. The implication therefore is that the North central region was performing better than the other regions in the personnel cost usage during the year in the sector.

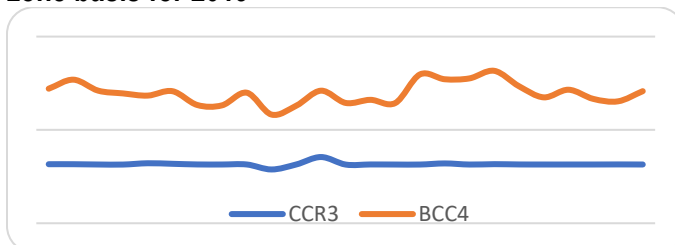
Figure 11: Efficiency scores curves for personnel cost usage under health sector on geo-political zone basis for 2019



Source: Source: Author's Computation (2023)

Figure 11 shows the trend of the efficiency of personnel cost funding among the DMUs in the health Sector for the three geo-political zones of the country for the year (2019). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Figure 12: Efficiency scores curves for personnel cost usage under education sector on geo-political zone basis for 2019



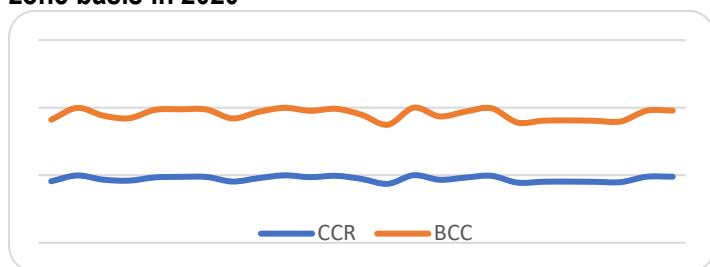
Source: Author's Computation (2023)

Figure 12 shows the pattern of the efficiency of personnel cost funding among the DMUs in the Education Sector for the three geo-political zones of the country for the year (2019). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Figures 13 and 14 highlight the performance of the efficiency scores generated from both education and health institutions in 2020. In the health sector, 52% of the DMUs sustained a benchmark of 0.955 with 48%

operated below the minimum level. Under the education sector, only 88% of the DMUs achieved an average of 0.865 using the BCC model while others were overtly inefficient. The highest mean scores obtained by the three regions - Southwest region, North central and Eastern region were 0.998, 0.996 and 100% respectively. It therefore shows that Eastern region dominated other three regions in the health sector. In contrast, under education sector, the Southwest zone recorded the highest attainable efficiency score of 0.932 while the North central achieved 0.894 as the highest mean obtainable with 0.889 for the Eastern zone as the highest efficiency score attainable. The Southwestern region demonstrated a special ability in the personnel cost usage among the other zones during the year.

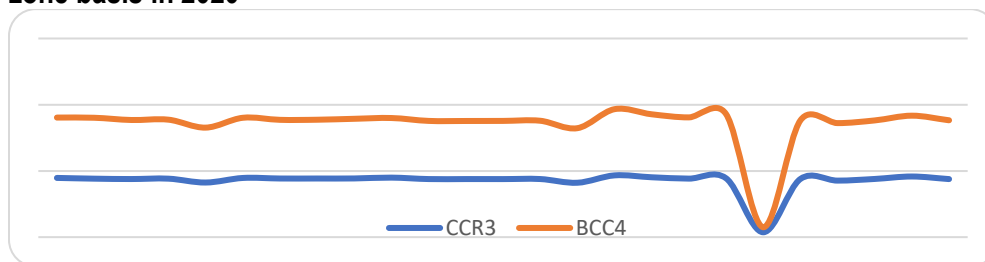
Figure 13: Efficiency scores curves for personnel cost usage under health sector on geo-political zone basis in 2020



Source: Author's Compilation (2023)

Figure 13 shows the performance of the efficiency of personnel cost funding among the DMUs in the health Sector for the three geo-political zones of the country for the year (2020). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Figure 14: Efficiency scores curves for personnel cost usage under education sector on geo-political zone basis in 2020



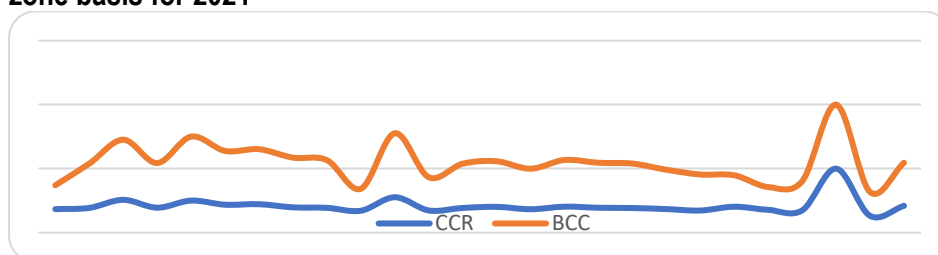
Source: Author's Compilation (2023)

Figure 14 represents the pattern of the efficiency of personnel cost funding among the DMUs in the Education Sector for the three geo-political zones of the country for the year (2020). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Figures 15 and 16 are the summary of the efficiency score curves for the entities in both education and health sectors in 2021. The mean efficiency level for both CCR and BCC Models were stated as 0.419 and 0.672 respectively. The sectoral average efficiency score is 0.672. In comparison with the overall average score,

therefore, it means that only 60% of the DMUs in the health sector scaled through above the sectoral average while the remaining 40% operated below the efficiency level. Also, under the education sector, only 40% of the DMUs operates above the sectoral average of 0.678 (BCC) while the remaining 60% were inefficient. During the year, the highest obtainable efficiency mean in the Southwest region was 0.501, which is below the benchmark. The North central zone recorded 100% while Eastern zone is 0.553. From the analysis, therefore, North central region has the highest mean value. Under the education sector, the behavior of the efficiency scores took a different pattern. The Southwest recorded 0.415 as the highest attainable efficiency score among the DMUs. Also, in the North central, the efficiency score generated for the DMUs was 0.424 while Eastern zone recorded 0.354 as the efficiency score attainable. The results of the analysis therefore rated the DMUs in the North central region as the best performers in personnel cost utilization during the year.

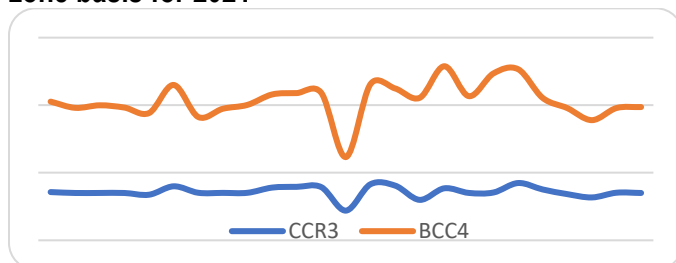
Figure 15: Efficiency scores curves for personnel cost usage under health sector on geo-political zone basis for 2021



Source: Author's Compilation (2023)

Figure 15 shows the trend of the efficiency of personnel cost usage among the DMUs in the health Sector for the three geo-political zones of the country for the year (2021). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Figure 16: Efficiency scores curves for personnel cost usage under education sector on geo-political zone basis for 2021

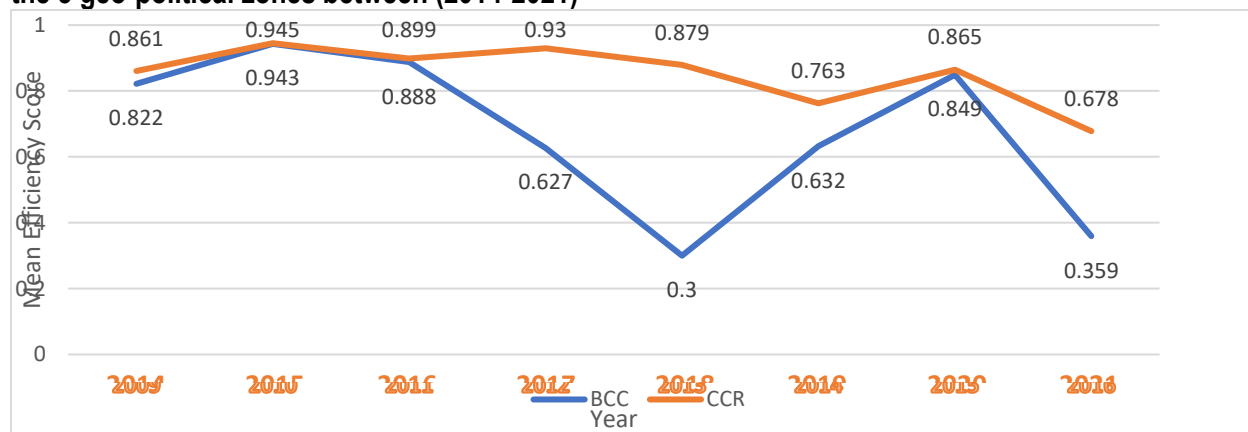


Source: Author's Compilation (2023)

Figure 16 presents the pattern of the efficiency of personnel cost utilization among the DMUs in the education Sector for the three geo-political zones of the country for the year (2021). Both CCR and BCC reveal that the DMUs could not fully utilize all the allocated personnel fund budgeted for the year

Fig 17 shows the mean efficiency scores analysis across DMUs in both Education and health sectors between 2014-2021. The behavior of the efficiency scores clearly revealed the irregular trend in the personnel cost utilization among the federal institutions across the geo-political zones in the country. The fluctuation in the efficiency level among these DMUs therefore indicates that while some DMUs were fully efficient in the personnel cost usage during the accounting year, many of them operated below the efficiency scores benchmarks. The fluctuation is most significant in the CCR approach. It is also noteworthy that there is a sharp plunge in the efficiency score in year 2021.

Figure 17: Mean Efficiency Scores Analysis Across DMUs in both Education and Health Sectors in the 3 geo-political zones between (2014-2021)



Source: Author's Computation (2023)

Fig 17 shows the average efficiency scores analysis among DMUs in both Education and health sectors between 2014-2021. The pattern of the mean efficiency scores in the geo-political zones clearly revealed the fluctuations in the personnel cost usage among the federal institutions.

5. Conclusion

The study assessed the behavior of personnel cost expenditure among education and health sectors in the three (3) geo-political zones in the country with the introduction of IPPIS in the public institutions. Both CCR and BCC models were used to analyze the data comparatively between the entities. The findings revealed that there were fluctuations in the personnel cost usage among the DMUs across the three geo-political zones. The spread of the efficiency scores among the institutions in the zones however skewed dominantly towards marginally and averagely inefficient DMUs across both sectors. The implication of inadequate efficiency score is that some of the federal educational and health institutions could not utilize fully the personnel cost allocations budgeted for the individual DMU without slack balances in their personnel cost accounts. The idle personnel cost balance is an indication of either inefficient personnel cost usage across the institutions or inability of the DMUs to properly channel the personnel cost allocations to the relevant

quarters or both. The results of personnel cost efficiency among the DMUs in the three (3) geo-political zones reveal three clear categorizations of inefficiency. The first category of inefficient DMUs fall within marginally inefficient zone where efficiency scores are above 70% but less than 100% efficiency frontiers. The institutions in this category only need marginal effort to reach full efficiency when total personnel cost allocations would be fully utilized as budgeted by the central authority. This category of DMUs can therefore achieve full efficiency of 100% or 1 either by increasing output within the organization or decreasing personnel input costs. Apart from the first categorization, the second group of DMUs with inefficiency scores is made up of DMUs that are averagely inefficient in personnel cost usage in the zones. The efficiency scores for the category of DMUs is greater than 0.65 but less than 0.70. They fall within the middle level performing DMUs (Agasisti & Pohl 2019). Extra effort is needed to push the DMUs in the category to full efficiency. Therefore, to sustain full efficiency frontiers and attain maximum scale of operation during the year in the group, the DMUs should manage both input output resources to reduce slack fund available. The last category is the distinctively inefficient DMUs. The efficiency scores range between 0.5-0.64. The DMUs are low-level performers. The common denominator of the DMUs is the inability to effectively utilize greater percentage of the appropriated personnel costs during the financial year (Salawu & Odewole, 2020, Lin & Zuo 2019). The top echelons of the distinctive DMUs are therefore expected to channel resources or double up efforts to boost the efficiency scores to reach full efficiency. It is therefore the collective and pragmatic attempts of the stakeholders, among both the education and health sectors in the geo-political zones, taken towards enthrone soundproof financial systems that the desired goals of achieving a full efficiency in personnel cost utilization across the geo-political zones can be realized with the introduction of IPPIS to the public institutions.

6. Recommendations

Nearly all the Decision- Making Units (DMUs) in both Education and Health sectors sustained slack fund in the utilization of the personnel cost allocations in the three geo-political zones covered by the study. The implication is that the DMUs were allocated budgeted sum far and above the necessary personnel cost payments needed for their employees. The idle fund therefore constitutes conduct pipes where scarce resources of the nation leaked away. Unless the unfortunate scenario is abated, the country will get to a point where prompt salary payment will be a mirage. Therefore, to prevent the trend of prenal personnel cost losses to the institution, the following recommendations are important:

One, there should be a realistic personnel cost budget prepared by each DMU based on the institutions' Nominal Roll and closely monitored by the parent ministry before submission to the Finance Ministry for funding.

Two, personnel cost releases to the DMUs should be on monthly basis instead of annual basis. This will enable the budget office to take into consideration all the existed staff and withdrawals/retirements during the budget year.

Three, budget office should set up a workable monitoring committee on personnel cost allocation and utilization by the DMUs with the mandate among others. to report on the monthly personnel cost utilization by the DMUs and apportion punishment for deviations.

Four, personnel cost allocation should be centrally controlled and monitored at the centre. Any decision-making unit with excess personnel cost allocations should be mandated to refund or face the wrath of the law.

It is when all these recommendations are adhered to an proper monitoring and control mechanisms are in place that effective personnel cost allocations to all the DMUs across the three geo-political zones will be a reality.

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AN ANALYSES OF THE TAX IMPLICATIONS OF INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) IMPLEMENTATION IN NIGERIA: EVALUATING THE POST-ADOPTION EFFECT AFTER NINE YEARS

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Abstract

In a bid to standardise financial reporting and enhance cross border comparison, Nigeria adopted a foreign standard (IFRS) in 2012. Emanating from this, this study sought to investigate how this affects tax treatment among banks by comparing tax and profit figures before and after the implementation. Five listed banks were purposively selected and used as sample and secondary data sourced from the respective financial reports. The time frame for the before implementation figures was from 2003 to 2011, while the after-implementation figures were from 2013 to 2021. Paired sample t-tests and simple mean comparisons were used in testing formulated hypotheses. Evidence revealed no significant difference in tax figures before and after the adoption of IFRS among Nigerian banks, IFRS adoption affects the income tax rate, and IFRS adoption has no effect on profitability. It is recommended that Nigerian government changes its tax regulations and rates to reflect the equivalent effect of IFRS implementation on tax rates.

Keywords: income tax, IFRS implementation, tax rate, profitability

1.0 Introduction

The globalization of business has opened opportunities for investors to invest their money anywhere in the world. To attract these investments, it is important that financial information for investment considerations is clear, comparable, and accurate. This was previously difficult due to the different accounting standards used in different countries. However, the adoption of IFRS in over 120 countries is said to be for the achievement of global comparability, reliability, and uniformity of financial statements' information (Iliemena, Egolum & Ijeoma, 2019; Oduware, 2012).

In 2010, the Nigerian Federal Executive Council accepted a recommendation for the adoption of IFRS in a phased transition. IFRS is based on the framework of the International Accounting Standards Board (IASB), with the objective of providing information, useful to various stakeholders. The IASB framework emphasizes that financial statements should be understandable, relevant, reliable, and comparable (Iliemena, Egolum & Ijeoma, 2019; Oyedele, 2011). This has also been achieved as reported by some extant studies which attests to the fact that investor's confidence has increased over time with IFRS implementation in Nigeria (Abate, 2015). This is however, debatable as the information needs of financial statements users amongst the various stakeholder groups and there is no common measure of satisfaction among the group and then owing to some unpleasant effects which might take some time to surface.



Recent corporate scandals and fraudulent activities in Nigeria caused more concerns and worries about financial credibility of local based reports (Iliemena & Okoye, 2019). To ensure proper accountability and transparency across sectors, it is necessary to follow credible and easily understandable standards for financial statements (Ocansey & Enahoro, 2014). The Companies Income Tax Act and the Financial Reporting Council of Nigeria (FRCN) Act have given added impetus to IFRS adoption, and the Federal Inland Revenue Service has issued guidelines for tax treatment in accordance with IFRS standards. As a result, IFRS financial statements cannot be used for filing tax returns, annual returns, and submissions to regulators such as the CBN (Oyedele, 2011).

According to Oduware (2012), using liability method for statement of financial position is a requirement under IFRS. This approach focuses on temporary differences, while the local Statement of Accounting Standards (SAS) adopts a more simplified income statement method which focused on timing differences. However, the use of the liability method can be complex and poses challenges for tax laws, which may require a re-examination of the foundations for using accounting for taxation purposes (Samuel, Samuel, & Obiamaka, 2013). While different methods of preparing accounts may comply with accounting standards, the tax implications of these choices can influence the decision-making process. Even though some studies have been carried out in line with the concepts of this study as revealed in our empirical reviews, a lot of these studies were found to be out of date (Ezeani & Oladele, 2012; Abata, 2015; Nengzih, 2015; Abedana, Omane-Antwi & Owiredu; 2016; Egbunike & Okoye, 2017). Some of the past studies on the other hand emanated from other countries (Nengzih, 2015; Abedana, Omane-Antwi & Owiredu; 2016) and finding may be different from what could be obtainable in Nigeria due to differences in tax policies and other enactments. However, it is notable that only a few of these studies conducted a pre-adoption and post adoption analyses in arriving at conclusions (Ibanichuka & Asukwo, 2018) which might have affected the results of the other studies directly or indirectly. To fill these gaps, this current study therefore, aims to investigate the tax implications of IFRS adoption in Nigerian banks, with specific objectives to:

1. Compare reported tax figures before and after IFRS adoption.
2. Determine the extent to which the adoption of IFRS affects income tax rate.
3. Investigate how IFRS adoption affects corporate profitability.

2.0 Literature Review

2.1 International Financial Reporting Standards (IFRS) and Taxation

The IFRS were developed by the International Accounting Standards Board (IASB) to create a unified approach to financial information reporting worldwide. The IFRS framework consists of four document types,

including Standing Interpretations Committee (SICs) pronouncements International Accounting Standards (IASs), International Financial Reporting Interpretations Committee (IFRICs) guidelines, and International Financial Reporting Standards (IFRSs). In Nigeria, publicly listed entities have been required to use IFRS for financial reporting since January 1st, 2012, following the approval of the Federal Executive Council (FEC) and the recommendations of the Committee on Roadmap to adoption IFRS. As of January 1st, 2014, small and medium-sized enterprises (SMEs) are also required to use IFRS for financial accounting and reporting (Oyedele, 2011).

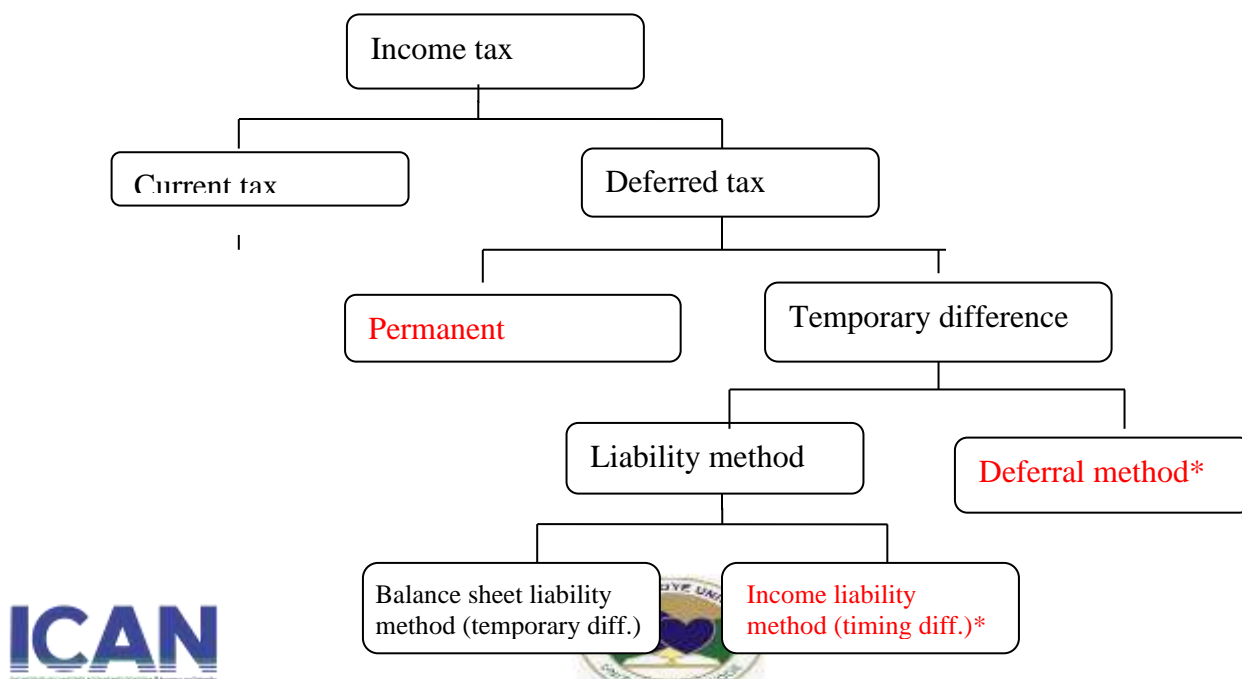
According to Adeboyejo (2013), income taxes encompass various taxes imposed on the profits or income of a business enterprise, including companies' income tax, petroleum profit tax, education tax, IT tax, deferred tax charges, and capital gains tax. The recognition of current tax for a period is expensed in the statement of income while it appears in the statement of financial position as a liability if it remains unpaid by the end of the reporting year, or an asset if it represents excess payment or a tax loss which is to be carried back to recover the amount of tax payable in the current period. The amount of tax payable in each period may not be directly related to the profit or loss reported in the account statement. This is because tax laws make it easy that taxable income can be computed based on rules different from what was used in preparing the account. As a result, a deferred tax provision is typically made in the accounts to ensure that the matching concept of financial accounting is followed in accounting for taxation (Oduware, 2012).

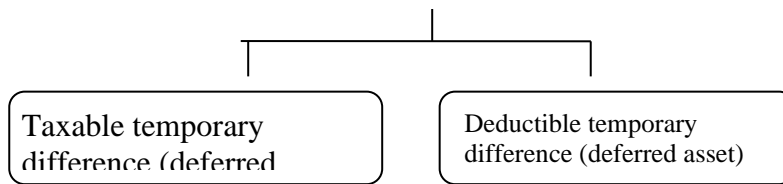
When adopting the IFRS for the first time, an entity is required to follow certain guidelines. They must recognize all assets and liabilities required by IFRS while items not permitted by IFRS should not be recognized. It is further required that items recognized previously under the Statement of Accounting Standards (SAS) be reclassified and comply with IFRS in measuring and recognizing assets and liabilities. However, the resulting net asset is not adopted for computation of minimum tax in the transition year. In addition, the taxpayer is may face additional tax charge whereby the amount of retained earnings increased due to the adoption and additional dividends were paid on the increment. The Federal Inland Revenue Service (FIRS) must be provided with details of recognitions, de-recognitions, and reconciliations, as well as all adjustments to opening retained earnings and conversion costs. These must be verified by FIRS before such capital or revenue expenditure are classified and allowed as qualified expenditure.

The Financial accounts for the purpose of filing tax returns must comply with IFRS and in line with the FRCN Act. Tax returns are required to comply with Section 55 of Companies' Income Tax Act (CITA) and include the following information on first time adoption and subsequently:

1. On first time adoption: for the purpose of tax computation, a first-time adopter of IFRS is required to submit a statement of financial position showing the retrospective application of accounting policy or restatement of financial statements items. This is expected to reflect the period from “the beginning of the earliest comparative period”. This is to be accompanied with a statement that compares tax impact of the adoption with the formerly used SAS which stands as GAAP and a statement which reconciles items from the previous SAS to IFRS. These are required to be submitted along with the computation of deferred tax. To this study, “the beginning of the earliest comparative period” could be interpreted as the opening financial information in the year of adoption or the closing financial information relating to the preceding year before the year of IFRS adoption. By way of example for better understanding, if the taxpayer adopts IFRS for the first time in 2012, at the end of 2012, the statement of financial position relating to the year-end 2011 and 2012 respectively showing the retrospective application of accounting policies and restatement of items in line with IFRS is to be submitted to FIRS for ease of comparability, along with other requirements already stated above.
2. Subsequently: After the year of first-time adoption of IFRS and onward, the taxpayer is required to submit a statement which details the adjustments to either income or total comprehensive income in arriving at the assessable profit for the year as have been chosen by the taxpayer. In addition, just as required on first time adoption, a document showing the computation of deferred tax for the year. This is necessary as it helps in recognition of the suitable tax which relates to the items disclosed in the annual accounts. When a taxpayer includes an expense or income in operating profit for the year and then includes same as taxable profit in another period, it gives rise to deferred tax in the form of asset or liability.

Fig. 1: Overview of Income Tax in relation to IFRS





Source: Adebeyejo (2013)

Key: items marked with asterisks (*) are those which are not permitted by IFRS.

Deferred tax liabilities and assets are accounting concepts that refer to the recognition of taxes in the statements of account. Deferred tax liabilities arise when the tax base of an asset or liability exceeds its carrying amount in the balance sheet, resulting in the recognition of an additional taxable amount in future periods. Conversely, deferred tax assets arise when the carrying amount of an asset or liability exceeds its tax base, resulting in the recognition of a deductible amount in future periods.

The tax base of an asset or liability is the amount which can be attributed to any asset or liability for tax the purpose of tax computation, while temporary differences refer to the difference between the carrying amounts of an asset or liability reported in the statement of financial position and the amount determined as its tax base. Temporary differences can either be taxable, resulting in deferred tax liabilities, or deductible, resulting in deferred tax assets. These variations arise due to the different accounting and tax treatments of certain transactions or events, such as the recognition of revenue or expenses, the use of different depreciation methods, and the recognition of tax losses.

2.2 Institutional Isomorphism Theory

According to DiMaggio and Powell's institutional isomorphism theory (1983), the decision of developing countries to adopt IFRS is highly controlled by factors surrounding institutional pressures, rather than economic factors. The theory identifies the different dimensions of this control to revolve around three basic factors; that is, the institution which the country belongs to in the global environment, e.g World Bank, and this theory recognises this as coercive isomorphism. It is usually coercive in nature whereby countries are mandated by certain regulations to adopt certain foreign standards irrespective of what effect it may have in their own territory. Some developing countries that have adopted IFRS today may have done that in a bid to comply with one of such regulations. Another level of this control is pressures from professional bodies or as required by the specific profession relating to the issue at hand. This is often viewed as normative isomorphism. The third level of influence on a country's decision to adopt foreign standards is the mimetic

isomorphism which applies when a country adopts such standard because another country which it perceives as “superior” has adopted such standard. Resulting from the perception or assumption of superiority of the other country, it is misjudged that the standard is beneficial only because the superior country has the standard in use. These clearly explain why a country like Nigeria would adopt IFRS without conducting sector-suitability tests and without parallel use of both IFRS and SAS *ab initio*.

The theory implies that the adoption of IFRS by a country is driven more by social and institutional factors than by economic considerations. This theory, which has earlier been adopted by Iliemena, Egolum, and Ijeoma (2019), is also found relevant in understanding the reasons and consequences of adopting imported accounting standards in a country.

2.3 Empirical Review

In a study by Idowu and Bello (2021), the effect of IFRS adoption on tax expenses in was explored using data from 74 companies in the Nigerian Stock Exchange from 2012. Paired-sample t-tests and ANOVA were used to test hypotheses, and it was found that IFRS and Nigerian GAAP had no significant effect on income tax expenses. Adegbbite (2020) investigated how IFRS adoption affects tax payable in Nigerian manufacturing companies from the period of 2012 to 2018; findings revealed that depreciation, non-current asset procurement and long-term debt all had negative impact on taxation while the effect on profit was found positive. Iliemena, Egolum, and Ijeoma (2019) analyzed the economic impact of IFRS adoption on Nigerian companies in agriculture and telecommunication sectors from 2005 to 2018. The test of the simple linear regression model showed no significant difference in reported EBIT, EVA, and economic profit in pre and post-IFRS transition periods. In a comparative analysis of the effect of the adoption on corporate performance, Ibanichuka and Asukwo (2018) studied 10 petroleum marketing companies on time series analyses and found that IFRS adoption had no significant impact on return on asset and return on equity but had a significant impact on earnings per share.

In a study by Egbunike and Okoye (2017), the tax implications of adopting IAS 12 for deposit money banks (DMBs) in Nigeria were evaluated. Using an ex-post facto design, secondary data were collected from 13 quoted DMBs. Mean comparisons and t-test statistical tools were used to test the hypotheses, and a significant difference was found to exist in tax figures and income tax rates of DMBs before and after IFRSs adoption, but no significant impact on extent of profitability was found. Abedana, Omame-Antwi, and Owiredu (2016) in Ghana, studied the varying effects of IFRS on income taxes, deferred tax, and net tax liabilities (assets). The study sample comprised of listed firms from 2007 to 2008 using both quantitative and cross-

sectional approaches. They found that IFRS/IAS adoption reduced the tax burden for companies listed on Ghana Exchange. However, the study is specific to Ghana and not applicable to Nigeria. Nengzih (2015) in a related study in Indonesia investigated the influence of IFRS adoption on the profit rates and tax income of listed firms. Evidence from this study revealed no change in reported profit before taxes resulting from the adoption while it was found that there was significant increase in mean profitability ratio of the firms after the adoption of IFRS. Abata (2015) analyzed how IFRS adoption affects corporate financial reporting using a sample of 14 Nigerian banks. The study specifically explored the differences in the reporting systems respectively under NGAAP and IAS/IFRS. The results revealed that there are significant differences in the reporting system of both standards. These differences could have direct effects on profitability and tax rates which further inform the essence of this present study. Ezeani and Oladele (2012) conducted a survey in Nigeria which evaluated the effect of IFRS on the financial reporting system of Nigerian universities. The sample for the study was 160 internal auditors and accountants. Evidence emanating from the study showed that there is no significant effect of IFRS adoption on the reporting system and recommends that the current public accountability system in Nigeria needs improvement before the effect of IFRS adoption can be significantly evident.

3.0 Materials and Methods

The study used an ex-post facto design and included a sample of Money Deposit Banks (commercial banks) listed on the Nigerian Exchange (NGX) Group. The banks included in the study were Access Bank Plc, Guaranty Trust Bank Plc, Fidelity Bank Plc, Zenith bank and UBA Plc, all of which had adopted IFRS by the time of this study in 2023. The data for the study were obtained from secondary sources, specifically the annual financial statements.

To analyze the data, the study used three different techniques. The Paired Samples T-Test was used to test hypotheses one and three, while a simple mean comparison was used for testing hypothesis two. The paired sample t-test was deemed appropriate as it is commonly used in "before-after" studies, matched pairs studies, or case-control studies. The below formula for the paired sample t-test was used to conduct the analysis.

$$t = \frac{\sum d}{\sqrt{\frac{n(\sum d^2) - (\sum d)^2}{n-1}}}$$

4.0 Analyses and Discussions

Table 1: Descriptives



	N	Minimum	Maximum	Mean	Std. Deviation
Profit Before Income Tax	9	-16261015	35177078	1838900.31	13025975.874
Profit Before Income Tax [IFRS]	9	-17964928	37634686	2351787.69	13593973.953
Income Tax	9	1331	6861517	1360462.46	2246026.983
Income Tax [IFRS]	9	201	7720982	1352820.38	2284281.468
Deferred Tax Assets	9	0	23384264	2655006.38	6530793.977
Deferred Tax Assets [IFRS]	9	0	23337475	2977766.62	6691406.848
Deferred Tax Liabilities	9	0	3474838	323161.54	962182.803
Deferred Tax Liabilities [IFRS]	9	0	3646484	302742.54	1006495.905
Valid N (listwise)	9				

Source: SPSS Ver. 22

The table data indicates that the mean Profit before Tax (PBT) under IFRS was higher than the mean PBT under NGAAP. Moreover, the average Income Tax (IT) under IFRS was lower than the average IT under NGAAP. Conversely, the average Deferred Tax Assets (DTA) under IFRS was greater than the average DTA under NGAAP, while the average Deferred Tax Liabilities (DTL) under IFRS was smaller than the average DTL under NGAAP.

Test of Hypotheses

Hypothesis one:

H₁: There is a significant difference between the reported tax figures before and after the adoption of IFRS among Nigerian banks.

Table 2: Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Income Tax	1360462.46	9	2246026.983	622935.804
Income Tax [IFRS]	1352820.38	9	2284281.468	633545.689

Source: SPSS Ver. 22

Table 3: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Income Tax	7642.077	406644.8	112783.0	-238090.9	253375.1	.068	12	.947

Source: Ver. 22

Table 2 presents the average income tax amounts for NGAAP and IFRS, with a sample size of 13 for each. The results show that the average income tax amount under NGAAP is 1360462.46, while the average income tax amount under IFRS is 1352820.38. Table 3 reveals that the average difference between the two figures is 7642.077. The statistical analysis shows a Sig. Value is more than .05 (t. 068, df. 12). Consequently, we accepted the null hypothesis of significant difference in tax figures before and after IFRS adoption.

Discussion:

The study objective 1 aimed to test the hypothesis that there is a significant difference in reported tax figures before and after the adoption of IFRS among Nigerian banks. The analysis revealed a slight difference in income tax figures reported under both accounting standards, with a mean difference of 7642.077 as shown in Table 3. The adoption of IFRS resulted in a higher income tax figure compared to the Nigerian GAAP standard.

Nengzih (2015) suggested that Fair Value Accounting (FVA) in various assets like intangible assets, non-current assets, accounts receivables, and the translation of transactions for overseas activities (both monetary and non-monetary) can affect a company's income tax amounts. Samuel, Samuel, and Obiamaka (2013) argued that using IFRS as a tax base brings tax accounting closer to a company's "real economic income." However, there are counterarguments that include the subjectivity of fair value accounting, difficulty in controlling it for tax purposes, taxation of unrealized income, which can affect a company's liquidity, complexity of the standards, and the great number of subjective judgments required leading to increased tax disputes.

Hypothesis two:

H₁: IFRS adoption affects the income tax rate of Nigerian banks.

Table 4: Report

	Income Tax	Income Tax [IFRS]	Deferred Tax Assets	Deferred Tax Assets [IFRS]	Deferred Tax Liab.	Deferred Tax Liab. [IFRS]
Mean	1360462.46	1352820.3	2655006.38	2977766.62	323161.54	302742.54
N	9	9	9	9	9	9
Std. Dev	2246026.983	2284281.5	6530794.0	6691406.9	962182.8	1006495.9

Source: SPSS Ver. 22

After analyzing the data, it was observed that the IFRS adoption had a minor effect on the income tax rate of Nigerian banks. The level of difference existing between the pre-income tax and post-income tax was calculated to be 7642.08, which is approximately 0.005% reduction in the carrying value of income tax. This finding aligns with the study conducted by Egbunike and Okoye (2017), who reported that IFRS adoption caused significant variations in tax figures and tax rates. The Nigerian government's decision to change the

Value Added Tax (VAT) rate shortly after IFRS adoption could also be attributed to this variation, although the impact on income tax appears to be more pronounced based on the financial statements. Similarly, Abedena, Omane-Antwasi, and Owiredu (2016) found that IFRS' implementation reduced the tax burden of companies in Ghana. Contrary to our outcome above, Idowu and Bello (2021) found no significant effect of IFRS adoption income tax expenses.

Hypothesis three:

H₁: IFRS adoption influences the profitability of Nigerian banks.

Table 5: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Profit Before Income Tax	1838900.31	9	13025975.874	3612755.687
	[IFRS]	2351787.69	9	13593973.953	3770290.010

Source: SPSS Ver. 22

Table 6: Paired Samples Test

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Diff.				
				Lower	Upper			
Pair 1 Profit Before Income Tax	-512887.4	1432691.9	397357.2	-1378654.4	352879.7	-1.291	12	.221

Source: SPSS Ver. 22

The analysis of Table 5 reveals that the average profit before tax reported under Nigerian GAAP is 1838900.31, while the average profit before tax reported under IFRS is 2351787.69, with a sample size of 13 each. The mean difference between the two figures is -512887.585, as illustrated in Table 6. The p-value is higher than the error term of .05 (t -1.291, df. 12), which leads us to accept the null hypothesis that the adoption of IFRS has no significant effect on the profitability of Nigerian banks.

Discussion:

In line with the result of our hypothesis test here, an earlier study by Nengzih (2015) also found no significant difference in Return on Assets (used to measure profitability), before and after IFRS adoption. In our study, the reported profit before tax showed no significant change before and after IFRS adoption. This could have resulted from tax-savings from the effect in tax rate as found in the previous test. Also, Adegbbite (2020) earlier reported that IFRS adoption reduced the tax payable of manufacturing companies. This is therefore in line with our findings as it is expected that decrease in tax expense will lead to increase in reported profit. In support of this, Barth, Landsman, and Lang (2007; 2008) opine that eliminating alternative accounting

methods will improve accounting quality and reduce the chances of managers to manipulate earnings through window dressing. Their Comparative study analyzed the extent of window dressing amongst firms that voluntarily adopted IFRS and firms that used GAAP further revealed that IFRS firms had higher level of changes in cash flows, net income, and lower frequency of having small net income.

5.0 Conclusion and Recommendations

In this study, the post adoption effect of IFRS on tax was evaluated by comparing data before and after its implementation. The results lead the researchers to conclude that IFRS adoption has no effect on profitability and tax figures but only affected tax rates within its first 9years of implementation. Based on this, the following recommendations are proposed for policymakers and regulators:

1. It is recommended that Nigerian government changes its tax regulations and rates to reflect the equivalent effect of IFRS implementation on tax rates.
2. Standards setters and users are encouraged to consider the tax consequences of implementing a particular standard, especially since tax laws vary across countries.
3. National professional organizations, such as ICAN and ANAN, should provide training and retraining on the application of these standards to keep members informed on recent developments. Additionally, educational institutions should integrate this topic into their curriculum to ensure that students have a proper understanding of the requirements and the post implementation effects. Policymakers and regulators should encourage companies that have adopt IFRS to provide more education and information to their investors during annual general meetings (AGM), regarding the impact of these standards on financial reporting quality, rather than just focusing on their application.

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IMPACT OF CAPITAL MARKET ON ECONOMIC GROWTH IN NIGERIA (1990-2019)

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Abstract

This research is designed to investigate the Impact of the Capital Market Operations on Economic Growth in Nigeria. Data for the study were drawn from the Central Bank of Nigeria Statistical Bulletin (2019). Ordinary least squares method of multiple regressions was applied. The research discovered that capital market enhances growth of the Nigerian economy. It was recommended to improve the growth of Nigerian economy; the government should encourage more trading activities in the Capital Market. Secondly, Government at all levels should be encouraged to meet their developmental programmes and needs through active participation in Nigerian capital market. Finally, there is also an urgent need for the Nigerian capital market to broaden their investment potential, from basically equity and bonds into derivatives and other investment opportunities, to strengthen the breadth and depth of the market.

Keywords: Impact, Capital, Market, Nigerian, Economy

1.0 Introduction

Capital is a key determinant of the level of investment in an economy. Hence, without capital, personal, corporate, and fiscal plans cannot be converted into realities. In a developing country, capital is usually identified as a bane of investment, economic growth, and development (Jombo, 2005). Hence, the need for adequate capital cannot be over-stressed. According to Nzotta (2004), capital is required to stimulate growth, enhance output and real growth in the economy. Jombo (2003), noted that the activities of capital market started in Nigeria when the first government securities were issued in 1946, though there were no institutional facilities available as at that time for the operation of the capital market in Nigeria. Before the capital market came into existence, money market institutions provide short-term loans to businesses. Money market provides short-term funds to individuals, firms, and government. He further disclosed that because of the absence of institutional facilities for efficient operation of the capital market, Nigerians who had surplus funds had no optimal investment arena; hence, they took their funds overseas for investment purposes.

Nwankwo (1980) noted that as a follow-up to the Barback report of 1958, the Lagos stock Exchange was established on September 15, 1960, as a company limited by guarantee with a head office in Lagos and an authorized capital of ₦10, 000. They noted that it was given a legal backing by the Lagos Stock Exchange



Act of 1961. According to Osuala (2009), it started operation in Lagos on June 5, 1961, with nineteen (19) securities listed for trading and few other market instruments. It started with minimal number of operators while turnover and value were both at low ebb. Today, the market supports remote operations. The Exchange has experienced various reforms.

It is pertinent therefore to find out the extent to which capital market has been providing long-term funds for investment purposes to investors through its operations and how its affect growth in Nigeria.

Capital has been identified as a major problem of investment in most developing economies including Nigeria (Nzotta, 2004). It is a situation where an intended economic decision is totally or partially abandoned because of inadequate capital or dearth of capital by economic agents (Anyanwu, 1993). Hence, the need for adequate capital cannot be over-stressed. Households require capital to meet their household needs, firms require capital to meet their corporate needs, and governments require capital to meet their public needs to the citizens. This scenario creates a situation where there is a struggle for funds by economic units (financial struggle).

Before March 2008, the capital market in Nigeria experienced a prolonged period of increased activities but shortly after that, the market experienced a near collapse that was not easily recovered (SEC, 2009).

Consequently, companies in different sectors were attracted to the capital market to raise funds for their operations. It is important to know that within that period (before March 2008) the Nigerian capital market added immensely to the economic growth and development of the Nigerian economy. The need to increase economic growth in Nigeria has widely been expressed; this is because of the population hike. Nigerian suffers from population explosion with a current population more than 170million (2013) from about 150million in the last census (2005) meaning a growth rate of more than 2% per annum (or a doubling time of about 30 years). CIA World Facts Book quoted Nigerian population as 162,471,000 (July 2011) and 170,123,740 (July 2012). Nigeria's population is estimated to be about 200million in 2023. According to United States Census Bureau, Nigerian population is projected to be around 402 million by 2050, likely to make Nigeria the fourth most populous country in the world then. Therefore, there exists a need to grow the Nigerian economy to meet the fast-growing population.

There exist presently some gaps, which will be adequately addressed by the study on the impact of Capital Market Operations on Economic Growth in Nigeria. Market capitalization of Nigerian Capital market is the summation of operations from government stock, debt instruments, exchange trust Fund and ordinary shares (equities) traded. There exists an urgent need to determine the implications of Capital Market Operations on

Economic Growth in Nigerian economy. The central objective behind this research is to establish the effect of Government Stock, Debt instruments and Values of Equity on the growth of the Nigerian economy.

2.0 Literature Review

Considerable body of literature exists in the broad field of capital market and economic growth. This chapter is treated to several reviews of conceptual framework and empirical literature. First is the conceptual framework. Secondly, theoretical framework is provided and thirdly, a brief empirical review on the research topic. The chapter concludes with summary of review of related literature and other issues relating to the Nigerian capital market.

2.1 Conceptual Framework on Capital Market Operations and Economic Growth

The capital market is a market for long term funds or instruments. The capital market deals with long-term financial instruments or securities. Therefore, it constitutes a platform for mobilizing long-term capital resources from lenders (surplus economic units) and allocating them to their areas of greatest need (deficit economic units).

Economic growth means an increase in the value of goods and services produced in a country over a period, usually for one year. The capital market seems to influence economic growth through its funds mobilization that would result in savings. Savings, on the other hand result in capital accumulations, which have direct bearing on economic growth and development. It is on this note that this research is undertaken.

2.2 Theoretical Framework

Several schools of thought offer theoretical explanations for the activities of capital market and economic growth. These include the fundamentalist school, the technical school, the random walk hypothesis school, and others (Maku & Atanda, 2009). Accordingly, the fundamental approach, every security has an intrinsic value, the intrinsic value of every security is reflected by the market price, and basic economic factors about the firm determine the intrinsic value of securities. The technical school, on the other hand, argues that stock prices tend to be affected by demand and supply forces (invisible forces). The random-walk hypothesis believes that stock prices respond to the effect of new information in the market. Consequently, the macroeconomic approach argues that stock prices are sensitive to changes in macroeconomic variables. On

the other hand, theories of economic growth include the neoclassical growth model, Salter cycle and Schumpeterian innovative growth theory. This research is anchored on the above theories.

2.3 Review of Related Literature

Review of related literature on the impact of the capital market performance on economic growth.

The Nigerian capital market was established to mobilize financial resources for investment and developmental purposes. According to Adewale (1998), Ariyo and Adelegan (2005), Ewah, et al (2009), Obiora (2012), and Olawoye (2011), Capital market impacts positively on economic growth in Nigeria. The primary relevance of capital market is that of mobilization and channelization of medium and long-term funds into the economy for investment purposes. Therefore, it is of prime significance to any country that desires economic growth and development. Anyanwu, (1993), highlighted the following contributions of capital market to economic growth in Nigeria: Capital Formation, allocation efficiency, development of Investment Climate, Debt management, the growth of small business, liquidity of investments, investors' Protection, parameter for measuring aggregate economic performance, employment opportunities generation and increasing gross domestic product (Economic Growth).

On the contrary, Gabriel (2002) in Nyong (2003), laid emphasis on the capital market in Romania and concluded that the market is inefficient and hence it has not contributed to economic growth in Romania. Also, Adam and Sanni (2005), in a related study applied and analysed their data using both the Granger-Causality test and regression analysis. Eventually, their study established a one-way causality between GDP growth and market capitalization. They also noticed a two-way causality between GDP growth and market turnover. The study also observed a positive and significant relationship between GDP growth turnover ratios. Judging from the reviewed literature, though the Nigerian capital market is still at developing stage, it has consistently added to the economic growth of Nigeria.

3.0 Research Methodology

3.1 Research Design

This research work will employ expose facto research design. The expose facto will be applied using descriptive and analytical approach. The descriptive approach is necessary to give theoretical explanation while the analytical approach is aimed at revealing facts and figures to support these theoretical postulations. The analytical approach is specially chosen to enable the study to evaluate the relationships existing among variables of interest in the study.

3.2 Sources of Data



Various sources of data have been used in this research work. Dominating in the study is secondary source of information. Among which are information sourced from Securities and Exchange Commission (SEC) report on Nigerian Stock Exchange, Central Bank of Nigeria (CBN) Statistical Bulletin.

3.3 Techniques of Data Estimation

The OLS method and E-view statistical package were used for the analysis. The Eview statistical package was used to test ordinary least squares regression test analysis.

3.4 Model Specification

To achieve the objectives of this research, the following models are formulated for our tests and analysis:

1. Model 1:

$$GDP = f(GSNCM, DINCM, VENCM) \dots \dots \dots (1)$$

$$GDP = b_0 + b_1 GSNCM + b_2 DINCM + b_3 VENCM + U \dots \dots \dots (2)$$

Where: GDP = Gross domestic product (GDP). It is the total value of goods and services produced within the country during a year; GSNCM = Government Stock traded in Nigerian Capital Market. It is the measure of Total Value of Government Stock traded in the Nigerian Capital market; DINCM = Debt Instruments traded in Nigerian Capital Market. It is the measure of Total Value of Debt Instruments traded in the Nigerian Capital market; VENCM = Value of Equity traded in Nigerian Capital Market. It is the measure of Total Value of Equities traded in the Nigerian Capital market; b_0 = Constant or intercept of the equation; b_1, b_2, b_3 = Slopes of the equation; The apriori expectation is $b_1, b_2, b_3 > 0$ and U = Stochastic (error) Term.

4.0 Data Presentation and Analysis

The data were collected in line with the stated objectives of the study as shown in chapter one. Data are presented in tabular format. This is necessary to allow easy presentation and understanding. Three (3) tabular presentations of data are involved in this chapter. The discussion of data for each table was done before the tabular presentation as displayed below: Table 4.1 shows the components of the total market capitalization in the Nigerian capital market. Between 1981 and 1987, government stocks were dominating the market, followed by equity capital and debt securities. However, between 1988 and 2020, equities became a dominating capital source in the market followed by government stocks. It is clear from the table that the debt securities have not fully been traded in the market by the values shown from the inception of the market to date.

Table 4.1: The composition of market capitalization in the Nigerian capital market showing the value of government stocks, debt securities, equity, Exchange Trust Fund, and total market capitalization.

Year	Government stocks/ securities (₦ Billion)	Debt securities/ bond in the Nigerian (₦ Billion)	Equities/ ordinary shares in Nigerian capital market (₦ Billion)	Exchange Trust Fund (ETF) (₦ Billion)	Total market capitalization (₦ Billion)
1990	3.40	0.80	12.10		16.30
1991	3.30	1.40	18.40		23.10
1992	3.20	1.80	26.20		31.20
1993	3.60	2.10	41.80		47.50
1994	3.20	2.10	61.00		66.30
1995	3.20	2.10	175.10		180.40
1996	3.00	3.00	279.80		285.80
1997	2.80	2.80	276.30		281.90
1998	2.70	3.10	256.80		262.60
1999	2.40	3.10	294.50		300.00
2000	2.10	4.10	466.10		472.30
2001	8.30	5.80	648.40		662.50
2002	12.70	3.50	748.70		764.90
2003	25.20	8.40	1,325.70		1,359.30
2004	178.10	7.90	1,926.50		2,112.50
2005	365.47	9.83	2,523.50		2,900.06
2006	902.99	3.49	4,227.13		5,120.90
2007	2,976.58	16.98	10,180.29		13,181.69
2008	2,558.96	16.41	6,957.45		9,562.97
2009	2,030.76	10.05	4,989.39		7,030.84
2010	1,939.27	56.37	7,913.75		9,918.21
2011	2,400.47	1,341.29	6,532.58	0.99	10,275.34
2012	4,425.05	1,400.43	8,974.45	1.01	14,800.94
2013	4,456.90	1,394.00	13,226.00	0.28	19,077.42
2014	5,247.96	144.96	11,477.66	4.52	16,875.10
2015	6,942.87	205.89	9,850.61	4.02	17,003.39
2016	6,652.03	281.97	9,246.92	4.80	16,185.73
2017	7,236.23	276.50	13,609.47	6.69	21,128.90
2018	9,920.63	256.56	11,720.72	6.13	21,904.04
2019	12,559.23	355.82	12,968.59	6.58	25,890.22

Source: Central Bank of Nigeria (2019).

Please note that the Exchange Trust Fund (ETF) is an investment instrument introduced in 2011. Our focus is on the three main (primary) components of Market Capitalization, which include the value of government stocks, debt securities and equity.

Table 4.2: Capital Market Performance and Economic Growth (Gross Domestic Product) in Nigeria.

	Gross domestic product at current	Government Stock traded in Nigerian	Debt Instruments traded in Nigerian	Value of Equity traded in Nigerian
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Year	basic prices (GDP) N Billion	Capital Market N Billion	Capital Market N Billion	Capital Market N Billion
1990	499.68	3.4	0.8	12.1
1991	596.04	3.3	1.4	18.4
1992	909.8	3.2	1.8	26.2
1993	1259.07	3.6	2.1	41.8
1994	1762.81	3.2	2.1	61
1995	2895.2	3.2	2.1	175.1
1996	3779.13	3	3	279.8
1997	4111.64	2.8	2.8	276.3
1998	4588.99	2.7	3.1	256.8
1999	5307.36	2.4	3.1	294.5
2000	6897.48	2.1	4.1	466.1
2001	8134.14	8.3	5.8	648.4
2002	11332.25	12.7	3.5	748.7
2003	13301.56	25.2	8.4	1,325.70
2004	17321.3	178.1	7.9	1,926.50
2005	22269.98	365.47	9.83	2,523.50
2006	28662.47	902.99	3.49	4,227.13
2007	32995.38	2,976.58	16.98	10,180.29
2008	39157.88	2,558.96	16.41	6,957.45
2009	44285.56	2,030.76	10.05	4,989.39
2010	54612.26	1,939.27	56.37	7,913.75
2011	62980.4	2,400.47	1,341.29	6,532.58
2012	71713.94	4,425.05	1,400.43	8,974.45
2013	80092.56	4,456.90	1,394.00	13,226.00
2014	89043.62	5,247.96	144.96	11,477.66
2015	94144.96	6,942.87	205.89	9,850.61
2016	101489.49	6,652.03	281.97	9,246.92
2017	113711.63	7,236.23	276.5	13,609.47
2018	127736.83	9,920.63	256.56	11,720.72
2019	144210.49	12,559.23	355.82	12,968.59

Source: Central Bank of Nigeria (2019).

4.2 Results and Discussions of Findings

4.2.3: Summary of regression Results on the Impact of Capital Market Operations on Economic Growth in Nigeria

Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GSNCM	8.947634	0.946272	9.455672	0.0000
DINCM	6.641522	4.246862	1.563866	0.1299
VENCM	2.536862	0.699955	3.624322	0.0012
C	53.13514	2060.106	2.579243	0.0159
R-squared	0.970391			
Adjusted R-squared	0.966974			
Durbin-Watson stat	1.376368			
F-statistic	284.0356			
Prob(F-statistic)	0.000000			

Source: Author's computation 2019.

Transforming the model, we have:

$$GDP = b_0 + b_1 GSNCM + b_2 DINCM + b_3 VENCM + U \dots \dots (2)$$

$$GDP = 53.13514 + 8.947634GSNCM + 6.641522DINCM + 2.536862VENCM + U \dots (3)$$

The regression results as shown above revealed that Government Stock traded in Nigerian Capital Market (GSNCM) was statistically significant and positive at 5%, Value of Equity traded in the Nigerian Capital Market (VENCM) is statistically significant and positive at 15% while Debt Instruments traded in Nigerian Capital Market (DINCM) was not statistically significant at 5% and 15%, respectively but showed a positive coefficient. Therefore, constant co-efficient of 53.13514 means 53.13% of the change in Gross Domestic Product (GDP) was recorded irrespective of the changes in the independent variables (GSNCM, DINCM, and VENCM). GSNCM co-efficient of 8.947634 means 100% change in GSNCM, changes GDP by 8.95%, DINCM co-efficient of 6.641522 means that 100% change in DINCM, changes GDP by 6.64%. VENCM co-efficient of 2.536862 means that 100% increase in VENCM in, GDP increased by 2.53%, keeping every other factor constant. The model shows a reasonable level of good-fit; variables were properly selected. R² (co-efficient of multiple determinations) of 0.970391 means 97.04% of total variation in the dependent variable (GDP) is explained by the independent variables (GSNCM, DINCM, and VENCM) and it stood at 96.69% after adjusting for degrees of freedom. DW (Durbin-Watson) statistic of 1.376368 shows that there is a linear relationship between GDP and the independent variables (GSNCM, DINCM, and VENCM). The t-values for GSNCM and VENCM showed that the independent variables significantly affect the dependent variable

(GDP). Since the value of F-calculated is larger than the critical value of F or Table value of F, we reject the null hypothesis and then accept the alternative hypothesis; therefore, Nigerian capital market operations have positive and significant effect on the growth of Nigerian economy.

5.0 Summary of Findings

The research examined the impact of Capital Market Operations on Economic Growth in Nigeria (1990-2019). The regression results revealed that Government Stock traded in Nigerian Capital Market (GSNCM) was statistically significant and positive in relation to economic growth in Nigeria, Value of Equity traded in the Nigerian Capital Market (VENCM) is statistically significant and positive in relation to economic growth in Nigeria while Debt Instruments traded in Nigerian Capital Market (DINCM) was not statistically significant at the acceptable level but showed a positive coefficient in relation to economic growth in Nigeria. Therefore, the findings of the research revealed and confirmed that there exist positive and significant relationships between the capital market operations and economic growth in Nigeria.

The following policy recommendations are necessary as established in our study thus: To improve the growth of Nigerian economy, the government should encourage more trading activities in the Capital Market. Secondly, Government at all levels should be encouraged to meet their realistic developmental programmes and needs through participation in Nigerian capital market. Finally, there is also an urgent need for the Nigerian capital market to broaden their investment potential, from basically equity, government/development stock and bonds into derivatives, convertibles, future swaps, and options to strengthen the breadth and depth of the market.

6. Conclusion

The study has revealed that capital market operations have positive and significant effects on economic growth. This relates to the fact that capital market provides an opportunity for funds mobilization. Hence, the capital market remained one of the mainstays in the economy that has power to influence economic growth through private and public sector participation in the market.

The impact of capital market on economic growth can be strengthened since the market is yet to compete with some of her counterparts in Africa like South African and Egyptian Stock Exchanges and other global exchanges. In conclusion, Capital Market Operations have significant and positive effects on Economic Growth in Nigeria. It is necessary to note that more capital market operations will result in higher level of economic growth in Nigeria.

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CREDIT TYPES AND LOAN DEFAULT: EVIDENCE FROM QUOTED DEPOSIT MONEY BANKS (DMBs) IN NIGERIA

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Abstract

The Nigeria banking industry has consistently witnessed continuous deterioration in non-performing loans despite the unprecedented transformation that ushered in the banking reform and consolidation in 2005. This is buttressed by the CBN Monetary Policy Committee report that Nigeria banks NPL stood at N1.2 trillion by June 2021. The Nigerian Deposit Money Banks (DMBs) are the focus of this study's examination of credit categories and loan default. The goals of the study were to ascertain the association between commercial bank non-performing loans in Nigeria and agricultural loans, real estate loans, project financing, and commercial agricultural credit programs. The study used an ex-post facto research approach using secondary data from selected DMBs' audited finances and annual reports. Thirty-three (33) banks listed on the Nigeria Exchange Group made up the study's population, and five (5) banks were chosen at random using the CAMEL rating. The data were analyzed using regression analysis and spearman/ rank order covariance analysis. The study discovered that agricultural loans (p-value 0.4225 & t-statistics 0.8090504) and commercial agricultural credit scheme (p-value 0.7285 & t-statistics 0.349174) have positive and weak relationships with NPL. Real estate loans (p-value 0.7018 & t-statistics -0.385254) have a negative and weak relationship with NPL. However, project finance has been identified as the only variable that can predict NPL as it has a strong and positive relationship with NPL with a p-value of 0.0270 and t-statistics of 2.281323. The policy implication is that while credit types contribute to defaults in loan repayments, there are other factors that immensely affect loan performance in banks. It is recommended that banks adequately secure their loans, follow due process flow in granting credits, especially with project finance, which is more vulnerable, and give more consideration to real estate loans with fewer risks.

Key Words: Agricultural loans, non-Performing loans, Project Finance, Real estate loans

1. Introduction

The banking industry's role is very crucial to the growth and development of the economy of every nation through its intermediation function of mobilisation of deposits from the surplus sector of the economy to the deficit sector in the most profitable manner. Commercial banks' major role is to affordable financial services to the citizenry and businesses. Through also these services, they guarantee the economic and social steadiness and unceasing extension of the economy. It has been universally agreed that no nation can incident continuous enlargement and expansion in the absence of an impressive financial system. Banks' activities in a nation lubricate the economic system as they act as custodians of the payment system. The advancing of credit by Deposit Money Banks (DMBs) is the major income stream from the payment of interest

by the borrowers. Despite being the main sources of income for DMBs, credits continue to be a matter influencing the performance of DMBs and are considered the riskiest assets of banks due to their volatility. In line with the Basel Committee on Banking Supervision (2001), the chances of partially or wholly losing a large amount of loan due to credit default make credit financing volatile. Prior to the establishment of CBN in 1958, granting of loans and advances was not properly regulated and supervised, leading to an increase in NPL and bank distress. After that, the banking system became stable under the supervision of CBN, until 1986 when pressure from the International Monetary Fund (IMF) and World Bank forced the President Babangida administration to launch the Structural Adjustment Programme (SAP), with the primary objective of deregulation of the economy. The deregulation of the financial system ushered in the era of the banking boom in Nigeria due to the liberalisation of the bank licensing process and the consequent competition in the banking industry. The upsurge in the number of banks to be supervised by CBN was so overwhelming that in 1988 the Federal Government created Nigerian Deposit Insurance Corporation (NDIC) with a supervisory power to complement the supervisory efforts of CBN. Besides government efforts in stabilizing the banking industry, distress in the system continued unabated. NPL which is the main cankerworm ravaging the system rose higher and came to its climax in 1998 with the liquidation of 31 commercial/merchant banks in one fell swoop and 6 banks were closed between 2000 and 2003 NDIC (2003).

With the appointment of Prof Charles Chukwuma Soludo in 2004 as CBN governor, the banking system witnessed an unprecedented transformation. The banking sector reform and consolidations in 2005 restored confidence in Nigeria's banking system as banks became bigger and stronger with excellent performances. Three major elements of this reform nicknamed Soludo Solution were the increase of banks' Capital Base from ₦2 Billion to ₦25 Billion, the review of CBN Prudential Guidelines to synchronize the prudential guidelines with the IFRS 9 - Financial Instrument and the creation of the Asset Management Corporation of Nigeria (AMCON). Though the reform reduced the number of commercial banks from 89 to 25 through mergers and acquisitions, it facilitated economic growth and development. However, this stability came to an abrupt cease between 2007 and 2009 when the world experienced a global financial meltdown that wretched the economic stability of nations including Nigeria, with global bank distresses and failures. Despite the efforts of the apex bank- the Central Bank of Nigeria to ameliorate the rising trend of non-performing loan profile in the DMBs in Nigeria, through the review of the established Prudential Guideline and the creation of the Asset Management Company of Nigeria (AMCON), more loans and advances deteriorate into bad debts. The AMCON was created in 2010, with a lifespan of ten (10) to specifically resuscitate the Nigerian financial system by recovering non-performing loans and injecting liquidity into the industry. This objective has not

been wholly achieved as, even though bank distress is greatly reduced, there is still an increasing trend in non-performing loans and if not checkmated, Nigeria might witness another round of bank distress. As at the third quarter of 2020, a whopping sum of ₦1.1 trillion was classified as non-performing loans, representing, 6.1% NPL ratio above the 5% CBN threshold and has increased to ₦1.2 trillion by June 2021 (Emefiele, 2021). Sequel to the above, the researchers studied the various types of credit facilities and the default in loan repayment of Deposit Money Bank in Nigeria from 2011 to 2020. From the ongoing empirical review much work has been done on the relationship between agricultural, real estate, project finance in oil and gas and mining, and non-performing loan on individual basis by Azubugwu and Osuafor (2019) Maloba and Alhassan (2019), Nwuba and Chukwuma-Nwuba (2018), Saif-Alyousfi, Saha and Mdrus (2018). However, none of the reviews included the variable-Commercial Agricultural Credit Scheme holistically with other credit types- Agricultural Loans, Real Estate Loans and Project, in ascertaining their relationship with non-performing loans in the banking industry.

1.1 Objective of the Study

The broad objective of the study is to evaluate credit types and default in loan repayment of deposit money banks in Nigeria. The specific objectives are to:

- a) examine the relationship between Agricultural Loans and Non-performing loan of deposit money banks in Nigeria.
- b) analyze the relationship between Real Estate Loans and Non-performing loans of deposit money banks in Nigeria.
- c) appraise the relationship between the Commercial Agricultural Credit Scheme (CBN Special Credit Intervention Fund) and Non-performing loans of deposit money banks in Nigeria.
- d) explore the relationship between Project finance and non-performing loan of deposit money banks in Nigeria.

1.2 Statement of Hypotheses

The following null hypotheses are formulated for the study:

- a) There is no strong relationship between Agricultural Loans and Non-performing loans of deposit money banks in Nigeria.
- b) Real Estate Loans and Non-performing loans do not have any strong relationship in Nigerian deposit money bank.

- c) There exists no strong relationship between the Commercial Agricultural Credit Scheme (CBN Special Credit Intervention Fund) and Non-performing loan of deposit money banks in Nigeria.
- d) Project finance and non-performing loan of deposit money banks in Nigeria do not share a strong relationship.

2. Literature Review

2.1 Conceptual Review

Credit and Credit Types

Credit is the idea that enables one party to lend money or resources to another party, with the expectation that the second party would either repay the first party later or return the resources. According to Tetteh (2012), effective credit-giving is one of the most important concepts that improves the financial status of financial organizations. Nerdwallet (2022) defined credit as the ability to borrow money with the promise that you will repay it in future, often with interest. It is an arrangement that allows one to borrow money now and repay it later.

(a) Agricultural Loans

These are loans which banks extend to farmers to fund both seasonal and perennial agricultural activities. The loans are used to finance occupations like animal farming, pisco-cultural or procurement of land and agricultural tools. Also, the purchase of farm inputs like fertilizers, seeds, and insecticides.

(b) Real Estate Loans

A real estate loan is a housing loan financing deal between a borrower or special subsidiary and an unaffiliated third-party lender in which the lender offers real estate financing that is exclusively backed by a mortgage lien on the company's headquarters and other relevant fixtures (Law Insider, 2021).

(c) Commercial Agricultural Credit Scheme (CACCS)

The Commercial Agricultural Credit Scheme was established in 2009 by the CBN in coordination with the Federal Ministry of Agriculture and Rural Development (FMARD), which is the representative of the Federal Government of Nigeria. The primary objective is for the promotion of large-scale agricultural enterprise in Nigeria, a constituent of the Commercial Agriculture Development Programme (CADP) through the provision of finances for the value chain of Nigerians agricultural sector (production, processing, storage, and marketing).

(d) Project Finance

Banks extend project finance to investors to enable them to fund long-term projects like public infrastructure, industrial projects, and others through a specific financial structure, (Sweta, 2021). It is a type of loan structure that primarily relies on expected cash flow accruing from the projects to be financed for repayment of both the principal and interest.

Non-Performing Loans (NPLs)

The International Monetary Fund (IMF) 2018 defined NPL loans whose:

- 1) Debtors have not paid interest and/or principal payment in at least 90 days or more.
- 2) Interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement.
- 3) the payment has been delayed by less than 90 days but came with high uncertainty that the debtor will make payments in future.

Furthermore, it was advised in the IMF Financial Soundness Indicators Compilation Guide (2016) that loans should be labeled as non-performing when principal as well as interest payments are three months or more past due or when interest payments corresponding to three months' worth of interest or more have been capitalized or rolled over. The CBN Prudential guideline classifies NPL as Substandard for payments overdue for 90 days and above, Doubtful for payments overdue for between 180 -360 days and lost for overdue above 360 days. The CBN prudential guideline also mandated banks to make provisions accordingly for the categorized NPLs. (Appendix A-Classification of NPL in line with CBN Prudential Guideline)

2.2 Theoretical Framework

This study was anchored on the under-listed theories namely, financial intermediation and fractional reserve theories.

Financial Intermediation Theory

It was propounded by Gurley and Shaw in 1960. The two basic assumptions are transaction costs and asymmetric information. It was built on the belief that intermediaries help to lessen transaction costs and information asymmetries. Gurley and Shaw (1960) argued that the function of financial intermediation is being shared between the banks and non-financial institutions, pointing out that there is nothing special about banks. The Financial Intermediation theory of banking says that banks are not different from other non-banking financial institutions as they are mainly financial intermediaries carrying out the primary functions of

gathering money and lending them out – Werner (2014). Harrod (1939) and Domar (1947) support this theory by emphasising the view of saving to enhance investment. Mises (1980) expressed an opinion in support of this theory acknowledging banks as negotiators of credit between lenders and borrowers. The antagonists of this theory, namely Macleod (1906) and Moore (1988) described the process of bank lending as mainly crediting the customer's account with the loan amount granted.

The study was anchored on this theory because banks mobilize deposits from the surplus unit of the economy and lend to the deficit units.

The Fractional Reserve Theory

The Fractional Reserve Theory was propounded by Alfred Marshall in 1888. The Fractional Reserve Theory of Banking has a different opinion from the Financial Intermediation Theory of Banking pertaining to the corporate macroeconomics roles of banks. The basis of the disagreement is that individually, a bank is a financial intermediary, but collectively, money is created by the banks by a process called multiple deposit expansion. This was supported by Philip (1920) who opined that what is true about banks as an aggregate is not true individually. Keynes (1930), in support of the theory, adopted the concept of money creation of deposits. However, Werner (2005) in criticising the theory, stated that banks in creating credits do not withdraw money from other customers' accounts to deposits in the borrower's account, but simply process paper documentation to write figures into customers' accounts.

2.3 Empirical Review

Agricultural Loans and Non-Performing Loans (NPL)

Aniefiok, Akpan, and Udoh (2016) examined the Relationship between Agricultural Lending, From 1980 to 2015, agricultural expansion and non-performing loans in Nigeria's banking system. The Granger Causality test, Pearson Correlation and Cointegration, as well as error correction models, were used to examine time series data obtained from CBN. The researchers discovered a bidirectional Granger causal relationship between loans and advances given to Nigeria's agriculture industry and NPL. Long-term NPL was shown to be positively correlated with agricultural production, GDP growth, and the amount of loans and advances made available to the agricultural industry. However, in the short term, both the negative impact of interest rates and the positive impact of GDP growth rate had a significant impact on NPL.

Real Estate Financing and Non-Performing Loans

In research conducted in 2018 with a primary focus on Kaduna state, by Nwuba and Chukwuma-Nwuba (2018) looked at the obstacles to obtaining mortgages in Nigeria's metropolitan housing markets. The main goal of the study was to identify the many characteristics, as seen by households, mortgage lenders, and the Federal Mortgage Bank of Nigeria, that serve as obstacles to urban household access to mortgages for homeownership. Low wages and limited savings, which limit households' capacity to make mortgage payments, result in loan repayment default and, ultimately, NPL, according to the report. High interest rates, limited access to land, insufficient loanable capital, and a dearth of mortgage lending institutions are further obstacles.

Project Finance and Non-Performing Loans

The impact of oil and gas price shocks on NPLs of banks at the cluster level as well as at the level of commercial and Islamic banks in Qatar between 2000 and 2016 was studied by Saif-Alyousfi, Saha, and Mdrus (2018). According to the analysis, the totality of Qatari banks' NPLs are not considerably impacted by changes in gas and oil prices. However, through institutional and macroeconomic factors that are unique to each country, these variables also have indirect effects on the banks. The study also revealed that while oil and gas prices have a large negative impact on NPLs of Qatari commercial banks, they have a considerable positive impact on NPLs of Qatari Islamic banks due to extended oil and gas-related cash flows. This means that the oil and gas price highs are of tremendous benefit to the Islamic banks in Qatar as there is an increase in cash flow caused by the increase in the oil and gas prices, leading to lower NPLs, than that in commercial banks. The authors also found out that the government can reduce the NPLs in both commercial and Islamic banks through positive fiscal policies.

Commercial Agricultural Credit Scheme (CACS)

In Anambra State, Nigeria, Azubugwu and Osuafor (2019) looked at the effects of Commercial Agricultural Credit Scheme access on beneficiaries' and non-beneficiaries' agricultural production. The findings indicated that farmers' output increased because of using the Commercial Agricultural Credit Scheme. It suggests that CACS had a significant favorable impact on both beneficiaries' and non-beneficiaries' agricultural production. The hypothesis test revealed a strong positive association between CACS and beneficiaries' access to agricultural production.

3. Methodology

The study adopted an *ex-post-facto* research design because the design was suitable for achieving the research objectives which depended grossly on secondary data collected from the annual report and accounts of commercial banks listed on the Nigeria Exchange Group for the period 2011 to 2020. The population of the study was all the thirty-three (33) banks quoted on the Nigeria Exchange Group and the sample size was five (5) banks selected based on the Capital Adequacy, Asset quality, Management Efficiency and Liquidity (CAMEL) rating of Nigerian commercial banks. The study employed a correlation model because it has the capacity to ascertain the relationship between bank credits and default in Loan repayment of deposit money banks in Nigeria. The correlation model was specified as follows:

$$r_{xy} = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$$

Where:

r_{xy} is the correlation coefficient of the linear relationship between the variables x and y ; x_i is the values of the x -variable in the sample; \bar{x} is the mean of the values of the x -variable; y_i is the values of the y -variable in the sample; \bar{y} is the mean of the values of the y -variable; x represents Non-performing Loans; y represents other variables (Agricultural Loans, Commercial Agricultural credit schemes, Real Estate Loans and Project Finance) taken separately in each case.

The study employed correlation techniques to ascertain the relationship between credit types and default in Loan repayment of deposit money banks in Nigeria.

4. Results and Discussion

Descriptive Statistics

Table 4.2.1 above reveals the variable description of the 50 observations of the panel data for sampled deposit money banks in Nigeria.

Table 1: Descriptive Statistics

	NPL	AGRIC LOAN	REL	CACS	PROFIN
Mean	5.933800	48510.62	100118.3	25799.08	57253.90
Median	3.715000	46239.00	93348.00	20067.50	12777.50
Maximum	24.70000	178934.0	281673.0	80704.00	615978.0
Minimum	1.200000	2212.000	12913.00	3694.000	1301.000
Std. Dev.	5.980426	35448.89	55602.56	19802.76	117600.2
Skewness	2.222138	1.637117	1.033010	1.079288	3.463324

Kurtosis	6.885958	6.767755	4.159739	3.407922	14.94727
Jarque-Bera	72.60887	51.90956	11.69465	10.05386	397.3245
Probability	0.000000	0.000000	0.002888	0.006559	0.000000

Source: Researchers' compilation from E-views 10 software, (2022)

From Table 1 the probability of the Jarque-Bera Statistics, Skewness coefficient and Kurtosis all confirmed abnormal distribution.

Pre-Estimation Test

Test for Stationarity (Unit Root Test)

The Phillips-Perron (PP) tests of the unit root was employed for this study, to determine if the variables in the model are stationary, that is to ascertain whether the mean, variance, and covariance of each of the variables used in the model are constant over time, generated through a stochastic process. For the PP test, a variable is stationary if the probability value of PP Chi-square is less than 0.05 (at 5%).

H_0 : The time series variables have a unit root.

H_1 : The time series variables are stationary.

Table 2: Result of Panel Unit Root Tests

Variable	ADF P-value at levels	Decision	ADF P-value at 1 st diff.	Decision	Order of Integration
LAGRICLOAN	0.0001	Reject H_0	—	—	I (0)
LREL	0.0148	Reject H_0	—	—	I (0)
LPROFIN	0.0531	Accept H_0	0	Reject H_0	I (I)
LCACS	0.2355	Accept H_0	0	Reject H_0	I (I)
NPL	0.587	Accept H_0	0.0111	Reject H_0	I(I)

Source: Computed by Researcher Using Eviews 10.0 Statistical Software, 2022

Table 2 is a representation of the stationarity test of the variables employed in this study. It showed that the variables tested for the presence of a unit root, all returned an integration of levels and the first order, indicating that neither of the variables of study has a unit root, or that these variables are stationary at the first difference.

Table 3: Results of Kao (Engle-Granger based) Co-Integration Test

Residual Variance	HAC Variance	ADF	
0.253347	0.183138	t-statistic	Probability
		-2.569852	0.0051

Source: Computed by Researcher Using Eviews 10.0 Statistical Software, 2022

H_0 : There is no co-integration.

Decision Rule: Reject the null hypothesis if the p-value of ADF is less than 0.05.

Conclusion: The Kao (Engle-Granger based) Co-integration test result indicates that the variables under consideration have a consistent long-run connection. This is due to the ADF's probability value being less than 0.05. In other words, the variables are co-integrated. This means that the dependent variable, NPL, and the independent variables; CACS, AGRIC LOAN, PROFIN and REL, share a long-run relationship, and as such, a regression analysis can be conducted on them.

Regression Results

After the application of the ordinary least square (OLS) estimation method on the model earlier suggested in the previous chapter, the following results shown in the table below were obtained.

Table 4: OLS Estimation Result [Dependent Variable: Log (EXRV)]

Variable	Coefficient	Standard Error	T-Stat	P-Value
LOG(AGRIC LOAN)	2.479041	1.309688	1.892849	0.0655
LOG(REL)	-2.31506	1.411976	-1.639589	0.1087
LOG(CACS)	-2.636892	1.376529	-1.915609	0.0624
LOG(PROFIN)	0.348342	0.539219	0.646011	0.5219
C	28.90899	19.13793	1.51056	0.1386
R ² = 0.48, Adjusted R ² = 0.38, F-Stat = 23.58661, Prob(F-stat) = 0.0003, D.W. Stat. = 0.96				

Source: Researcher's compilation from E-views 10 software, (2022)

Agricultural Loans: The value of the t-statistics ($1.892849 < 2$) and the probability of t-Statistics ($0.0655 > 0.05$) shows that Agricultural Loan has an insignificant effect on Non-Performing Loan of deposit money banks in Nigeria.

Real Estate Loans: The value of the t-statistics ($1.639589 < 2$) and the probability of t-Statistics ($0.1087 > 0.05$) shows that Real Estate Loans have an insignificant effect on Non-Performing Loans of deposit money banks in Nigeria.

Commercial Agricultural Credit Scheme: The value of the t-statistics ($1.915609 < 2$) and the probability of the t-Statistic ($0.0624 > 0.05$) shows that Commercial Agriculture Credit Scheme has an insignificant effect on the Non-Performing Loan of deposit money banks in Nigeria.

Project Finance: The value of the t-statistics ($0.646011 < 2$) and the probability of the t-Statistic ($0.0655 > 0.05$) shows that Project Finance has an insignificant effect on Non-Performing Loan of deposit money banks in Nigeria.

Statistical Criteria (First Order Tests)

The value of the Adjusted R^2 is 0.38, which tells us that 38 per cent of the changes in the Non-Performing Loan are explained by the independent variables, while the other 62 per cent are explained by other factors capable of influencing Non-Performing Loan other than Agricultural Loans, Real Estate Loans, Commercial Agriculture Credit Scheme, and Project Finance. These other factors are contained in the error term. The f-test is used to check for the general significance of the model and if the value of the probability of the f-stat (p -value: 0.0003) is less than 0.05 at a 5% critical value, the model is said to be significant and statistically fit. The Durbin Watson Statistic (0.96) shows of positive autocorrelation in the time series data.

Table 5: Covariance Analysis Result

	NPL/AGRICLOAN	NPL/REL	NPL/CACS	NPL/PROFIN
Correlation	0.115989	-0.055521	0.050335	0.512761
t-Statistic	0.809054	-0.385254	0.349174	2.281323
P-Values	0.4225	0.7018	0.7285	0.027
Observation	50	50	50	50

Source: Researcher's compilation from E-views 10.0 Software, (2022)

Table 5 above exhibits the covariance results of the variables of the study. The table shows how the various independent variables of the study relate to each other and with the dependent variable. From the table, Agricultural Loans (NPL/AGRICLOAN) has a positive and weak (11.5%) relationship with Non-Performing Loan, Real Estate Loans (NPL/REL) have a negative and weak (approx. 5.5%) relationship with Non-Performing Loan. Also, Commercial Agriculture Credit Scheme (NPL/CACS) has a weak and positive (5%) relationship with Non-Performing Loan. Furthermore, Project Finance (NPL/PROFIN) has a strong and positive (51%) relationship with Non-Performing Loan. Of all these variables, Project Finance is the one with a strong relationship with non-Performing loans.

Test of Hypotheses

The four hypotheses developed in chapter one of this study were tested using the following decision rule:

Hypothesis One

Step 1: Restatement of the Hypothesis in Null and Alternate Form

H₀: There is no strong relationship between Agricultural Loans and Non-performing loans of deposit money banks in Nigeria.

H₁: There is a strong relationship between Agricultural Loans and Non-performing loans of deposit money banks in Nigeria.

Step 2: Statement of Decision Criteria

According to Gujarati and Porter (2009), the decision rule involves accepting the alternate hypothesis (H₁) if the sign of the coefficient for Agricultural Loans (AGRICLOAN) is either positive or negative, the modulus of the t-Statistic > 2.0 and the P-value of the t-Statistic < 0.05. Otherwise, accept H₀ and reject H₁.

Step 3: Presentation of Test Results

Table 4.2.5 Spearman Rank Order Covariance analysis result is used to test the above stated hypothesis.

Step 4: Decision

The correlation coefficient in Table 4.2.5 shows that Agricultural Loans have a statistically positive relationship with Non-Performing Loans of deposit money banks. However, the values for the t-statistic (0.809054) and probability of the t-statistic (0.4225) depicts that Agricultural Loans have a statistically weak relationship with Non-Performing Loans in the industry. This makes Agricultural Loan unable to predict Non-Performing Loans in the industry.

Hypothesis Two

Step 1: Restatement of the Hypothesis in Null and Alternate Form

H₀: Real Estate Loans and Non-performing loans do not share a strong relationship in Nigeria deposit money banks.

H₁: Real Estate Loans and Non-performing loans share a strong relationship in Nigeria deposit money banks.

Step 2: Statement of Decision Criteria

If the sign of the coefficient for Real Estate Loans (REL) is either positive or negative, the modulus of the t-Statistic is > 2.0 , and the P-value of the t-Statistic is 0.05, the decision rule, according to Gujarati and Porter (2009), requires adopting the alternative hypothesis (H1). If not, accept H0 and disregard H1.

Step 3: Presentation of Test Results

Table 4.2.5 Spearman Rank Order Covariance analysis result is used to test the above- stated hypothesis.

Step 4: Decision

The correlation coefficient in Table 4.2.5 shows that Real Estate Loans have a statistically negative relationship with Non-Performing Loans of deposit money banks. However, the values for the t-statistic (0.385254) and probability of the t-statistic (0.7018) depicts that Real Estate Loans have a statistically weak relationship with Non-Performing Loans in the industry. This makes Real Estate Loans unable to predict Non-Performing Loans in the industry.

Hypothesis Three

Step 1: Restatement of the Hypothesis in Null and Alternate Form

H₀: There is no strong relationship between the Commercial Agricultural Credit Scheme (CBN Special Credit Intervention Fund) and Non-performing loan of deposit money Banks in Nigeria.

H₁: There is a strong relationship between the Commercial Agricultural Credit Scheme (CBN Special Credit Intervention Fund) and Non-performing loan of deposit money Banks in Nigeria.

Step 2: Statement of Decision Criteria

Gujarati and Porter (2009) state that the decision rule entails accepting the alternate hypothesis (H1) if the Commercial Agricultural Credit Scheme (CACS) coefficient's sign is either positive or negative, the t-Statistic's modulus is greater than 2.0, and the t-Statistic's P-value is less than 0.05. If not, accept H0 and disregard H1.

Step 3: Presentation of Test Results

Table 4.2.5 Spearman Rank Order Covariance analysis result is used to test the above stated hypothesis.

Step 4: Decision

The correlation coefficient in Table 4.2.5 shows that the commercial agricultural credit scheme has a statistically positive relationship with Non-Performing Loans of deposit money banks. However, the values for t-statistic (0.349174) and probability of the t-statistic (0.7285) depicts that commercial agricultural credit

scheme have a statistically weak relationship with Non-Performing Loans in the industry. This makes Commercial Agricultural Credit Scheme Loan unable to predict Non-Performing Loans in the industry.

Hypothesis Four

Step 1: Restatement of the Hypothesis in Null and Alternate Form

H₀: Project finance and non-performing loan of deposit money banks in Nigeria do not share a strong relationship.

H₁: Project finance and non-performing loan of deposit money banks in Nigeria share a strong relationship.

Step 2: Statement of Decision Criteria

The decision rule, as stated by Gujarati and Porter (2009), calls for adopting the alternative hypothesis (H₁) if the sign of the coefficient for Project Finance (PROFIN) is either positive or negative, the modulus of the t-Statistic is > 2.0, and the P-value of the t-Statistic is 0.05. If not, accept H₀ and disregard H₁.

Step 3: Presentation of Test Results

Table 4.2.5 Spearman Rank Order Covariance analysis result is used to test the above stated hypothesis.

Step 4: Decision

The correlation coefficient in Table 4.2.5 shows that Project Finance has a statistically positive relationship with Non-Performing Loans of deposit money banks. However, the values for t-statistic (2.281323) and probability of the t-statistic (0.0270) depicts that Project Finance have a statistically strong relationship with Non-Performing Loans in the industry. This makes Project Finance the only variable capable of predicting Non-Performing Loans in the Nigeria banking industry.

5. Conclusion and Recommendations

The functions of the banking industry in developing and ensuring growth of any nation is indispensable. This is buttressed through its intermediation function of mobilisation of deposits from the surplus section of the economy to the deficit zone in the most profitable manner. However, the rate at which borrowers' default has increased the rate of non-performing loans of deposit money banks in Nigeria. This propelled the researchers to evaluate different credit types and their relationship to loan default in deposit money banks in Nigeria. According to the data analysis's covariance finding, there is a positive but slender association between

Nigerian deposit money banks' non-performing loans and agricultural loans and commercial agriculture credit schemes. However, there is a poor and unfavorable correlation between real estate loans and the non-performing loans of Nigerian deposit money banks. In the Nigerian banking sector, there is also a substantial and positive association between project funding and non-performing loans. The Adjusted R-Squared shows that 38% of changes in non-performing loans in the industry can be explained by agricultural loans, commercial agriculture credit scheme, real estate loans, and project finance, the remaining 62% could be explained by other factors capable of impacting non-performing loans in the industry.

From the findings of the study the researchers made the following recommendations: banks should demand for more collateral before giving out agricultural loans. The farmers must provide adequate collateral before they become eligible to collect agricultural loans. This will spur them to amortize the loans and reduce non-performing loans of banks in Nigeria. The real estate loans were found to decrease non-performing loans of banks; hence, banks are encouraged to maintain the policies that make the repayment of this loan prompt and should adopt a similar policy in dealing with other types of credit. They should ensure that credit takers have a good collateral and a realistic business plan and model of paying back the loans before giving them commercial agriculture credit scheme loans. They should sensitize them on the importance of paying back their loans and the penalties attached to default. Deposit money banks should diminish the rate at which they finance projects of individuals and organizations. They should always ensure that the project will be successful before granting credit for its execution.

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EFFECT OF PENSION FUND INVESTMENT ON PERFORMANCE OF CAPITAL MARKET IN NIGERIA

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Abstract

The study investigates how Nigeria's capital market performed between 1999 and 2021 in relation to pension fund investments. Pre-estimation tests were conducted on each of the variables using the Augmented Dickey Fuller (ADF) unit root test to eliminate erroneous regression effects. The co-integration result was then examined using the ARDL (Autoregressive Distributed Lag) bound test approach, which showed that the performance of Nigeria's capital markets and pension fund investments have reached a long-term equilibrium. The study's conclusions demonstrated that net asset value significantly influences the Nigerian capital market's performance. This suggests that a growth in net asset value is related to an improvement in the capital market's financial performance. The study also demonstrated that equity has a large impact on Nigeria's capital market's performance. Based on these findings, the study suggests that the government ensure that pension funds make adequate investments since doing so will enable Nigerian retirees to have access to sufficient resources to meet their long-term care needs, which will improve the performance of the capital market. There is a need for sufficient rules of the administrators and custodians of pension funds in Nigeria, as well as for policies that support market structure and effective portfolio investing.

Keywords: Pension Fund Investment, Net Asset Value, Equity, All Share Index, and Nigeria

1. Introduction

The aging of the world's population and the resulting demographic shift are expected to have a large financial influence in the ensuing decades. The number of resources and transfers controlled by traditional pay-as-you-go (PAYG from here on) systems is likely to expand because of such a demographic transition in particular (Allen, Clark & McDermed, 2013). Due to these factors, numerous developed and developing nations have undergone significant reforms, particularly in the last 20 years, with the dual objectives of ensuring the mandatory PAYG pillar's long-term viability and encouraging complementary, private retirement savings through the creation of pension funds (Allen, et. al., 2013).

In search of yield, pension funds all around the world are increasingly investing in new asset types. Due to its ability to diversify assets and match long-term pension funds, the capital market is one investment method that is widely debated. As a result, most investments made by pension funds are in securities that are subject to regulation, and they are carried out through open, regulated, and open trading platforms. The assets of pension funds are valued on a market-to-market basis, except for bonds. The RSA Funds' daily valuation reports are submitted electronically to the commission, whereas the CPFA Funds and Approved Existing Schemes' monthly valuation reports are (PenCom, 2014). The RSA Funds are valued daily because of

Contributors' daily admission and withdrawal. Instructions on the administration and investment of assets held in trust for the benefit of contributors in pension funds may only be given by approved Pension Fund Administrators (PFAs). Except for permissible investments made outside of Nigeria, the PFCs' contractual obligations to PFAs forbid them from contracting out the safekeeping of pension fund assets to other parties. When hiring a worldwide custodian for certain permissible foreign investments, the PFC must first receive prior clearance from the commission (PenCom, 2014).

In Nigeria, the Pension Reform Act (PRA) and the Pension Reform Act 2014 were both passed and are currently in effect. The Act that created the New Contributory Pension System covers workers in the public and private sectors. Each employee and employer are required to contribute a minimum of 7.5% of the employees' monthly income to the plan, even though in the military each officer is only required to contribute 2.5% and the corporation is required to contribute the remaining 12.5%. Employers may choose to make contributions on behalf of their personnel as long as the overall contribution does not go below 15% of the employees' monthly wage. Workers may also make voluntary contributions to the plan (including those exempt from the Act); If these donations are made more than five years after the initial voluntary contribution, they are the only ones that can be withdrawn and become taxable. The Pension Reform Act of 2014 raised the minimum rate of pension contribution from 15% to 18% of monthly compensation, with 8% contributed by the individual and 10% by the company. This was done to ensure the financial security of every retiree in Nigeria after retirement. A defined contribution fund, that is. The departing employee receives the money.

The employer contributes the employee match, and the monthly contribution is collected from each employee's pay, making the new pension plan in Nigeria fully financed. After that, both contributions are added to the appropriate retirement savings account. The pension assets are set aside from the start to cover future pension liabilities since every employee is required by law to open a Retirement Savings Account (RSA) in his name with a Pension Fund Administrator (PFA) of his choice. The statute also mandated that the assets accumulated for pension funds must be invested in securities and equities, the profits from which must be distributed to retirees. Pension funds are usually the largest institutional investors in a nation since they manage relatively large amounts of capital. This has led to the asset backing of many pension systems today. As a result, there is now a closer connection between the success of these investments and retirement income. Due to their expertise in assessing risks and investment opportunities, pension funds are believed to perform better and make the most of their assets. As a result, institutional investors using pension funds are given the duty of developing and managing their wealth prospects.

The capital market is a place on the financial market where companies and governments can raise long-term capital by selling debt or equity instruments. It is a market where loans are provided for periods longer than a year, and it is important for a nation's economic growth (Sheffrin, 2013). It benefits the economy by providing financial resources for the support of long-term activities through its intermediation mechanism. According to Meng and Pfau (2010), the growth of funded pension plans will have a substantial long-term impact on the stability and development of the financial markets. Considering this, in the absence of a functioning capital market, the economy might not have the long-term resources needed for sustainable growth. Regulating organizations, however, mandate that pension funds invest a large portion of their resources in a range of local assets to distribute their risk as far as possible across the nation. According to Henshaw (2012), investing pension funds could provide long-term funding for the country's economic and social development. There have been numerous studies in this field, but most of them concentrated on the impact of pension fund investments on financial institutions, social transformation, and economic growth in Nigeria. Finding out how it impacts Nigeria's stock market performance will be interesting.

In general, assets must be effectively invested through investment vehicles that can offer lower risk, the security of the fund, and higher returns to guarantee that future pension benefits from savings in a pension plan, particularly a contributing pension scheme, will be paid. One such place to invest is the stock market. The capital market is an essential resource for boosting productivity and engaging in investment activities that support quick industrial and economic growth (Ogege & Ezike, 2012). The effective allocation and mobilization of capital for investment goals is the core function of the Nigerian capital market. The market creates mechanisms to channel savings from numerous types of surplus economic units into the production process, hence fostering economic growth and development.

The anticipated effects on long-term efforts including home construction, power production, road construction, and healthcare facilities have not yet materialized in full despite the expansion of the Nigerian capital market. Basic infrastructure necessities like good road networks, portable water, affordable housing programs, appropriate education and amenities, enough power supplies, and medical facilities are still lacking in Nigeria (Tule, et. al., 2015). When it reached its peak in 2011 at 13.05% of market capitalization, the bond capitalization of the Nigerian Stock Exchange market had a stake of less than 1% of the entire market capitalization in 2014. (CBN 2014). This implies that the bond market is less active, which reduces the market for long-term development financing. However, through a pilot study, the researchers found that the capital

market's performance in terms of the all-share index is still behind expectations, despite pension funds' concentration on investing in net asset value and equity. On this same foundation, the study poses the following research issues.

This study's primary goal was to determine how pension fund investments affected Nigeria's capital market's performance. Other goals include assessing the impact of equity on performance (all share index) in Nigeria and investigating the impact of net asset value on performance (all share index).

The hypotheses of the study are stated in null forms and tested from the objectives of the study:

Ho₁: Net Asset Value has no significant effect on the performance of all share index in Nigeria.

Ho₂: Equity has no significant effect on the performance of all share index in Nigeria.

Previous studies, including that of Nageri, et al. (2019), who used ARDL bound testing to examine the long-term relationship between pension funds and capital market development in Nigeria, discovered a positive and substantial association between the variables. Additionally, Orbunde et al. (2018) found a positive connection between the pertinent variables when they employed the Ordinary Least Square (OLS) approach to evaluate the impact of pension fund investments on Nigerian capital market performance. Finally, Catalan et al. (2011) established a statistically significant relationship between the independent and dependent variables when they investigated if there is a granger-causality relationship between the capital market All Share Index (ASI) and contractual savings made through pension funds. None of these studies, however, combined net asset value with equity to represent investments made by pension funds and all-share index to represent the capital market. Unfortunately, no study considered the period from 1999 to 2021 as the scope of their investigation. The life cycle hypothesis was not adopted as a theoretical foundation by any.

2. Review of Literature

2.1 Conceptual Review

Concept of Pension Fund Investment

Pension fund investments aim to raise enough money (contribution) through savings to have a fully funded pension plan. To benefit shareholders, the interests of the employee after retirement, and to successfully contribute to economic growth, the system encourages irresponsible individuals to save. A recognized institutional investor that produces long-term contractual savings and encourages the growth of the securities market is pension fund investment (Mesike & Ibiwoye, 2012). Pension funds are financial intermediaries that aggregate money and invest it for later distribution to members as pensions. Typically, non-financial

companies sponsor them (Ndum, Okoye & Amahalu, 2019). One of the most significant institutions in various national financial markets are pension funds.

Due to this, the primary goals of pension investment are to ensure that contributors receive adequate, affordable, and sustainable benefits, to ensure the safety and security of funds, to ensure that there is enough liquidity to pay all contributors' pension benefits when they are due, and to optimize the trade-off between risk and return through strategic asset allocation. Government securities, corporate bonds and loans (including REITs, mortgage-backed securities, and asset-backed securities), money market instruments, common stocks, and open-end and closed-end funds are among the asset classes available for investment (Eyamba, 2018). All active young donors under the age of 49 would be included in Fund 2 under the new fund structure, and 60 to 70 percent of donations would be invested in bonds and treasury bills. The remaining amount would be invested in the money market and other assets (Bassey, 2018). Fund 3 is a pre-retirement fund with 80% of the money invested in bonds and treasury bills for adults between the ages of 50 and 60. The fourth fund would be a retirement fund for people who are 60 years of age and older. Given that the various funds are designed to match the ages and risk profiles of donors, the introduction of multi-fund investment structures for Retirement Savings Account (RSA) funds would handle the changing risk appetite of contributors (Bassey, 2018).

Concept of Capital Market

By dividing the share price by the total number of issued and traded shares, one can calculate a company's capitalization. The overall capitalization of a financial market is equal to the entire capitalization of the listed companies. A key indicator for determining the value of stocks and of companies in general is market capitalization (Toramane et al, 2019; Dias 2013).

Long-term capital can be raised through the Nigerian capital market, which is a part of the nation's financial system. Major fund borrowers including businesses, the federal government, local governments, and the business community are all satisfied by this market. The Nigerian capital market consists of two markets (the primary and secondary markets) and a few operating institutions (Matthew & Odularu, 2019). The Securities and Exchange Commission (SEC), which regulates the market from atop, the Nigerian Stock Exchange (NSE), issuing houses, stock brokerage firms, and the SEC are the main participants in the capital market. Nigeria's secondary market is called the NSE. Nigeria's capital market generally promotes the nation's industrialization and economic expansion. It also improves the gearing of the domestic corporate sector and reduces its dependency on borrowing. The Nigerian capital market's framework serves as the foundation for

both the stimulation of institutional development and access to financing for new and smaller businesses (Matthew & Odularu, 2019).

2.2 Empirical Review

Ndum, Okoye, and Amahalu (2019) investigated the relationship between Nigeria's economic progress and pension fund asset investment using time series data covering a twelve-year period, from 2006 to 2017. The National Pension Commission (PenCom) annual reports, the Central Bank of Nigeria, the National Bureau of Statistics, and the World Bank development indicator (database) of 21 licensed pension fund administrators as of December 31, 2017, were among the sources used to compile secondary data for the period. Using the Augmented Dickey-Fuller test and the statistical tool E-views 9.0, the acquired data were analyzed and assessed for unit root. According to the suggested hypotheses, three models were estimated using the ordinary least squares techniques. Gross domestic product at the 5% level of significance, assets in pension funds, donations to pension funds, and investments made by pension funds. The findings showed that the variables had a favorable significant outcome.

Using an ARDL bound testing methodology, Nageri, Adekunle, and Taiwo (2019) examined the long-term connection between Nigeria's capital market development and pension funds. The system reaches long-term equilibrium at a rate of 113%, proving that the variables have long-term co-integration. There was no such association between the real interest rate and the stock market, but the research did find a short-run causal relationship between inflation and the stock market at a 5% significance level and one between pension fund assets at a 10% significance level.

In a 2018 study, Orbunde, Lambe, and Bako examined how Nigeria's stock market performance was impacted by pension fund investments. Ordinary Least Square (OLS) was employed in the study to contrast the correlations between the pertinent variables. Market Capitalization, All Share Index, and Debt Capitalization are factors that generated interest during the 2008 to 2018 study period. Relevant secondary data were collected from a variety of sources to accomplish these goals. The findings show that market capitalization and debt capitalization are positively and significantly impacted by the pension fund's net asset value, whereas the all-share index of the economy is negatively and hardly affected.

2.3 Theoretical Framework

Life-Cycle Theory

Franco Modigliani and his student Richard Brumberg advanced this theory in the early 1950s. The start-up, growth, and maturity phases can be used to categorize the growth of a pension fund, according to the hypothesis. The theory explains the three stages of a pension fund administrator's development and the related financial requirements. The Life-Cycle Hypothesis (LCH) is an economic hypothesis that examines how people spend and save money over the course of their lifetimes. The idea further assumes that people budget their lifetime expenses while considering their anticipated income. They take on debt as a result while still in their youth because they think they will be able to pay it off with their future earnings. To sustain their level of spending after retirement, they start saving in their middle years. Because of this, wealth accumulation has a hump-shaped pattern, with youth and old age having lower rates and middle age having greater rates (Modigliani, 1966 in Deaton, 2005).

3. Methodology

Ex-post facto design was chosen as the research method for this study. This research design, according to Onwumere, et. al., (2013), is the statistical correlation between dependent and independent variables with the aim of establishing endogenous variables between them. The population comprised of all the pension fund investment of net asset value and equity to performance of capital market (all share index) in Nigeria, which was sourced from a secondary data view because it involves a time series data. These secondary data were gathered from the World Bank Economic Reports, the CBN Economic Reports and Financial Statistical Bulletin, National Bureau of Statistics Economic Reports and PENCUM Publications. Annual data was used and covers the period of 1999 to 2021 that is, 23 years. The annualised secondary data was analysed with the aid of Autoregressive Distributed lag (ARDL) and Error Correction Mechanism (ECM), as well as employing the co-integration method to test for the long-run effect among the series. In other words, the underlining postulation was that the two variables are blended in order 1 or I (1).

Model Specification

Unit Root Test

Non-stationarity is frequently a false issue in regression that contributes to misleading results for estimators and test statistics (Gujarati & Porter, 2009). Empirical time series suffer from the issue of non-stationarity,

which makes traditional econometric methods like two stage least square and ordinary least square ineffective. We assume a random walk model (RWM) to get the unit root properties:

$$Y_t = \rho Y_{t-1} + v_t \quad -1 \leq \rho \leq 1 \quad \text{-----}(1)$$

Where: Y_t is a vector of the variables specified in the model. In the equation (1) above, we simply regress Y_t on its one-period lagged value Y_{t-1} and find out if estimated ρ is statistically equal to 1; if the latter condition is satisfied, then Y_t is stationary. For ease of estimation of the equation above using OLS, it is hereby transformed as follows:

$$\Delta Y_t = \delta Y_{t-1} + v_t \quad \text{-----}(2)$$

Where:

$\delta = (\rho - 1)$ and Δ represents the first difference operator. We proceed to estimate equation above and test the null hypothesis that $\delta = 0$, and the alternative hypothesis that $\delta < 0$, if $\delta = 0$, then $\rho = 1$; this implies the existence of a unit root and suggests that the series is non-stationary.

Augmented Dickey Fuller test (ADF)

A different approach to decision-making using crucial tau statistics was presented by Dicky and Fuller (1979) based on Monte Carlo simulations based on equation (2) above. As the Dickey-fuller test assumed that the error term was uncorrelated but in instances where are correlated, the advanced Dickey-fuller (ADF) test, a complex unit root test, was devised. The study will take advantage of this new unit root test variation to determine the proper lag time needed to address the serial correlation issue in the error term. The lagged values of the dependent variable are added to the equation above by the ADF test ΔY_t ;

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{i=1}^m \alpha_i \Delta Y_{t-1} + \varepsilon_t \quad \text{-----}(3)$$

Where:

$\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2})$, ε_t is a term for pure white noise mistake. Empirical analysis is used to identify the appropriate number of delays. Researchers frequently use the appropriate lags to guarantee that the error term is serially uncorrelated thus producing an unbiased estimate for δ (the coefficient of lagged Y_{t-1}).

Giving the theoretical review, the econometric model employed in this study to examine the effect of pension fund investment on the performance of capital market in Nigeria was formulated following the study of Catalan, et. al., (2011) with a slight modification to suit the adaptation of this study. Thus, the model for this study was specified as:

$$\text{Performance of Capital Market} = f(\text{net asset value, equity}) \dots\dots\dots(4)$$

$$ASI = \beta_0 + \beta_1 NAV + \beta_2 EQU + \varepsilon \dots\dots\dots(5)$$

Performance of Capital Market is measure by (*All Share Index*)

Pension Fund Investment is measured by (Net Asset Value and Equity)

Where:

ASI = All Share Index; NAV = Net Asset Value; EQU = Equity

ε = error term; β_0 = Constant

$\beta_1 = \beta_2$ coefficient parameters

By incorporating our connection between pension fund investment and capital market performance into the unconstrained ARDL model, we might develop the constrained ARDL steady-state model (which was achieved by using OLS methods to estimate the general ARDL model). According to appearance:

$$\Delta \log(ASI)_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta \log(ASI)_{t-i} + \sum_{i=1}^m \alpha_2^i \Delta \log(NAV)_{t-i} + \sum_{i=1}^m \alpha_3^i \Delta \log(EQU)_{t-i} + \lambda_1 \log(ASI)_{t-1} + \lambda_2 \log(NAV)_{t-1} + \lambda_3 \log(EQU)_{t-1} + \mu_t \dots\dots\dots(6)$$

α_0 = Intercept or drift operator; $\alpha_1 - \alpha_3$ = coefficients of short run dynamics; $\lambda_1 - \lambda_3$ = Long run

multipliers; Δ = First difference operator; k = Respective specific optimum lags orders of the variables entering ARDL-ECM; ε_t = Error term; t = time

The study would then continue and use an unlimited error correction model to assess the short-run dynamics and long-run impact. once the co-integration relationship between the variables has been established. The short-run dynamics of the error correction model (ECM) are affected by the divergence of the current state from its long-term connection since the ECM is a dynamic system. The ECM class of multiple time series models provides an explicit estimate of how quickly the dependent variable returns to equilibrium following a change in the independent variables. Following position of Catalan, et. al., (2011), the relationship between pension fund investment and performance of capital market is specified as:

$$\Delta \log(ASI)_t = \alpha_0 + \alpha_1 \Delta \log(ASI)_{t-1} + \alpha_2 \Delta \log(NAV)_{t-1} + \alpha_3 \Delta \log(EQU) + \delta ect_{t-1} + \mu_t \dots\dots\dots(7)$$

The ect_{t-1} captures the process by which agents evolve their output to correct for previous period's prediction failures.

4. Data Analysis and Results

Descriptive Statistics

Descriptive or summary statistics were applied to the data to gain an understanding of the traits and behavior of the data used in the research. It assisted the research in comprehending the patterns in the data that were used for the analysis. The findings from the descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics Results

	ASI	EQU	NAV
Mean	27503.52	1205628.	716.2204
Std. Dev.	12256.63	898465.0	596.0320
Skewness	0.275916	1.261115	0.838064
Kurtosis	3.204758	4.053549	3.558966
Jarque-Bera	0.332010	7.160289	2.991772
Probability	0.847042	0.027872	0.224050
Observations	23	23	23

Source: Authors Computation, 2022 (Eviews-12)

Table 1's descriptive statistics information makes it evident that the ASI has a mean value of 27503.52 billion. Between 1999 and 2021, NAV had a mean value of 716.2204, closely followed by EQU, which had a mean value of 1205628 billion. All the model's variables' values for skewness and kurtosis reinforced the analysis as well. All three variables, ASI, NAV, and EQU, were found to be favorably skewed, as shown by their respective values of 1. 0.275916, 0.838064, and 1.261115.

None of the variables throughout the study period satisfied the requirements for platykurtic (fat or short-tailed) variables, which are characterized as having a value of fewer than three kurtoses, as indicated by the kurtosis values. Throughout the study period, it was discovered that all three variables were leptokurtic (slim or long tailed). Variables with a Kurtosis value larger than three are referred to as leptokurtic. The Jarque-Bera test, which was used to quantify or determine the normality assumption of the variable, only revealed that one of the three variables, EQU, was not normally distributed because its probability value of 0.0278 was found to be less than 5%. The remaining two variables' distributions were found to be normally distributed. The descriptive statistics ultimately demonstrated that the data sets typically have a normal distribution.

Unit Root Test Results

When a variable's absolute value is considered, it is said to be non-stationary if the test statistics at various levels of significance are below the critical value. Consequently, as shown in Table 3, this study employed or

modified Augmented Dickey-Fuller (ADF) approaches to test and validate the series unit root property and model stability.

Table 2: Unit Root Test Result

Variable	ADF Test Statistics		
	ADF	Critical Value	Order of Integration
ASI	-4.748072	-4.498307*	I(1)
EQU	-5.868516	-4.467895*	I(1)
NAV	-5.047232	-4.571559*	I(1)

Source: Authors Computation, 2022 (Eviews-12)

Table 2's results for the ADF Test may be shown to indicate that all three variables (ASI, EQU, and NAV) are integrated at order one. Their ADF test statistics were -4.748072, -5.868516, and -5.047232, which were all more than the crucial values of -4.498307, -4.467895, and -4.571559 (all at 1%) and indicated that they had been determined to be stationary at first difference.

Co-integration Results

Table 3 displays the outcomes of the ARDL limits test for Co-integration for the three models using the recommended delays from AIC.

Table 3: Bound Test-Co-integration Results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	28.49057	10%	2.63	3.35
k	2	5%	3.1	3.87
		1%	4.13	5.0

Source: Authors Computation, 2022 (Eviews-12)

Table 3's co-integration test findings show that, at the 5% level of significance, the F-statistic value of 28.49057 is more than the lower (I(0)) and upper bound (I(1)) critical values of 3.1 and 3.87, respectively. The co-integration of the variables allows for the derivation of a long-run equilibrium relationship between pension fund investments and the performance of the Nigerian stock market between 1999 and 2021. As a result, the null hypothesis—that there isn't a long-term association—is rejected at the 5% level of significance.

ARDL Results and Statistical Test of Hypotheses

Table 4: ARDL Error Correction Regression

Dependent Variable: DLOG(ASI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(ASI(-1))	-9.62258	0.573459	-16.7799	0.0035
DLOG(ASI(-2))	-13.1223	0.789652	-16.6178	0.0036
DLOG(NAV)	0.303167	0.137084	2.211537	0.1575
DLOG(NAV(-1))	17.56986	1.057926	16.60784	0.0036
DLOG(NAV(-2))	10.87681	0.654155	16.62727	0.0036
DLOG(NAV(-3))	2.83991	0.173067	16.40933	0.0037
DLOG(NAV(-4))	-3.84612	0.227833	-16.8813	0.0035
DLOG(EQU)	-3.48041	0.195643	-17.789	0.0031
DLOG(EQU(-1))	-15.3504	0.911143	-16.8474	0.0035
DLOG(EQU(-2))	-11.1396	0.659823	-16.8828	0.0035
DLOG(EQU(-3))	-6.3848	0.396817	-16.09	0.0038
DLOG(EQU(-4))	5.854754	0.358982	16.30932	0.0037
CointEq(-1)*	-0.36703	0.021744	-16.8792	0.0035
R-squared	0.977116			
Adjusted R-squared	0.919944			
F-statistic	26.94716			
Prob(F-statistic)	0.014907			
Durbin-Watson stat	1.905813			

Source: Authors Computation, 2022 (Eviews-12)

The system corrects (or adjusts to) equilibrium in the following year at a speed of 36.703%, which is a very high rate. The ECM value is 0.36703, indicating that. Because the adjustment process to equilibrium is faster the higher the ECM value, the adjustment process to equilibrium is implied to be quicker. To show the model's capacity for explanation and the precision of the estimates, the coefficient of determination (R-square) was used. It demonstrates how well the model matches predictions. It was discovered that NAV and EQU combined accounted for 97.71 percent of changes in ASI, but the error term could only account for 2.29 percent of fluctuations that were not accounted for.

The importance of the results was also shown by the F-statistic, which is used to evaluate the overall significance of the regression model. This is captured by the probability value of 0.014907, which is significant at the 5% level and goes along with the F-statistic value of 26.94716.

Also, the model's Durbin Watson (DW) value of 1.905813 indicated that the variables do not automatically correlate (which fell within the acceptable range of 1.5 and 2.4). This proved that the estimates were unbiased and reliable for formulating policies.

Statistical Test of Hypotheses

Three hypotheses were presented in this study, and 5% was chosen as the Wald test's level of significance for the two-tailed test. Based on the probability value, the null hypothesis must either be accepted or rejected (PV). The questionable variable is shown to be statistically significant at the 5% level if the PV is less than

5% or 0.05 (i.e., PV 0.05); otherwise, it is not significant at that level.

Hypothesis One

H_{01} : Net Asset Value has no significant effect on the performance (All Share Index) in Nigeria.

Table 5: Wald Test results on Net Asset Value and All Share Index

Test Statistic	Value	df	Probability
F-statistic	22.14693	(5, 2)	0.0438
Chi-square	110.7346	5	0.0000

Source: Authors Computation, 2022 (Eviews-12)

The computed F-value for the correlation between Net Asset Value and All Share Index is 22.14693, and its probability value is 0.0438, as shown by the Wald test in Table 5. The initial null hypothesis (H_{01}) was rejected since the probability value is less than 0.05 at the 5% level of significance, which places it in the rejection zone. As a result, the performance (All Share Index) in Nigeria is significantly influenced by Net Asset Value.

Test of Hypothesis Two

H_{02} : Equity has no significant effect on the performance (All Share Index) in Nigeria.

Table 6: Wald Test results on Equity and All Share Index

Test Statistic	Value	df	Probability
F-statistic	17.91387	(5, 2)	0.0437
Chi-square	89.56934	5	0.0000

Source: Authors Computation, 2022 (Eviews-12)

Table 6's Wald-test results showed that 17.91387, with a probability value of 0.0437, was the estimated F-statistic value for the relationship between equity and the All-Share Index. The second null hypothesis (H_{02}) was rejected since the probability value was less than 0.05, or the 5% level of significance (and fell in the rejection region). The study's findings demonstrate that equity has a significant impact on performance in Nigeria (as measured by the All-Share Index).

Post Estimation Diagnostics Tests

Diagnostic checks are performed to confirm the outcomes of the parameter evaluation of the model. There is no serial correlation in the model, the Jarque-Bera test is normal, and the ARCH heteroscedasticity test is not heteroscedastic. The post estimation tests are built on top of these null hypotheses. Table 8 displays the residual test findings as a result.

Table 7: Results of Residual Test

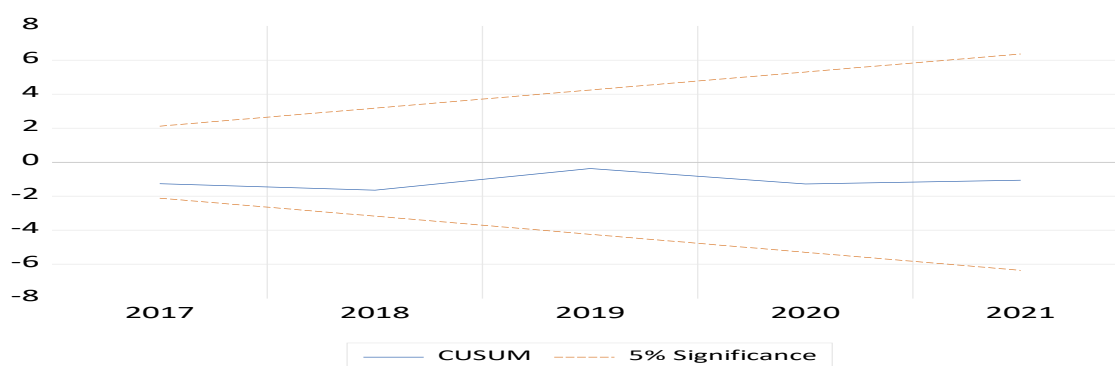
Tests		Outcomes	
		Coefficient	Probability
Breusch-Godfrey-Serial-Correlation Test	F-stat.	3.435978	0.5545

Heteroscedasticity-ARCH Test	F-stat.	1.513334	0.2443
Normality Test	Jarque-Bera	2.914620	0.2328
Linearity Test	F-stat	5.630948	0.0766

Source: Authors Computation, 2022 (Eviews-12)

While both model's estimated p-values (0.5545 and 0.2243) were found to be higher than 0.05 or 5%, Table 7's results for the model demonstrate that neither serial correlation nor heteroskedasticity were present in the estimated model. At the 5% level of significance, the result had a normal distribution with a bell-shaped symmetrical distribution, according to the Jarque-Bera test for normal distribution. According to the model specification result, which demonstrated that the p-value of 0.0766, which was discovered to be greater than 0.05 (at the 5% threshold of significance), suggested, the model was correctly specified. This was covered by the Jarque-bera probability value of 0.2328, which was found to be higher than 0.05. Because the plot of the charts conforms with the necessary limits at the 5% significance level, the cumulative sum (CUSUM) stability tests in figure 1 show that the model was stable, and the regression equation was appropriately developed.

Figure 1: CUSUM Stability Tests



Discussion of Findings

The results of the study showed that the performance of the Nigerian capital market is highly influenced by net asset value. This suggests that the growth in net asset value is related to an improvement in the capital market's financial performance. This implies that improved capital market performance would result from higher pension fund contributions. This is consistent with the findings of Abdul (2016), whose research revealed that the capital market performance is highly impacted by the interactions between investments made by pension funds and interest rates. Moreover, Orbunde et al. (2018) found that Market Capitalization is positively and significantly impacted by Pension Fund Net Asset value.

The study also demonstrated that equity has a substantial impact on Nigeria's capital market's performance. This shows that the performance of the capital market is inversely correlated with the level of equity investment made by pension funds. So, a pension firm's equity investment strategy is essential for the growth

of the capital market. This result is consistent with research by Musawa and Mwaanga (2017), who found that equity-based pension funds considerably aided the development of the capital market. The life cycle theory, which contends that people budget their spending throughout the course of their lifetimes while taking potential future income into account, serves as the theoretical basis for this study. As a result, people take on debt when they are still young because they believe they will be able to pay it off with their future income. They begin saving in their middle years to maintain their level of spending after retirement.

5. Conclusion and Recommendations

Registered contributions and pension assets have both increased significantly in Nigeria. This greater sum of money may be utilized to fill infrastructure gaps and fix deteriorating infrastructure, which might pave the way for economic expansion. Assets held by pension funds are increasing quickly and will provide a sizable portion of the investment capital for the local banking sector. Investments made by pension funds are anticipated to boost the availability of long-term capital, encourage financial innovation, and enhance capital market performance. As a result, the study draws the conclusion that pension fund investments are beneficial for the expansion of the capital market. It illustrates how important it is to manage pension fund investments as effectively as possible to guarantee that they will provide retirees with a positive return on investment in the future. Notwithstanding the fact that pension funds' investments in the capital market helped Nigeria's capital market grow, the long-term effects would be more noticeable. Hence, the report recommends that governments ensure pension funds make sensible investments because doing so will give retirees in Nigeria access to enough money to meet their long-term needs, which will enhance the functioning of the capital market. A significant correlation between asset valuations and returns results from correctly invested assets because they are being used to generate income for pension funds. Nigeria must implement regulations that encourage market structure and efficient portfolio investing, as well as proper regulation of pension fund administration. More investments from pension funds should be made in capital market investments to expand, enhance, and strengthen market competition in Nigeria.

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INTERNATIONAL PUBLIC SECTOR ACCOUNTING STANDARDS (IPSAS) IMPLEMENTATION AND FINANCIAL REPORTING QUALITY IN CROSS RIVER STATE, NIGERIA

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Abstract

This paper explored the relationship between International Public Sector Accounting Standards (IPSAS) implementation and financial reporting quality in Cross River State, Nigeria. Survey research design and purposive sampling method were adopted. The population considered in this study was made up of middle and top-level management staff of Cross River State Ministry of Finance, totaling 35. Primary data were collected through administering questionnaires to a sample of 19 respondents who were accountants in the Ministry of Finance. Simple Percentage and Pearson correlation were used as techniques of data analysis. The results of the analyses indicated that IPSAS implementation has a significant positive relationship with faithful representation and reliability of financial reports. In conclusion, IPSAS implementation by the public sector in Cross River State, Nigeria would result in faithfulness and reliability of financial reports as well as enhancing a uniform standard of financial reporting by the various government institutions in Nigeria and even with the world at large. Thus, the study recommended among others that the implementation of IPSAS should be made mandatory for all government institutions in the federal, state, and local government. The cost of implementation should be budgeted by the concerned government and made available for speedy and smooth implementation.

Keywords: IPSAS, Financial Reporting Quality, Cross River State, Nigeria

1. Introduction

International Public Sector Accounting Standards (IPSAS) refers to accounting standards issued by the International Public Sector Accounting Standard Board (IPSASB) to guide public institutions globally in the preparation of financial statements. The major aim of IPSAS is to enhance financial reporting quality in government institutions, resulting in improved quality of evaluating financial decisions taken by government. However, some governments, including state and local governments have not actually implemented the standards.

The way organisations prepare their financial statements matters a lot as financial statements is a very important component of financial reporting, and a medium of communicating financial information to all stakeholders (John, 2014). Consequently, the preparation of financial statements is now a global issue which necessitates the release of reliable and generally acceptable standard to ensure accountability, transparency, uniformity, and comparability of financial reports by government entities.



The implementation of IPSAS in Nigeria has witnessed a lot of setbacks as the country is yet to fully implement both the cash basis and accrual basis provisions of IPSAS. As such, the accountability, transparency, uniformity, and comparability of financial reports of federal, state and local governments are undermined. The implementation of the cash basis of IPSAS in Nigeria commenced in 2014 while the accrual basis of IPSAS was implemented in 2016. However, some Ministries, Departments and Agencies (MDAs) are yet to comply with the implementation of IPSAS. Thus, the federal government through the Accountant General of the Federation (AGF) warned erring MDAs to comply with the implementation latest 2023 or face natural sanction of losing access to public funds. Also, state, and local governments are yet to join the implementation.

Fajobie (2010) noted that in the past, achieving a good accounting system was difficult due to porous accounting standards and practices. As such, both government revenue generated and allocations of the funds leaked due to the absence of proper accounting control system, coupled with weak auditing framework. Among the reasons put forward by scholars as the cause of failed implementation of IPSAS in Nigeria is lack of the required expertise (Atuilik, Adafula, & Asare, 2016). Thus, the federal government through the office of the AGF has organized a series of seminars and workshops to train the personnel/accountants to ensure a smooth transition to IPSAS practice. For instance, the AGF organised a training course for key public sector accountants in September 2022 to equip them with the needed knowledge to migrate from cash basis IPSAS to accrual basis IPSAS in 2023.

Unfortunately, the continuous delay/failure of MDAs, state, and local governments in the implementation of IPSAS subverts the benefits, including accountability and transparency which negatively affect Nigerians. The need for accountability, transparency and effective reporting of government activities have been heightened in recent years due to widespread corruption in all levels of Nigerian government, including misappropriation of funds, embezzlement, changing figures and misrepresentation of financial reports. Consequently, Nigeria is ranked 154 out of 180 countries in the Corruption Perception Index of 2021, with a score of 24% (Transparency International, 2021). It is against this backdrop that this paper examined the effect of IPSAS implementation on the quality of financial reporting in Cross River State, Nigeria as the main objective. Thus, the specific objectives include:

- i. To examine the relationship between IPSAS implementation and faithful representation of financial reports in Cross River State, Nigeria.
- ii. To assess the relationship between IPSAS implementation and reliability of financial reports in Cross River State, Nigeria.

The following research questions will be answered in section 4 of this paper:

- i. To what extent does IPSAS implementation affect the faithful representation of financial reports in Cross River State, Nigeria?
- ii. What is the extent of the effect of IPSAS implementation on the reliability of financial reports in Cross River State, Nigeria?

The research hypotheses (stated in null form) to be tested in section 4 include:

H₀₁: Implementation of IPSAS has no significant relationship with faithful representation of financial reports in Cross River State, Nigeria.

H₀₂: IPSAS implementation has no significant relationship with reliability of financial reports in Cross River State, Nigeria.

This study was carried out in the Cross River State Ministry of Finance, an institution of the state government charged with the responsibility of managing the financial resources of the state. The Ministry is headed by a commissioner appointed by the governor.

2. Literature Review

2.1 Conceptual Review

IPSAS was developed by International Public Sector Accounting Standard Board (IPSASB) to guide government institutions globally in the preparation of their financial reports to enhance accountability, transparency, consistency, and comparability of financial reports even across jurisdictions. IPSASB is an independent accounting standards setting body established by the International Federation of Accountants (IPSAS, 2021). IPSAS is used to prepare financial statements aimed at satisfying the needs of the public who has no control over the financial reports (Adejola, 2013).

Thus, on June 13, 2011, the Federal Account Allocation Committee (FAAC) during its meeting decided to set up a technical subcommittee to prepare the modalities for IPSAS implementation in the federal, state and local government in Nigeria as approved by the Federal Executive Council (Otunla, 2014). The adoption of IPSAS in Nigeria is necessary to ensure that the public sector in Nigeria which consists of federal, state, and local governments, including their ministries, departments, and agencies, are accountable to the people. Thus, public sector accounting concerns the receipts, custody, disbursements and giving account of public funds entrusted.

The objective of financial statements of government differs from that of the private entities, though the accounting procedure might be similar. Hence, IPSAS targets the enhancement of the quality of financial reporting by public sector institutions to improve the standard of assessments of the resource allocation decisions taken by governments, resulting in transparency and accountability. As such, both the cash basis and accrual basis of IPSAS are important.

The cash basis of IPSAS guides the preparation and presentation of a statement of cash receipts and payments including additional accounting information/disclosures. However, the accrual basis of IPSAS sets out the different components of the financial statement and how to present them (from IPSAS 1 to IPSAS 43) (IPSAS, 2022). The accrual basis of IPSASs is based on the requirements of International Financial Reporting Standards (IFRSs) issued by the International Accounting Standards Board (IASB) where the requirements of such standards are applicable to the public sector.

Thus, IPSASB welcomes inputs from governments and recognized bodies in the development of its standards. This ensures harmony as IPSAS recognizes the right of government to set accounting/financial reporting standards in their jurisdiction. Therefore, IPSAS is currently the global benchmark for assessing government accounting practices and measuring accountability (Chan, 2008). Countries of the world should make their national accounting standards conform with IPSAS to ensure international best practices (Egolum & Ndum, 2021).

Ngama (2012) established that IPSAS implementation would ensure the harmonisation of budgetary system for the federal, state, and local government in Nigeria. Also, Nongo (2014) opined that the implementation of IPSAS in public institutions would ensure improved service delivery, efficient internal control, and enhanced performances of the institutions. Whereas Oulasvirta (2012) opined that IPSAS will guarantee comparability of financial reports of Nigeria with that of other countries of the world with ease.

2.2 Theoretical Review

This research paper is anchored on stewardship theory propounded by Donaldson and Davis (1989). The theory explains that a steward gets satisfaction in working for the best interest/achievement of the goal of the institution that employed him. The theory argues that a steward recognises that individualistic, opportunistic, and self-serving goals will be achieved if work is done for the greater good of the organization.

Government officials are likened to stewards as they are employed to manage the public funds and ensure development and a better standard of living for the people. For proper management of public funds, accountability and transparency are necessary. Thus, to ensure accountability and transparency in public funds management, the adoption of IPSAS is a sine qua non.

2.3 Empirical Review

Tawiah and Soobaroyen (2022) studied the relationship between IPSAS adoption and the level of government financing in developing economies. Fifty-four (54) developing countries were used as sample over a study period of 13 years. The study employed correlation technique in analyzing the data collected. The study found a significant positive relationship between the use of IPSAS and external funding as well as inflow of foreign aid and grants to developing countries. However, the study reported a negative but not significant relationship between domestic debt funding. The study concluded that international capital providers place more importance on IPSAS-based public sector financial reports.

Egolum and Ndum (2021) examined the effect of IPSAS on the quality of financial reporting in Anambra State government. Survey research design was adopted, and primary data were collected from 127 staff of Anambra State Ministry of Finance, Awka, using questionnaires. Chi-square was used for the analysis and the result shows that IPSAS adoption enhances accountability, transparency, and reduction in corruption among public officers in the state. The study recommended that Nigeria should provide the requirements necessary for full implementation of IPSAS in the government sector.

Mijbil and Jabal (2021) examined the impact of the transition to international accounting standards on the quality of financial reporting in Iraq. The study employed a qualitative research approach by conducting a review of previous studies. The study showed that the adoption of international accounting standards in the public sector resulted in overcoming the difficulties encountered in performance evaluation process locally and internationally.

Okpanyi (2016) assessed the effect of adoption of IPSAS on quality of financial reports in Kenyan public sector. Descriptive survey design was adopted, and secondary data were collected from 19 ministries of Kenyan national government. Descriptive statistics and t-test were the techniques of analysis employed. The study showed that IPSAS adoption enhances comparability, relevance, timeliness, and faithfulness of financial reports. However, the result indicated no significant difference in transparency and accountability

between the reports prepared with the previously used accounting standards and the reports prepared using IPSAS. The study concluded that a significant difference exists between old accounting standard-based financial reports and IPSAS-based financial reports in the public sector of Kenya.

Using 164 respondents selected from account department of respective ministries, Olayinka, Okoye, Modebe and Olaoye (2016) examined the impact of adoption of IPSAS on financial reporting quality of Lagos State government, Nigeria. The study used regression technique in analyzing the data collected. The results of the analysis indicated the adoption of IPSAS has a positive and significant impact on financial reporting quality in Nigerian public sector. The paper recommended that the federal government should adopt the appropriate modalities to ensure compliance by the departments of government responsible for preparing financial reports.

Hamisi (2012) examined the factors affecting the implementation of IPSAS in Kenya. This study employed descriptive research design. The population of the study consisted of 38 Heads of accounting units (middle and top-level staff) as well as their deputies in 14 units. The stratified sampling method was used. Both primary and secondary data were used in the study. The techniques of data analysis involved descriptive and inferential statistics. The results indicated that the factors affecting the implementation of IPSAS in Kenya include accounting issues not tackled, lack of appropriate technology and lack of funds. It was concluded that certain problems, including inappropriate technology and funding, hindered the implementation of IPSAS in Kenya. The study recommended that the government should upgrade its Information and Communication Technology (ICT) to cope with the financial data transformation process in line with IPSAS standards.

Also, the United Nations (2009) studied the necessity for UNICEF to adopt IPSAS. A review was carried out by the Task Force on Accounting Standards for the CEB HLCM. The task force submitted its recommendations that the United Nations should adopt IPSAS to facilitate desired reforms and enhance financial statements preparation.

Nongo (2014) assessed the level of adoption and implementation of IPSAS in Nigeria. Qualitative research design was adopted by carrying out a review and the necessary information were obtained from the Office of the Accountant General (OAG) of the Federal Republic of Nigeria. The results of the study indicated that there exists substantial evidence about the implementation of IPSAS in Nigeria. The implementation was done in two phases, Cash-basis IPSASs first, before the accrual-based IPSASs. The study recommended that for accrual based IPSASs to be implemented successfully, the necessary facilities should be put in place.

Finally, Poggiolini (2014) assessed the level of adoption and implementation of IPSAS in South Africa. Qualitative research design was adopted. Primary data collected from Accounting Standards Board (ASB) in South was used, while interview method was employed in collecting the data from respondents. The results showed that public institutions in South Africa have completed their transition to accrual-basis IPSAS. However, the study observed that some ministries were still in the process of transition to IPSAS.

3. Methodology

Survey research design was employed in this study. Survey research is the method of gathering data from respondents in a bid to provide answers to the research questions. It provides guidelines which direct the researcher towards solving the research problems and it may differ due to the nature of the problem studied.

A total of 19 people were purposively selected (purposive sampling) from the population of 35 middle and senior level staff of the Cross River State Ministry of Finance, Calabar. The sample size for the research was made up of accountants in the ministry. The questionnaires developed on a 5-point Likert scale were used to gather data from respondents.

The questionnaires contained closed-ended questions only and the copies were administered directly by the researcher. The developed questionnaire was presented to a senior academic who meticulously made relevant contributions to ensure its suitability for the subject matter.

Percentages and Pearson correlation were the techniques adopted to estimate the relationship between the implementation of IPSAS and quality of financial reporting. This was carried out using a two-tailed test at 5% level of significance. The primary data collected through the distribution of 19 copies of questionnaire to selected respondents in the Cross River State Ministry of Finance were used for the analysis. The study recorded 95% response rate as regards to collecting back the distributed questionnaires.

4. Data Presentation and Analysis

The data collected from respondents through the issuance of questionnaires were analyzed and the results are as presented in the tables below. The research questions that guided the analyses were appropriately answered.

4.1 Data Presentation

Table 4.1: Respondents Opinion on the Relationship between IPSAS Implementation and Faithful Representation of Financial Reports in Cross River State

Faithful representation	Responses										Total	
	U		SD		D		A		SA			
	X	%	X	%	X	%	X	%	X	%	X	%
There is the presence of valid arguments that backs certain assumptions and estimates in the annual report.	2	10.5	0	0	0	0	11	57.9	6	31.6	19	100
The information in the annual report highlights both the positive and negative events.	3	15.8	0	0	0	0	8	42.1	8	42.1	19	100
Government supports its choice of accounting principles on valid arguments.	0	0	0	0	1	5.3	10	52.6	8	42.1	19	100
The reports by the auditor included in the annual reports of government are free from material errors and are verifiable, truthful, and holistic.	1	5.3	1	5.3	1	5.3	13	68.4	3	15.7	19	100
The accounting procedures allow for adjustment of figures of previous accounting period to show the upgrades in accounting policies and revisions in accounting estimates of government.	1	5.3	0	0	0	0	10	52.6	8	42.1	19	100
Mean								54.7		34.7		
								89.4%				

U = Undecided; SD = Strongly Disagree; D = Disagree; A = Agree; SA = Strongly Agree, X= Score, % = percentage

Source: Survey 2022

Table 4.1 shows the results of analysis of responses from respondents regarding the relationship between IPSAS implementation and faithful representation of financial reports in Cross River State. The overall result supports the fact that IPSAS implementation has a positive relationship with faithful representation of financial report in the state to a high extent of 89.4%. This result answers research question 1. The result implies that IPSAS implementation positively influence financial reporting quality in Cross River State, Nigeria.

Table 4.2: Respondents' Opinion on the Relationship between IPSAS Implementation and Reliability of Financial Reports in Cross River State

Items	Responses										Total	
	U		SD		D		A		SA			
	X	%	X	%	X	%	X	%	X	%	X	%
The inclusion of the forward-looking statement helps in building expectations as	1	5.3	0	0	0	0	14	73.6	4	21.1	19	100

well as predictions regarding the future of government activities.												
The non-financial information in the report regarding business opportunities and risks complements the financial information.	4	21.1	0	0	0	0	10	52.6	5	26.3	19	100
The results presented gives feedback to the annual reports users on how various market events and transactions affected government activities.	3	15.7	0	0	2	10.5	9	47.4	5	26.3	19	100
Clarification of presented information and avoidance of technical jargons is necessary for easy comprehension of government financial statements.	1	5.3	0	0	0	0	14	73.6	4	21.1	19	100
Mean (A & SA)									61.8		23.7	
									85.5%			
U = Undecided; SD = Strongly Disagree; D = Disagree; A = Agree; SA = Strongly Agree X= Score, % = percentage												

Source: Survey 2022

From the results presented in Table 4.2, implementation of IPSAS affects the reliability of financial reports in Cross River State to a high extent of 85.5%. The result answers research question 2 and it complements the result presented in Table 4.1 that IPSAS implementation positively affects the financial quality in Cross River State, Nigeria.

The hypotheses of the study were tested from the outcome of the correlation analyses as presented in Tables 4.3 and 4.4 below.

Hypothesis 1

H₀: IPSAS implementation has no significant relationship with faithful representation of financial reports in Cross River State, Nigeria.

H₁: IPSAS implementation has a significant relationship with faithful representation of financial reports in Cross River State, Nigeria.

Table 4.3: Correlation Results for IPSAS Implementation and Faithful Representation of Financial Reports

		IPSAS_IMPLEMENTATION	FAITHFUL REPRESENTATION
IPSAS_IMPLEMENTATION	Pearson Correlation	1	.796**
	Sig. (2-tailed)		.000
	N	19	19
FAITHFUL REPRESENTATION	Pearson Correlation	.796**	1
	Sig. (2-tailed)	.000	
	N	19	19

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS 20 Output

From the results of analysis presented in Table 4.3, IPSAS implementation has a positive and significant relationship with accounting reporting quality as represented by faithful representation of financial reports. Therefore, the null hypothesis is rejected while the alternative hypothesis stating that IPSAS implementation has a significant relationship with faithful representation of financial reports in Cross River State, Nigeria is accepted.

Hypothesis 2

H₀: IPSAS implementation has no significant relationship with reliability of financial reports in Cross River State, Nigeria.

H₁: IPSAS implementation has a significant relationship with reliability of financial reports in Cross River State, Nigeria.

Table 4.4: Correlation Results for IPSAS Implementation and Reliability of Financial Reports

		IPSAS_IMPLEMENTATION	RELIABILITY
IPSAS_IMPLEMENTATION	Pearson Correlation	1	.803**
	Sig. (2-tailed)		.000
	N	19	19
RELIABILITY	Pearson Correlation	.803**	1
	Sig. (2-tailed)	.000	
	N	19	19

** . Correlation is significant at the 0.01 level (2-tailed). Source: SPSS 20 Output

The results of Pearson Correlation shown in Table 4.4 indicated that IPSAS implementation has a significant positive relationship with reliability of financial reports. As such, the null hypothesis is rejected whereas the alternative hypothesis which state that IPSAS implementation has a significant relationship with reliability of financial reports in Cross River State, Nigeria is accepted.

4.2 Discussion of Findings

The study focused on the relationship between implementation of IPSAS and the quality of financial reporting in the Ministry of Finance, Calabar, Cross River State.

The results of the study indicated that IPSAS implementation has a positive and significant relationship with accounting reporting quality as proxied by faithful representation and reliability of financial reports. The result of this study is in line with the findings of Okpanyi (2016) who found that the adoption of IPSAS enhances comparability, relevance, timeliness, and faithfulness of financial reports. Similarly, Olayinka, Okoye, Modebe and Olaoye (2016) found that the adoption of IPSAS has a positive and significant impact on financial reporting quality in the Nigerian public sector.

The findings of Tawia and Soobaroyen (2022) indicated a positive and significant relationship between the adoption of IPSAS and external funding as well as inflow of foreign aid and grants to developing countries.

5. Summary of Findings, Conclusion and Recommendations

5.1 Summary of Findings

The findings from the hypothesis tests show that:

- 1) A significant positive relationship exists between IPSAS implementation and faithful representation of financial reports in Cross River State, Nigeria.
- 2) A significant positive relationship exists between IPSAS implementation and reliability of financial reports in Cross River State, Nigeria.

5.2 Conclusion

The study concluded that IPSAS implementation in Cross River State, Nigeria would positively affect accountability, quality of financial reports, transparency, faithfulness, and good governance. Also, the uniformity and comparability of financial reports would be achieved due to IPSAS implementation.

5.3 Recommendations

The following recommendations were given:

- I. IPSAS implementation should be made mandatory for all public institutions in the federal, state, and local government to have a healthy financial reporting standard as well as transparency and accountability.
- II. The cost of implementing both the cash and accrual basis of IPSAS should be budgeted by the concerned governments and made available to speed up the implementation process. Also, training

and development programs should be organized to equip staff and management of the various public sector institutions to enable them to apply IPSAS properly for optimum result.

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AN ANALYSES OF THE TAX IMPLICATIONS OF INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) IMPLEMENTATION IN NIGERIA: EVALUATING THE POST-ADOPTION EFFECT AFTER NINE YEARS

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Abstract

In a bid to standardise financial reporting and enhance cross border comparison, Nigeria adopted a foreign standard (IFRS) in 2012. Emanating from this, this study sought to investigate how this affects tax treatment among banks by comparing tax and profit figures before and after the implementation. Five listed banks were purposively selected and used as sample and secondary data sourced from the respective financial reports. The time frame for the before implementation figures was from 2003 to 2011, while the after-implementation figures were from 2013 to 2021. Paired sample t-tests and simple mean comparisons were used in testing formulated hypotheses. Evidence revealed no significant difference in tax figures before and after the adoption of IFRS among Nigerian banks, IFRS adoption affects the income tax rate, and IFRS adoption has no effect on profitability. It is recommended that Nigerian government changes its tax regulations and rates to reflect the equivalent effect of IFRS implementation on tax rates.

Keywords: income tax, IFRS implementation, tax rate, profitability

1.0 Introduction

The globalization of business has opened opportunities for investors to invest their money anywhere in the world. To attract these investments, it is important that financial information for investment considerations is clear, comparable, and accurate. This was previously difficult due to the different accounting standards used in different countries. However, the adoption of IFRS in over 120 countries is said to be for the achievement of global comparability, reliability, and uniformity of financial statements' information (Iliemena, Egolum & Ijeoma, 2019; Oduware, 2012).

In 2010, the Nigerian Federal Executive Council accepted a recommendation for the adoption of IFRS in a phased transition. IFRS is based on the framework of the International Accounting Standards Board (IASB), with the objective of providing information useful to various stakeholders. The IASB framework emphasizes that financial statements should be understandable, relevant, reliable, and comparable (Iliemena, Egolum & Ijeoma, 2019; Oyedele, 2011). This has also been achieved as reported by some extant studies which attests to the fact that investor's confidence has increased over time with IFRS implementation in Nigeria (Abate, 2015). This is, however, debatable as the information needs of financial statements users amongst the various stakeholder groups and there is no common measure of satisfaction among the group and then owing to some unpleasant effects which might take some time to surface.

Recent corporate scandals and fraudulent activities in Nigeria caused more concerns and worries about financial credibility of local based reports (Iliemena & Okoye, 2019). To ensure proper accountability and transparency across sectors, it is necessary to follow credible and easily understandable standards for financial statements (Ocansey & Enahoro, 2014). The Companies Income Tax Act and the Financial Reporting Council of Nigeria (FRCN) Act have given added impetus to IFRS adoption, and the Federal Inland Revenue Service has issued guidelines for tax treatment in accordance with IFRS standards. As a result, IFRS financial statements cannot be used for filing tax returns, annual returns, and submissions to regulators such as the CBN (Oyedele, 2011).

According to Oduware (2012), using liability method for statement of financial position is a requirement under IFRS. This approach focuses on temporary differences, while the local Statement of Accounting Standards (SAS) adopts a more simplified income statement method which focuses on timing differences. However, the use of the liability method can be complex and poses challenges for tax laws, which may require a re-examination of the foundations for using accounting for taxation purposes (Samuel, Samuel, & Obiamaka, 2013). While different methods of preparing accounts may comply with accounting standards, the tax implications of these choices can influence the decision-making process. Even though some studies have been carried out in line with the concepts of this study as revealed in our empirical reviews, a lot of these studies were found to be out of date (Ezeani & Oladele, 2012; Abata, 2015; Nengzih, 2015; Abedana, Omane-Antwi & Owiredu; 2016; Egbunike & Okoye, 2017). Some of the past studies on the other hand emanated from other countries (Nengzih, 2015; Abedana, Omane-Antwi & Owiredu; 2016) and finding may be different from what could be obtainable in Nigeria due to differences in tax policies and other enactments. However, it is notable that only a few of these studies conducted a pre-adoption and post adoption analyses in arriving at conclusions (Ibanichuka & Asukwo, 2018) which might have affected the results of the other studies directly or indirectly. To fill these gaps, this current study therefore, aims to investigate the tax implications of IFRS adoption in Nigerian banks, with specific objectives to:

1. Compare reported tax figures before and after IFRS adoption.
2. Determine the extent to which the adoption of IFRS affects income tax rate.
3. Investigate how IFRS adoption affects corporate profitability.

2.0 Literature Review

2.1 International Financial Reporting Standards (IFRS) and Taxation

The IFRS was developed by the International Accounting Standards Board (IASB) to create a unified approach to financial information reporting worldwide. The IFRS framework consists of four document types,



including Standing Interpretations Committee (SICs) pronouncements International Accounting Standards (IASs), International Financial Reporting Interpretations Committee (IFRICs) guidelines, and International Financial Reporting Standards (IFRSs). In Nigeria, publicly listed entities have been required to use IFRS for financial reporting since January 1st, 2012, following the approval of the Federal Executive Council (FEC) and the recommendations of the Committee on Roadmap to adoption IFRS. As of January 1st, 2014, small and medium-sized enterprises (SMEs) are also required to use IFRS for financial accounting and reporting (Oyedele, 2011).

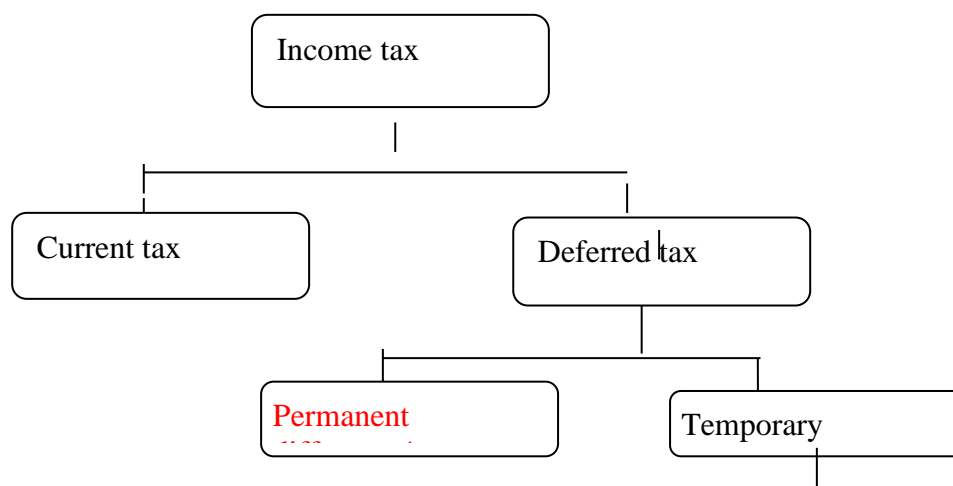
According to Adeboyejo (2013), income taxes encompass various taxes imposed on the profits or income of a business enterprise, including companies' income tax, petroleum profit tax, education tax, IT tax, deferred tax charges, and capital gains tax. The recognition of current tax for a period is expensed in the statement of income while it appears in the statement of financial position as a liability if it remains unpaid by the end of the reporting year, or an asset if it represents excess payment or a tax loss which is to be carried back to recover the amount of tax payable in the current period. The amount of tax payable in each period may not be directly related to the profit or loss reported in the account statement. This is because tax laws make it easy that taxable income can be computed based on rules different from what was used in preparing the account. As a result, a deferred tax provision is typically made in the accounts to ensure that the matching concept of financial accounting is followed in accounting for taxation (Oduware, 2012).

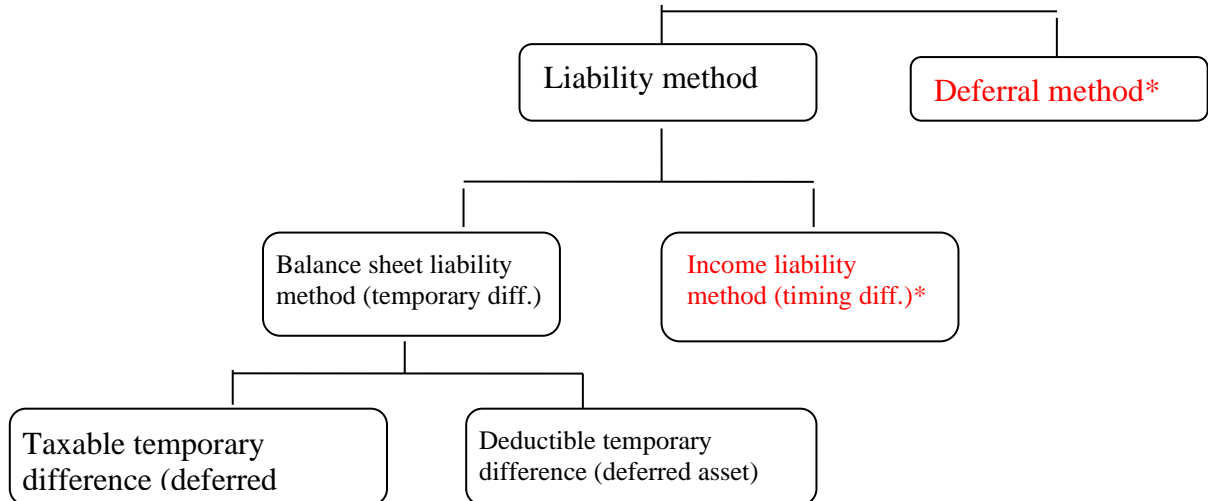
When adopting the IFRS for the first time, an entity is required to follow certain guidelines. They must recognize all assets and liabilities required by IFRS while items not permitted by IFRS should not be recognized. It is further required that items recognized previously under the Statement of Accounting Standards (SAS) be reclassified and comply with IFRS in measuring and recognizing assets and liabilities. However, the resulting net asset is not adopted for computation of minimum tax in the transition year. In addition, the taxpayer may face additional tax charge whereby the amount of retained earnings increased due to the adoption and additional dividends were paid on the increment. The Federal Inland Revenue Service (FIRS) must be provided with details of recognition, de-recognitions, and reconciliations, as well as all adjustments to opening retained earnings and conversion costs. These must be verified by FIRS before such capital or revenue expenditure is classified and allowed as qualified expenditure.

The Financial accounts for the purpose of filing tax returns must comply with IFRS and in line with the FRCN Act. Tax returns are required to comply with Section 55 of Companies' Income Tax Act (CITA) and include the following information on first time adoption and subsequently:

3. On first time adoption: for the purpose of tax computation, a first-time adopter of IFRS is required to submit a statement of financial position showing the retrospective application of accounting policy or restatement of financial statements items. This is expected to reflect the period from “the beginning of the earliest comparative period”. This is to be accompanied with a statement that compares tax impact of the adoption with the formerly used SAS which stands as GAAP and a statement which reconciles items from the previous SAS to IFRS. These are required to be submitted along with the computation of deferred tax. To this study, “the beginning of the earliest comparative period” could be interpreted as the opening financial information in the year of adoption or the closing financial information relating to the preceding year before the year of IFRS adoption. By way of example for better understanding, if the taxpayer adopts IFRS for the first time in 2012, at the end of 2012, the statement of financial position relating to the year-end 2011 and 2012 respectively showing the retrospective application of accounting policies and restatement of items in line with IFRS is to be submitted to FIRS for ease of comparability, along with other requirements already stated above.
4. Subsequently: After the year of first-time adoption of IFRS and onward, the taxpayer is required to submit a statement which details the adjustments to either income or total comprehensive income in arriving at the assessable profit for the year as have been chosen by the taxpayer. In addition, just as required on first time adoption, a document showing the computation of deferred tax for the year. This is necessary as it helps in recognition of the suitable tax which relates to the items disclosed in the annual accounts. When a taxpayer includes an expense or income in operating profit for the year and then includes same as taxable profit in another period, it gives rise to deferred tax in the form of asset or liability as the case may be.

Fig. 1: Overview of Income Tax in relation to IFRS





Source: Adebeyejo (2013)

Key: items marked with asterisks (*) are those which are not permitted by IFRS.

Deferred tax liabilities and assets are accounting concepts that refer to the recognition of taxes in the statements of account. Deferred tax liabilities arise when the tax base of an asset or liability exceeds its carrying amount in the balance sheet, resulting in the recognition of an additional taxable amount in future periods. Conversely, deferred tax assets arise when the carrying amount of an asset or liability exceeds its tax base, resulting in the recognition of a deductible amount in future periods.

The tax base of an asset or liability is the amount which can be attributed to any asset or liability for tax the purpose of tax computation, while temporary differences refer to the difference between the carrying amounts of an asset or liability reported in the statement of financial position and the amount determined as its tax base. Temporary differences can either be taxable, resulting in deferred tax liabilities, or deductible, resulting in deferred tax assets. These variations arise due to the different accounting and tax treatments of certain transactions or events, such as the recognition of revenue or expenses, the use of different depreciation methods, and the recognition of tax losses.

2.2 Institutional Isomorphism Theory

According to DiMaggio and Powell's institutional isomorphism theory (1983), the decision of developing countries to adopt IFRS is highly controlled by factors surrounding institutional pressures, rather than economic factors. The theory identifies the different dimensions of this control to revolve around three basic factors; that is, the institution which the country belongs to in the global environment, e.g World Bank, and this theory recognises this as coercive isomorphism. It is usually coercive in nature whereby countries are mandated by certain regulations to adopt certain foreign standards irrespective of what effect it may have in

their own territory. Some developing countries that have adopted IFRS today may have done that in a bid to comply with one of such regulations. Another level of this control is pressures from professional bodies or as required by the specific profession relating to the issue at hand. This is often viewed as normative isomorphism. The third level of influence on a country's decision to adopt foreign standards is the mimetic isomorphism which applies when a country adopts such standard because another country which it perceives as "superior" has adopted such standard. Resulting from the perception or assumption of superiority of the other country, it is misjudged that the standard is beneficial only because the superior country has the standard in use. These clearly explain why a country like Nigeria would adopt IFRS without conducting sector-suitability tests and without parallel use of both IFRS and SAS *ab initio*.

The theory implies that the adoption of IFRS by a country is driven more by social and institutional factors than by economic considerations. This theory, which has earlier been adopted by Iliemena, Egolum, and Ijeoma (2019), is also found relevant in understanding the reasons and consequences of adopting imported accounting standards in a country.

2.3 Empirical Review

In a study by Idowu and Bello (2021), the effect of IFRS adoption on tax expenses in was explored using data from 74 companies in the Nigerian Stock Exchange from 2012. Paired-sample t-tests and ANOVA were used to test hypotheses, and it was found that IFRS and Nigerian GAAP had no significant effect on income tax expenses. Adegbbite (2020) investigated how IFRS adoption affects tax payable in Nigerian manufacturing companies from the period of 2012 to 2018; findings revealed that depreciation, non-current asset procurement and long-term debt all had negative impact on taxation while the effect on profit was found positive. Iliemena, Egolum, and Ijeoma (2019) analyzed the economic impact of IFRS adoption on Nigerian companies in agriculture and telecommunication sectors from 2005 to 2018. The test of the simple linear regression model showed no significant difference in reported EBIT, EVA, and economic profit in pre- and post-IFRS transition periods. In a comparative analysis of the effect of the adoption on corporate performance, Ibanichuka and Asukwo (2018) studied 10 petroleum marketing companies on time series analyses and found that IFRS adoption had no significant impact on return on asset and return on equity but had a significant impact on earnings per share.

In a study by Egbunike and Okoye (2017), the tax implications of adopting IAS 12 for deposit money banks (DMBs) in Nigeria were evaluated. Using an ex-post facto design, secondary data were collected from 13 quoted DMBs. Mean comparisons and t-test statistical tools were used to test the hypotheses, and a significant difference was found to exist in tax figures and income tax rates of DMBs before and after IFRSs

adoption, but no significant impact on extent of profitability was found. Abedana, Omane-Antwi, and Owiredo (2016) in Ghana, studied the varying effects of IFRS on income taxes, deferred tax, and net tax liabilities (assets). The study sample comprised of listed firms from 2007 to 2008 using both quantitative and cross-sectional approaches. They found that IFRS/IAS adoption reduced the tax burden for companies listed on Ghana Exchange. However, the study is specific to Ghana and not applicable to Nigeria. Nengzih (2015) in a related study in Indonesia investigated the influence of IFRS adoption on the profit rates and tax income of listed firms. Evidence from this study revealed no change in reported profit before taxes resulting from the adoption while it was found that there was significant increase in mean profitability ratio of the firms after the adoption of IFRS. Abata (2015) analyzed how IFRS adoption affects corporate financial reporting using a sample of 14 Nigerian banks. The study specifically explored the differences in the reporting systems respectively under NGAAP and IAS/IFRS. The results revealed that there are significant differences in the reporting system of both standards. These differences could have direct effects on profitability and tax rates which further inform the essence of this present study. Ezeani and Oladele (2012) conducted a survey in Nigeria which evaluated the effect of IFRS on the financial reporting system of Nigerian universities. The sample for the study was 160 internal auditors and accountants. Evidence emanating from the study showed that there is no significant effect of IFRS adoption on the reporting system and recommends that the current public accountability system in Nigeria needs improvement before the effect of IFRS adoption can be significantly evident.

3.0 Materials and Methods

The study used an ex-post facto design and included a sample of Money Deposit Banks (commercial banks) listed on the Nigerian Exchange (NGX) Group. The banks included in the study were Access Bank Plc, Guaranty Trust Bank Plc, Fidelity Bank Plc, Zenith bank and UBA Plc, all of which had adopted IFRS by the time of this study in 2023. The data for the study was obtained from secondary sources, specifically the annual financial statements.

To analyze the data, the study used three different techniques. The Paired Samples T-Test was used to test hypotheses one and three, while a simple mean comparison was used for testing hypothesis two. The paired sample t-test was deemed appropriate as it is commonly used in "before-after" studies, matched pairs studies, or case-control studies. The below formula for the paired sample t-test was used to conduct the analysis.

$$t = \frac{\sum d}{\sqrt{\frac{n(\sum d^2) - (\sum d)^2}{n-1}}}$$

4.0. Analyses And Discussions

Table 1: Descriptives

	N	Minimum	Maximum	Mean	Std. Deviation
Profit Before Income Tax	9	-16261015	35177078	1838900.31	13025975.874
Profit Before Income Tax [IFRS]	9	-17964928	37634686	2351787.69	13593973.953
Income Tax	9	1331	6861517	1360462.46	2246026.983
Income Tax [IFRS]	9	201	7720982	1352820.38	2284281.468
Deferred Tax Assets	9	0	23384264	2655006.38	6530793.977
Deferred Tax Assets [IFRS]	9	0	23337475	2977766.62	6691406.848
Deferred Tax Liabilities	9	0	3474838	323161.54	962182.803
Deferred Tax Liabilities [IFRS]	9	0	3646484	302742.54	1006495.905
Valid N (listwise)	9				

Source: SPSS Ver. 22

The table data indicates that the mean Profit before Tax (PBT) under IFRS was higher than the mean PBT under NGAAP. Moreover, the average Income Tax (IT) under IFRS was lower than the average IT under NGAAP. Conversely, the average Deferred Tax Assets (DTA) under IFRS was greater than the average DTA under NGAAP, while the average Deferred Tax Liabilities (DTL) under IFRS was smaller than the average DTL under NGAAP.

Test of Hypotheses

Hypothesis one

H₁: There is a significant difference between the reported tax figures before and after the adoption of IFRS among Nigerian banks.

Table 2: Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Income Tax	1360462.46	9	2246026.983	622935.804
Income Tax [IFRS]	1352820.38	9	2284281.468	633545.689

Source: SPSS Ver. 22

Table 3: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Diff.				
				Lower	Upper			
Pair 1 Income Tax - Income Tax [IFRS]	7642.1	406644.8	112782.9	-238090.9	253375.1	.068	12	.947

Source: Ver. 22

Table 2 presents the average income tax amounts for NGAAP and IFRS, with a sample size of 13 for each. The results show that the average income tax amount under NGAAP is 1360462.46, while the average

income tax amount under IFRS is 1352820.38. Table 3 reveals that the average difference between the two figures is 7642.077. The statistical analysis shows a Sig. Value is more than .05 (t. .068, df. 12). Consequently, we accepted the null hypothesis of significant difference in tax figures before and after IFRS adoption.

Discussion:

The study objective 1 aimed to test the hypothesis that there is a significant difference in reported tax figures before and after the adoption of IFRS among Nigerian banks. The analysis revealed a slight difference in income tax figures reported under both accounting standards, with a mean difference of 7642.077 as shown in Table 3. The adoption of IFRS resulted in a higher income tax figure compared to the Nigerian GAAP standard.

Nengzih (2015) suggested that Fair Value Accounting (FVA) in various assets like intangible assets, non-current assets, accounts receivables, and the translation of transactions for overseas activities (both monetary and non-monetary) can affect a company's income tax amounts. Samuel, Samuel, and Obiamaka (2013) argued that using IFRS as a tax base brings tax accounting closer to a company's "real economic income." However, there are counterarguments that include the subjectivity of fair value accounting, difficulty in controlling it for tax purposes, taxation of unrealized income, which can affect a company's liquidity, complexity of the standards, and the great number of subjective judgments required leading to increased tax disputes.

Hypothesis two:

H₁: IFRS adoption affects the income tax rate of Nigerian banks

Table 4: Report

	Income Tax	Income Tax [IFRS]	Deferred Tax Assets	Deferred Tax Assets [IFRS]	Deferred Tax Liab.	Deferred Tax Liab. [IFRS]
Mean	1360462.46	1352820.38	2655006.38	2977766.62	323161.54	302742.54
N	9	9	9	9	9	9
Std. Dev.	2246026.983	2284281.468	6530793.977	6691406.848	962182.803	1006495.905

Source: SPSS Ver. 22

After analyzing the data, it was observed that the IFRS adoption had a minor effect on the income tax rate of Nigerian banks. The level of difference existing between the pre-income tax and post-income tax was calculated to be 7642.08, which is approximately 0.005% reduction in the carrying value of income tax. This finding aligns with the study conducted by Egbunike and Okoye (2017), who reported that IFRS adoption caused significant variations in tax figures and tax rates. The Nigerian government's decision to change the Value Added Tax (VAT) rate shortly after IFRS adoption could also be attributed to this variation, although

the impact on income tax appears to be more pronounced based on the financial statements. Similarly, Abedena, Omane-Antwasi, and Owiredu (2016) found that IFRS' implementation reduced the tax burden of companies in Ghana. Contrary to our outcome above, Idowu and Bello (2021) found no significant effect of IFRS adoption income tax expenses.

Hypothesis three:

H₁: IFRS adoption has an effect on the profitability of Nigerian banks

Table 5: Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Profit Before Income Tax	1838900.31	9	13025975.874	3612755.687
Profit Before Income Tax [IFRS]	2351787.69	9	13593973.953	3770290.010

Source: SPSS Ver. 22

Table 6: Paired Samples Test

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Profit Before Income Tax - Profit Before Income Tax [IFRS]	-512887.4	1432691.9	397357.2	-1378654.4	352879.7	-1.291	12	.221

Source: SPSS Ver. 22

The analysis of Table 5 reveals that the average profit before tax reported under Nigerian GAAP is 1838900.31, while the average profit before tax reported under IFRS is 2351787.69, with a sample size of 13 each. The mean difference between the two figures is -512887.585, as illustrated in Table 6. The p-value is higher than the error term of .05 (t -1.291, df. 12), which leads us to accept the null hypothesis that the adoption of IFRS has no significant effect on the profitability of Nigerian banks.

Discussion

In line with the result of our hypothesis test here, an earlier study by Nengzih (2015) also found no significant difference in Return on Assets (used to measure profitability), before and after IFRS adoption. In our study, the reported profit before tax showed no significant change before and after IFRS adoption. This could have resulted from tax-savings from the effect in tax rate as found in the previous test. Also, Adegbbite (2020) earlier reported that IFRS adoption reduced the tax payable of manufacturing companies. This is therefore in line with our findings as it is expected that a decrease in tax expense will lead to increase in reported profit.

In support of this, Barth, Landsman, and Lang (2007; 2008) opine that eliminating alternative accounting methods will improve accounting quality and reduce the chances of managers to manipulate earnings through window dressing. Their Comparative study analyzed the extent of window dressing amongst firms that voluntarily adopted IFRS and firms that used GAAP further revealed that IFRS firms had higher level of changes in cash flows, net income, and lower frequency of having small net income.

5.0. Conclusion and Recommendations

In this study, the post adoption effect of IFRS on tax was evaluated by comparing data before and after its implementation. The results lead the researchers to conclude that IFRS adoption has no effect on profitability and tax figures but only affected tax rates within its first 9 years of implementation. Based on this, the following recommendations are proposed for policymakers and regulators:

4. It is recommended that Nigerian government changes its tax regulations and rates to reflect the equivalent effect of IFRS implementation on tax rates.
5. Standards setters and users are encouraged to consider the tax consequences of implementing a particular standard, especially since tax laws vary across countries.
6. National professional organizations, such as ICAN and ANAN, should provide training and retraining on the application of these standards to keep members informed on recent developments. Additionally, educational institutions should integrate this topic into their curriculum to ensure that students have a proper understanding of the requirements and the post implementation effects. Policymakers and regulators should encourage companies that have adopt IFRS to provide more education and information to their investors during annual general meetings (AGM), regarding the impact of these standards on financial reporting quality, rather than just focusing on their application.

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IFRS DISCLOSURE GUIDELINES AND ACCEPTABILITY OF FINANCIAL REPORTING FRAMEWORK: EVIDENCE FROM LISTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract

This study examined the compliance rate of Nigerian banks with the guideline of IFRS disclosure requirements and the acceptability of financial reporting practices using the purposive sampling technique. Secondary data was obtained from the annual reports of the selected deposit money banks between 2014 and 2020, and a content analysis was adopted using the 2013 IFRS disclosure checklist and an acceptability index as a guideline. The ex-post facto research design and the static panel regression analysis technique were employed in this study. The outcome from the post-estimation test suggested that pooled OLS produced a better and more consistent result than the fixed and random effects estimates. The results revealed that disclosure quality on the statement of profit or loss and other comprehensive income, statement of changes in equity and statement of financial position are the indices for acceptable financial reporting practices in Nigeria. In line with this finding, this study concluded that disclosure quality is one of the major factors determining improvement in the acceptability of financial reporting practices in Nigerian deposit money banks. This study recommends that deposit money banks should ensure accuracy, consistency, and transparency in the adoption of a unified standard.

Keywords: IFRS; Disclosure guideline; Acceptability index; Financial reporting; Deposit Money Banks.

JEL Classification: M40

1.0 Introduction

The preparation and presentation of financial reports are necessary to enhance the supply of useful information that guides the economic and business actions of firms. The essence of preparing a financial statement extends beyond stating the financial position of an organization. Cash flows, value-added, and changes in equity within a specified period to which they relate are also among the information provided in the financial statement (Abata, 2015a).

A growing concern that is of commendable interest has been revealed from standard setters and stakeholders regarding how the general well-being of corporations is impacted by financial reporting (Atoyebi & Simon, 2018; Rezaee, 2003). This attention is a result of the economic implications related to financial information's importance as it impacts a firm's decision to sustain an attractive economic position in the capital market (Palea, 2013; Ball, 2006). It is opined that disclosure quality is only seen as being beneficial provided the financial figures epitomize the commercial value of the reporting entity for the accounting period concerning

the accuracy, comparability, reliability, relevance, timeliness and understandability, and an easy interpretation method (Ironkwe, Ordu, & Antonio, 2015; Adeuja, 2015).

The Nigerian experience over the years, especially in the financial sector, has constantly drawn the interest of concerned personnel to the banking industry, the final resort of quoted companies when their vision of sustaining the owner's strength in the long-term market sunk into the river (Amahalu, 2017). The events that followed the downtime of the financial institutions from 2007 to 2013, when about ten (10) banks run into debt (declared insolvent) and eight (8) of the banks' top officials were fired by the CBN, could rather be referred to as unfortunate (Umobong & Akan, 2015). Although the issue was apparent due to management's fraudulent practices and the global economic meltdown, which witnessed the immense fall of countries around the globe.

Nigeria's condition can be related to an upshot of dishonest accounting practices coupled with a lack of disclosure quality, like the scenario faced by other victims in the world like Enron and WorldCom. The consequence showed that affected firms witnessed expansion in the numbers presented annually for stakeholders but dying every single moment in reality because of false disclosures made (Abata & Amoo, 2020; Adeyemi & Asaolu, 2013). The aftermath of the above scenario was the failure of the capital market, which imposed threats and disequilibrium heavily on the economy. Furthermore, insecurity and fears heightened, and foreign equity holders left the space of the Nigerian investment market resulting in a tight market situation due to the high cost of business establishment and operation (Nwoye, Abiahu, Obiora & Chukwunonso, 2017; Hicks, 2014). The accounting profession was held accountable for its inability to protect the trust placed in them by investors by protecting their investment in the capital market. Investors' confidence in published financial statements faces a setback since the quality of disclosure lost value because of distrust (Ogunmakin, Fajuyagbe, & Akinleye, 2021; Ball, 2006). All available cash at the disposal of prospective investors was held back while foreign markets were opted for since it quenches their thirst due to its reliability and safer investment environment (Jibril, 2019; Hardy, 2013).

However, preceding events in the Nigerian financial sector have verified that ineffective and unreliable disclosure quality process available in the pre-IFRS era has posed a heavy threat to investors' confidence (Ebrahim, 2014). Increased request for high-quality and internationally comparable financial reports was a result of the globalization of world economic activities (Ekwe, Abaa, & Okolor, 2020). This is characterized by firms beyond borders operation, foreign affiliations in different forms, the establishment of foreign branches and subsidiaries, and correspondence financial relationships. All these are embarked upon to service their incremental forms of foreign portfolio holders (Herbert, Tsegba, Ohanele, & Anyahara, 2013). The

concomitant effect witnessed by the Nigerian economy was that foreign stockholders started valuing and prioritizing a single and globally accepted set of standards that guaranteed the comparability of financial reports across the world (Gellings, 2017).

The genesis of the principle-based set of universal standards called IFRS effective in April 2001 was possible through the intervention of the International Accounting Standards Board. The discovered best practices of IFRS are seen to have accomplished the convergence dream of coordinating all accounting practices across several nations by using a single reporting framework (Yahaya, Yusuf, & Dania, 2015). A series of reforms were implemented by Nigeria to ameliorate the challenges and restore balance in the security market. One such was the mandatory implementation of the new IFRS on the 1st of January 2012 (Soyemi & Olawale, 2019). The main research question at this juncture is to understand the extent to which Nigerian deposit money banks implement and comply with the IFRS disclosure quality requirements to aid the qualitative value of their financial reporting and its worldwide satisfactoriness as evidenced by the listing and recognition of six (6) Nigerian banks on the international list of one thousand (1000) world banks during the 2017 edition ranking of banks in the world?

Based on the foregoing, this study assesses if the rate of compliance of Nigerian deposit money banks with IFRS disclosure guidelines has enhanced the satisfactoriness and acceptability of their financial reporting practices.

This research work is arranged in five (5) sections. The first section focused on a general introduction, a problem statement, and the main research objective. The second section contained the conceptual, theoretical, and empirical review of literature, including discussion of the research gap. Section three (3) explains the methodology adopted by this study. The presentation, analyses, and interpretation of the results are revealed in Section 4, while the conclusion and recommendation are stated in Section 5 of this study.

2.0 Review of Literature

Conceptual Issues

Acceptability of Reporting Framework

The time taken by standard setters in the planning and implementation of a new framework will be a waste if it is not generally acceptable to the expected stakeholders. This is why the procedure for publishing a new standard is not an easy task for the participants involved. Initially, an exposure draft is usually issued which will show some preliminary contents regarding the proposed accounting standard (Adeyemi & Asaolu, 2013). Thereafter, the draft passes through several levels of stakeholders who add value to it before it metamorphoses into a standard (Jibril, 2019; Rahman, 1991).

In literature, several determinants impact the acceptability of a framework used by accounting professionals. According to Nwoye *et al.* (2017) and Hope (2003), processes involved in setting standards constitute a major factor that significantly affects its acceptance. Secondly, openness as a result of the due process followed by the standard-setting board guarantees acceptance from the stakeholders since the user will be rest assured that they will be dully carried along and a public hearing will be held to seek their opinion regarding the proposed standard (Ekwe *et al.* 2020; Wulandari, 2004). It should be noted that the essence of acceptability is to allow the standard to attain its main objective and receive public support (Atoyebi & Simon, 2018; Ali & Hwang, 2000). Practically, several proxies exist in the literature to measure acceptability. This includes changes in discretionary accrual, changes in foreign investment, and questionnaire administration (Alade, Olweny, & Oluoch, 2017; Sunder, 2002; Street, 2000). The variations in foreign investment and discretionary accrual are employed by comparing the figures in the current and past periods to calculate any significant changes that occurred. A significant change in positive directions signifies the satisfactoriness of convergence to IFRS and vice versa. As for the administration of the questionnaire, a structured instrument is designed and administered to stakeholder groups to measure their perceptions regarding the acceptability of IFRS as a financial reporting framework.

This study formulated an acceptability index like that of Saudagaran and Diga (2000) and Wulandari (2004) to capture the dependent variable from major stakeholders' angles.

International Financial Reporting Standards

IFRS is a body of global principles that provide knowhow and direction regarding how firms in a global economy could achieve the targets of comparability, transparency, uniformity, accurate recording, and public reliance in financial reporting (Adeuja, 2015; IASB, 2007; Tendeloo & Vanstraelen, 2005). Thus, failure on the part of the companies to implement and disclose the requirements of IFRS would result in inconsistency, a lack of transparency, and distortion in financial reports, which in turn leads to poor accounting practices and the spreading of financial information that is of less value to stakeholders (Mc Cahey & Mc Gregor, 2013). IFRS disclosure guidelines are a checklist that identifies required disclosures in line with the present effective accounting standard issued by the IASB (Amahalu, 2017). The guidelines can either be illustrative when a possible format for revealing a financial posting is made or supplemented in a situation of additional provisions on an accounting issue (Jibril, 2019; KPMG, 2013).

The standard setters have made IASB's conceptual framework available to epitomize and symbolize the detailed practices and requirements of a professional accountant. It is expected that non-misleading, relevant, and detailed information is readily provided and disclosed in the financial statement of the organization to guide all current and prospective investors in making an informed decision (Adeyemi & Asaolu, 2013). As a result of variability in information usage of major stakeholders and actors, IASB gave priority to the information requirement of key participants in the market for long-term funds (IASB, 2007). This led to the identification of investors being the most exceptional customers for details presented in the financial statement after the adjustment for the existing constraint in the system of information accessibility of companies (Akinleye, 2016; Elorrieta, 2002).

Relevance of information characterized by confirmatory or predictive value has since been an axiom in the field of accounting and financial reporting as the key reason for gathering information is to aid users in the process of decision-making (Mc Cahey, & Mc Gregor, 2013, KPMG, 2013). Consequently, all information submitted by the firm's managers is expected to be certified by the principle of faithful representation to assure market participants of its truthfulness (Yahaya *et al.* 2015). This indicates that, with faithful representation, the contents of the organization's reports must not be in rivalry with what is obtainable in the real world if the firms are assessed regarding their commercial and economic position. In the practical sense, today's stakeholders have shifted their attention to audits while little or no care was paid to the production of the accurate financial report (Musa, Salman & Ibrahim, 2021; Xu, 2014). This connotes that the channel of

transmission for financial statements should be all-encompassing through the involvement of all recognized participants and stakeholders in the procedure for certifying the completeness of a report.

Fair Presentation and Compliance with IFRS

Financial statements are expected to fairly present the worth, profitability, and cash availability of an establishment (Hassan & Musa, 2023). Agreement and compliance with IFRS pronouncements are presumed to generate an accurate and just outcome that provides the solution to investors' problems and challenges. (Ebrahim, 2014).

A financial statement is expected to contain a clear statement revealing that IFRS is being complied with. Organizations must also ensure that all standards concerning the operation of the firm must be duly followed (KPMG, 2013; Herbert *et al.* 2013). However, if compliance with IFRS is disclosed and the use of an inappropriate accounting treatment cannot be rectified either by disclosure of accounting policies or notes, organizations are expected to disclose confirmatory on fair presentation, conditional compliance statement, departure detail nature, justification on why IFRS might be misleading, method of treatment, and economic effect of the departure of such occurrence (Ogunmakin *et al.* 2021; Lepadatu & Pirnau, 2009). Accounting professionals named this concept as the "true and fair override."

Full Disclosure and Disclosure of Quality Information

The concept of confidence and trust form the bases upon which financial schemes and the banking sector rely (CBN's disclosure requirement, 2016). For the proper evaluation of financial institutions' status regarding whether their financial statements present a true and fair figure, all stakeholders' hand must be on deck to ensure useful information are only extracted from financial reports based on the full disclosure option (Amahalu, 2017). This invariably gives a good picture of the organization as current investors propagate good news about the company's integrity.

Full disclosure requirements are the mandatory financial items required to be presented in the rendition of their periodic returns to the regulatory bodies and the stakeholders. The process has to do with ensuring the integrity of data in the submission of reports to the depositing authority to enable them to attain the true financial position and performance of firms (Alade *et al.* (2017) Elorrieta, 2002).

Users of financial reports are only able to validate the direction of information presented by the banking sector if the disclosure made is considered full. This will shed more light on who the message contained in the financial statement is meant for and who the banks have not captured in their report. Financial institutions

may lose customers' patronage and trust when they pay little attention to the delivery of required financial details (Xu, 2014). Consequently, accurate information is expected to guarantee a downward trend in reputational risk while uncertainty in market parameters falls to the barest minimum.

Musa, Salman, Amoo and Subair (2020) and Rezaee (2003) stressed the significance of corporate governance and internal control system in ensuring all compositions of financial statements are reliably presented to assure users of the validity of full disclosure statements made by deposit money banks. Hence, the resources needed to ensure the smooth running of a good internal control system should be provided by the directors of the firms (Hicks, 2014). The initial provision of resources to sustain the controls in place without subsequent maintenance of the system will expose the control scheme to setbacks and inadequacy (Abata & Amoo, 2020). Corporate governance is a scheme for managing, directing, and monitoring a corporation to create shareholder value while protecting the interests of other stakeholders, specifically through the release of excellent reports and expected company details. Achieving the publication of excellent and detailed information should be seen by all organizations as a cultural value that must be communicated to all concerned stakeholders at all levels and at all sections (Hardy, 2013).

Theoretical Discussion

This study is guided by information theory, as the financial reporting framework is central for monitoring purposes (Ironkwe *et al.* 2015). Information theory was credited to Claude Shannon, who gave an exegesis relating to the components of the classical communication system in 1948. The theory leveraged the concepts of bad and good news to assume that a highly sophisticated system of reporting does not guarantee a faster channel that operates above set constraints (Aftab, Cheung, Kim, Thakkar, & Yeddanapudi, 2001). Secondly, the theory asserts that reproducing information at a stage is a fundamental problem as the qualitative value initially disclosed reduces in relation to the distance of the channel of transmission (Gellings, 2017).

This theory is relevant to the field of financial reporting framework since it describes and measures the quality and quantity of information contained in a report such as a financial statement. Another relevance of the theory to the financial statement is that users' information is expected to assure predictability, stability, and acceptability of firm performance (Mc Cahey & Mc Gregor, 2013). This implies hidden information is made available and is utilized in variable prediction. Secondly, some factors affecting information value are required to be managed by stakeholders in order for stability to be attained. These factors are summarized by

information theory as capacity, uncertainty in sources, and transmission in a highly constrained environment (Palea, 2013).

Applying this relevance to this subject matter has implications: firstly, balanced information is required between reporting framework stakeholders to guarantee reliance on the supplied financial statement. Secondly, disclosure of both the bright (good news) and dark sides (bad news), which invariably reveal the commercial substance of the company at the reporting time, is needed to assure investors of safe investment (Elorrieta, 2002). In conclusion, the presence of a corporate governance mechanism in the firm aids in the monitoring of financial information, which invariably reveals the acceptability of the accounting framework (Zango, Kamardin, & Ishak, 2015).

Empirical Evidence

A study was carried out by Soyemi and Olawale (2019) which involved the examination of the connection between IFRS and the quality of financial statements, with the focus of the study being Access Bank Plc. The ordinary least square regression revealed a substantial improvement in financial statement acceptability in the post-IFRS adoption period. Atoyebi and Simon (2018) provided dual and conflicting evidence regarding the impact of IFRS adoption on financial reporting practice in Nigeria. The study accounts for financial reporting practice with the aid of loan loss provision and capital management. Specifically, the valuation of loan loss provisions was regressed on earnings management and capital management with the use of multiple regression analysis. The data collected was extracted from the annual reports of fifteen (15) deposit money banks and spanned from 2006 to 2016. Ex-post facto research design was adopted by the study. At the end of the research, there exists a significant positive association between loan loss provisions and earnings management for both the pre- and post-IFRS eras, signifying a situation of no improvement in accounting practice. On the other hand, an insignificant link exists between capital management and loan loss provision in the pre- and post-IFRS periods.

With the aid of the content analysis method of research, Nwoye *et al.* (2017) made an empirical establishment of the association between the IFRS compliance rate and its contribution to the acceptability of a firm's global reporting practice in Nigeria. Purposively, all nine (9) highly placed Nigerian banks in the year 2015 were selected by the study. The study went further to collate both the primary and secondary sources of the data set to attain the research objective. In addition, seventy-seven (77) items of disclosure were utilized from the IFRS disclosure list. After subjecting the model to a series of statistical estimations and analyses such as analysis of variance (ANOVA) and least square regression technique, it was evidenced that the acceptability

of the financial reporting framework was sufficiently improved by the rate of compliance. Consequently, all exogenous variables contributed significantly to the overall outcome of the regression.

To ascertain the concomitant effect of the novel recording scheme as linked to the local Generally Acceptable Accounting Standard (GAAP), Yahaya *et al.* (2015) assessed the influence of IFRS compliance on the annual financial report of twenty-one (21) Nigerian deposit money banks utilizing the logistic regression method of analyses on the collated data ranging from 2004 to 2013, they evidenced that IFRS compliance positively influenced the overall profitability and worth of Nigerian banks. Zango *et al.* (2015) studied the level of compliance attainable in the published annual financial report of fourteen (14) quoted Nigerian deposit money banks based on IFRS 7 provisions for the accounting years 2012 and 2013. Through an obligatory disclosure index method, it was seen that banks' level of compliance with IFRS 7 improved between the two years. They opined that the possible prevalence of additional enlightenment programs which improved IFRS awareness among bankers might likely be the cause of the improvement in acceptability.

Abata (2015b) surveyed fifty (50) auditors in KPMG employing a five-point Likert scale-structured questionnaire to establish a comparative influence of Local GAAP and IFRS on reporting quality in Nigeria. The chi-square methodology was applied in ascertaining the respondent's opinion relating to the study objective. The finding evidenced that a larger ratio of respondents asserts that better information for regulators is guaranteed under IFRS than local GAAP. They insinuated that comparability and transparency of financial reporting have substantially witnessed an increment in the IFRS regime. The differences in accounting quality in the pre-and post-IFRS era of listed manufacturing firms in Nigeria were focused on by Umobong and Akan (2015). According to the ordinary least square (OLS) regression method employed by the study for the period ranging from 2009 to 2013, IFRS compliance was believed not to have improved the quality of accounting in the quoted cement and brewery firms in Nigeria. They juxtaposed and argued further that the practice of earnings management in the post-IFRS era substantially increased. Additionally, their evidence shows that the relevance of book and earnings values is not much in the new reporting framework as timely loss recognition was significantly higher in the IFRS regime.

In a study conducted by Saidin and Danrimi (2014), a questionnaire was addressed to three hundred (300) respondents to empirically observed the influence of enforceability and acceptability of IFRS on the global accounting convergence from the views of preparers and users. The study applied a convenience sampling method in the selection of stakeholders. The estimations from descriptive statistics, factor analysis, correlation matrix and ordinary least square depicts that acceptability of IFRS framework is positively linked with global convergence. In a study of thirty-five (35) countries across the globe, Wulandari (2004) tested the

association between value relevance of accounting earnings and accounting standards from the perspectives of quality, acceptability, and enforceability. This study used a sample selection approach based on countries generally acceptable accounting principle (GAAP), responses from multinational accounting firms and assessment of acceptability index criteria. The data collated was subjected to various preliminary estimation tests, univariate analysis, ordinary least square regression, and post estimation tests. The empirical findings evidenced that the value relevance of accounting earnings significantly impact quality of accounting standards positively. Conclusively, the study supports the motion that says accounting disclosure requirements are strongly associated with acceptability of reporting framework.

Research Gap

Numerous studies have been carried out on the IFRS disclosure guideline and variables such as firms' performance, value relevance, reporting practices, and stability. However, few of these studies consider whether disclosure guidelines exert a significant influence on the acceptability of financial reporting frameworks. The work of Wulandari (2004) failed to capture some developing countries as the study focused on local GAAP and was conducted in their pre-IFRS era. In the empirical findings of Saidin and Danrimi (2014), the instrument used in the collection of data focused more on preparers and users but neglected other stakeholders of financial statements. The evidence provided by Nwoye *et al.* (2017) may not be totally relied upon for two reasons: first, it does not measure acceptability from the perspective of major stakeholders, and second, the disclosure index employed failed to classify items of disclosure based on items in the financial statement. Consideration of the work of Atoyebi and Simon (2018) is not an option, as the evidence provided is conflicting due to differences in the outcomes of the proxies for financial reporting practices. This study stands out from previous literature in three aspects. Firstly, it employed the use of acceptability indexes, which previous countries specific work failed to use. Secondly, the disclosure index utilized considers the heterogeneous nature of separate items in the financial statement. Conclusively, a robust static panel method of analysis was embarked upon by this study, which previous works had not used.

3.0 Methodology

The population of this study comprises a total of twenty-seven (27) deposit money banks listed in the Nigerian Exchange Group (NXG) as of December 2021. This study covered the annual financial statement of six (6) deposit money banks in Nigeria ranked among the one thousand (1000) global banks for the 2017 financial year. The selected deposit money banks also formed the list of domestic systemically important banks (SIBs)

in Nigeria, as they account for a major percentage of the industry's total assets, total deposits, and total loans. These deposit money banks are regarded as too big to fail as they comply with the regulatory requirements of relevant laws and regulations.

The period of this study is restricted to seven (7) years of publication and the financial report in line with IFRS. The composition of these highly ranked financial institutions is Access bank, Eco bank, First bank, Guarantee Trust Bank, United Bank for Africa, and Zenith bank. This study purposively samples seven (7) years of financial statements for content analysis. The year ranges from 2014 to 2020.

To actualize the objective of this study, a three (3) point scale of rating items disclosed in the financial statement was devised based on twenty-four (24) items. The scale of rating is graded 1 if the disclosure is weak (WD), 2 if the disclosure is fair (FD), and 3 if the disclosure is strong. This was applied to justify the accurate positioning of deposit money banks regarding the quality of disclosure made in their annual financial statement. The explained variable of this study was proxied with the aid of an acceptability index designed in line with the previous studies to capture the level of acceptability allotted by several stakeholders to the IFRS convergence. This study applied a dummy grading system by allocating one (1) to the presence of the index and zero (0) if vice versa.

Furthermore, this study graded the forty-two (42) sampled financial statements in line with the three-disclosure yardsticks explained above. The aggregate outcome extracted was subjected to the static panel regression analysis, to establish the link between the endogenous variable and the exogenous variables. These variables are disclosure quality of the statement of financial position, disclosure quality of the statement of profit or loss and other comprehensive income, disclosure quality of the statement of cash flow, disclosure quality of the statement of changes in equity, and acceptability of the financial reporting framework. The model used for this study was like that of Nwoye *et al.* (2017) and Zango *et al.* (2015). This model is stated thusly:

$$AFRF_{it} = \beta_0 + \beta_1 DQFP_{it} + \beta_2 DQPL_{it} + \beta_3 DQCF_{it} + \beta_4 DQCE_{it} + U_{it}$$

Where: AFRF = Acceptability of financial reporting framework; DQFP = Disclosure's quality of financial position; DQPL = Disclosure's quality on profit or loss and other comprehensive income; DQCF = Disclosure's quality on cash flow; DQCE = Disclosure's quality on changes in equity; β_0 = Intercept parameter; $\beta_1 - \beta_4$ = Slope parameters; $U_{it} = \mu_{it} + \lambda_{it}$; μ = Stochastic error term; λ_{it} = Cross-sectional differences

The null hypothesis (H_0) of this study is that the disclosure quality of financial statements has not improved the acceptability of the financial reporting framework in Nigerian deposit money banks, while the alternative hypothesis (H_i) states that the disclosure quality of financial statements has improved the acceptability of the financial reporting framework in Nigerian deposit money banks.

4.0 Data Presentation and Discussion of Results

The data utilized by this study were extracted from both the disclosure and acceptability indices for the years under review. It should be noted that both indices were all taken from the annual reports of the selected companies available on the Nigerian exchange group. This study employed both descriptive and inferential methods of analysis on the collected data.

Table 1: Descriptive Statistics

Variable	Observation	Minimum	Mean	Standard Deviation	Maximum
AFRF	42	5.0000	7.1505	2.1747	9.0000
DQFP	42	8.0000	10.8102	2.7419	14.0000
DQPL	42	6.0000	8.2601	1.2141	16.0000
DQCF	42	5.0000	7.1427	1.3495	9.0000
DQCE	42	7.0000	8.0231	2.0025	13.0000

Source: Author's Computation, 2022

Table 1 depicts the descriptive statistics of all the model variables in this study. The parameters displayed are composed of the minimum, mean, standard deviation, and maximum values of all the variables in this study.

Multicollinearity Testing

Multicollinearity among the model-independent variables poses greater challenges to the accuracy of the regression estimator. To produce an outcome that is robust to the problem of multicollinearity, this study employed the variance inflation factor (VIF) to screen the independent variables against the ailment of higher correlation amidst model variables. The importance of this test should not be overemphasized as the static method of regression assumes its absence. An ordinary assumption without further justification may have a serious aftermath effect on the reliability of this study outcome.

Table 2: Variance Inflation Factor

Variables	VIF	I/VIF
DQFP	4.01	0.56
DQPL	4.54	0.73
DQCF	3.06	0.54
DQCE	3.93	0.64
Mean VIF	6.14	

Source: Author's Computation, 2022

Table 2 depicts the VIF outcome including its inverse result for all the exogenous variables of the models. By the general criteria, any independent variable whose VIF ratio exceeds 0.1 or 10% is highly suffering from higher association among independent variables, and vice versa. From table 2, all the variables have a VIF that is less than 10, implying their non-collinearity.

Model Estimation and Selection Procedure

This study made a comparison among suitable models of this study with the aid of post estimation test performed. The Breusch and Pagan Lagrangian Multiplier (BP-LM) test conducted by this study supports the hypothesis of zero random effect and affirmed the superiority of the pooled OLS model over the fixed and random effect models. This is justified by the chi-square outcome of 0.13 and a p-value of 0.36, This implies that only estimates from the pooled OLS model are explained to interpret the relationship between the disclosure quality and acceptability of financial reporting.

Table 3 Static Panel Regression Result

Variable	Pooled OLS		Fixed-Effect	Random-Effect
Constant	3.4326 (0.003) *		7.1035 (0.000) *	4.1630 (0.012) *
DQFP	0.3449 (0.037) **		0.7158 (0.028) *	0.2163 (0.003) *
DQPL	0.3423 (0.045) **		0.4163 (0.130)	0.3891 (0.072) ***
DQCF	-0.1992 (0.935)		-0.4725 (0.059) ***	-0.3492 (0.318)
DQCE	0.4945 (0.072) ***		0.6846 (0.093) ***	0.2859 (0.048) **
Model Statistics				
R ² / Within	0.79		0.43	0.38

F Stat. / Wald Chi²	351.59 (0.000) *		10.5 (0.000) *	14.2 (0.000) *
BP-LM Test	0.13 (0.36)		-	-

Note *, ** and *** denote statistically significant at 1%, 5% and 10% respectively. Also, p -values are reported in parentheses.

Results and Discussion of Findings

Table 3 shows the linear relationship between the deposit money banks' compliance rate with IFRS guidelines of disclosure and whether the Nigerian accounting reporting practice is acceptable. With the use of panel regression analysis, the table displays the outcome of the pooled OLS regression analysis, fixed-effect analysis, and random-effect analysis.

The significance and sign of the independent variables reveal that disclosure quality on the statement of profit or loss, and other comprehensive income, statement of changes in equity and statement of financial position agree with a priori expectations affirming a positive sign for all three variables. This suggests that there is a direct relationship between the variables and financial reporting acceptability in Nigeria. On the other hand, the quality of the disclosures on cash flow did not concur with a priori expectations, indicating a negative sign, and meaning a downward impact on the acceptability of the financial statement.

However, when the coefficient magnitude is considered by this study, disclosure quality on the changes in equity, financial position, and financial performance has a significant effect on the satisfactoriness of financial reporting practices in Nigeria, as indicated by 0.3449, 0.3423, and 0.4945 coefficients with 0.037, 0.045, and 0.072 probability values at 5%, 5%, and 10% significance criteria, respectively. This means that if the quality of disclosures about the statement of financial position, statement of profit or loss, and other comprehensive income, and statement of changes in equity gets better (or worse), it will make financial reporting practices in Nigeria more acceptable (or lesser-acceptable).

The null hypothesis formulated in section three (3) of this study was that the rate of compliance of Nigerian deposit money banks with IFRS disclosure rules does not have a significant impact on improvements in the acceptability of financial reporting practices in Nigeria. At the 5% level of significance, this study found that the quality of compliance of Nigerian deposit money banks with the IFRS disclosure quality principle has a significant impact on improvements in the acceptability of financial reporting practices in Nigeria. Therefore, the alternative hypothesis is accepted. The result of this study is in line with Soyemi and Olawale (2019), Nwoye *et al.* (2017), Yahaya *et al.* (2015), Zango *et al.* (2015), and Abata (2015b), who suggest that compliance of Nigerian firms to IFRS disclosure guidelines has a direct impact on improvements in the acceptability of financial reporting practices in Nigeria. This may be the result of more stringent policies

adopted by corporations in the convergence and application of IFRS and stronger control over the firm's internal environment. Surprisingly, this study provides justifications against Atoyebi and Simon (2018) and Umobong and Akan (2015) who suggested IFRS has not brought progress in the acceptability of financial statement. Finally, the results of this study provide justification in support of information theory, which opines that quality information transmission mechanism like IFRS ensures the sustainability of giving both sides of financial news. The reason for this is not far-fetched, as corporate governance mechanisms are highly regarded by most Nigerian firms, especially in the financial services sector.

5.0 Conclusion and Recommendation

The main objective of this study is to elucidate whether the compliance rate of deposit money banks to IFRS disclosure guidelines brought an appreciable improvement in the acceptability of financial accounting reporting practice in Nigeria. Based on the findings, this study concludes that improvement in the acceptability of financial reporting practices in Nigeria is affected by the quality of compliance of Nigerian deposit money banks with IFRS disclosure guidelines. This means that an improvement in the acceptability of financial reporting practices in Nigeria is caused by a variation in the quality of compliance of Nigerian banks with IFRS disclosure quality guidelines.

This study contributes to the existing literature on IFRS disclosure guidelines from two (2) angles. Firstly, the contents of the IFRS disclosure index were categorized in line with the composition of the financial statements of listed companies to determine which of the components of the financial statements guaranteed the acceptability of the financial reporting framework. Also, acceptability was captured by this study through the index extracted from firms' financial statements, while consideration was made for each stakeholder group to be represented. Future studies should focus on new disclosure guidelines, the comparison between compulsory and voluntary disclosure, and the causal link between disclosure guidelines and sustainability reporting.

In line with the findings of the study, it is recommended that Nigerian deposit money banks should ensure accuracy and consistency in the application of the requirements of IFRS. These accompanied qualities will present the new standard to the stakeholders in a pleasing mood which ultimately guarantees acceptance. In addition, a transparent and reliable practice should be enforced through the maintenance of a highly graded accounting and internal control system that is in consonant with the rules of IFRS. This makes it easy for

accounting information users to place maximum reliance on the published financial statement used in assessing firm performance and making an informed decision.

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Appendices
Content Analyses Score Chart

S/N	IFRS DISCLOSURE REQUIREMENTS ADAPTED FROM KPMG (2013)	3	2	1	TOT
		SD	FD	WD	
STATEMENT OF FINANCIAL POSITION					
1.	Separate reporting of liabilities and asset's components of deferred taxation in the statement of financial position.				
2.	Report on contingent liabilities, contractual requirements not recognized and disclosures relating to other non-financial items.				
3.	Bases of measurement and method of charging depreciation for property plant and equipment (PPE) were reported, including depreciation rate and useful life.				
4.	Reporting on investment property was disclosed, including specific method applied between cost and fair value model.				
5.	Ensuring that financial lease's net carrying amount is reported in the statement of financial position.				
6.	Reporting in detail the requirements for treating research cost, including the bases upon which development costs are capitalized.				
STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME					
1.	The nature of basic and diluted earnings per share (EPS) are all disclosed even in the situation of loss per share (LPS).				
2.	The disclosure of earnings per share (EPS) is consistent annually, and it is reported for all yearly statement of profit or loss, and other comprehensive income.				
3.	All provisions made are disclosed, including provisions made on differed taxation, share-based payment, grants from governments and how revenue is recognized.				
4.	All line items reported in the statement of profit or loss and other comprehensive income are justified with information displayed in the notes to the financial statements.				
5.	Management assumptions regarding the future, and the techniques used in estimating items with uncertainty are all disclosed at the end of the accounting reporting period.				
6.	With respect to intangible assets that possess finite useful life, disclosure is made on period of amortization and method of calculating amortization charges, and whether infinite intangible assets have been tested for annual impairment.				
STATEMENT OF CASH FLOWS					
1.	Interest received and paid, and dividend receive and paid are all reported on cash flows' dividends and interests.				
2.	Disclosure of cash and cash equivalents, and presentation of segment reporting are all made.				
3.	Cash flows activities are classified into the three major compositions of operating, investing and financing.				
4.	All borrowings are appropriately disclosed and classified.				
5.	The extent and nature of government grants recognized in the financial statements are reported.				
6.	The financial report shows prior years comparative figures including notes to the account.				

STATEMENT OF CHANGES IN EQUITY.				
1.	The statement disclosed the total comprehensive income figure and classified into those attributable to owners of parent and non-controlling interest (NCI).			
2.	The impact of retrospective application or restatement recognized.			
3.	Separate presentation of individual material class of similar items.			
4.	Reconciliation between carrying amount at the beginning and at the end of the financial reporting period for all equity compositions.			
5.	All reports relating to amount of transaction cost accounted for as a deduction from equity are separate shown in the accounting period.			
6.	Show the monetary figure of declared and proposed dividend prior to the authorization of financial statement but not shared and distributed to equity owners.			

Scoring Guidelines

- > **Score 3** if majority of the IFRS compliance rate is high. i.e., comply with majority items
- > **Award 2** if compliance with IFRS was stated but not effected practically. i.e., fair compliance
- > **Score 1** if no compliance was made.

FORMULATED ACCEPTABILITY INDEX

S/N	Items	Score
1.	Increase in number of foreign investors.	
2.	Increase in number of bank customers.	
3.	Increase in total deposit components of liability.	
4.	Increase in retained earnings.	
5.	Availability of functioning audit committee.	
6.	Openness in governance and risk management scheme.	
7.	Favorable audit opinion.	
8.	Improvement in training and publicity program on accounting framework	
9.	Consistent board meeting.	
10.	All IFRS standards and interpretations are adopted	
11.	Amendments were made to new standards	
12.	Enforcement of whistle blowing procedure	

Presence of the above is scored 1, while absent is scored 0

BLOCKCHAIN TECHNOLOGY: IS IT TO MODIFY OR ELIMINATE THE AUDITING PROCESS?

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Abstract

Blockchain is a digital ledger that allows capturing of transactions conducted among several parties on real-time and serves as a decentralized database where each participant keeps an identical copy of the ledger. No intermediaries are needed to settle transactions and validation are performed by multiple users. Once a transaction has been accepted by the network, all copies of the ledger are updated. Consequently, this means that blockchain, polished with current technical developments, processes and service innovation such as smart contracts and widely held registers have the potential to significantly change traditional auditing process and control activities. In this study, we reviewed several existing literatures by some scholars on this new technology to ascertain whether its materialization is for modification and/ or absolute elimination of the entire auditing process, and, if so, what will be the impact on the audit profession, including new risks as regards change in processes as well as new prospects and/or opportunities.

Keywords: blockchain technology; auditing process; digital ledger; smart contracts

1.0 Introduction

A blockchain is an automated ledger created to lock up transactions carried out by several parties in a network. It is an internet based, peer-to-peer, detached ledger which includes all transactions since creation. According to the Chartered Professional Accountants of Canada (CPA Canada), blockchain technology has the potential to impact all record keeping processes, including the way transactions are initiated, processed, authorized, recorded, and reported. They further explained that independent auditors will need to understand this technology as it is implemented by their clients, for example, methods for obtaining sufficient and appropriate audit evidence will need to consider both traditional stand –alone general ledgers as well as blockchain ledgers. Blockchain also has probability for greater consistency and precision in reporting and accounting which could facilitate more efficient data mining and analysis.

Blockchain Technology, like any other technology, has developed with time to be what it is today. The first generation blockchain platforms that were developed was a display in the potential of the technology though it lacked the major features that might be used to sustain cases afar financial services applications. The key flaws were restricted throughput, slow transaction authentication, deferred settlement finality, no privacy and high energy consumption in mining. The second generation blockchain focused on building a flexible environment that could be used to maintain the operation of decentralized applications. The major setback for this second generation blockchain was interoperability between different platforms, imperfect privacy, constrained throughput, (Bitcoin network-7 tps, Ethereum 15 tps, VISA 24,000 tps), interoperability, control, and sustainability. The third generation, which is based on the Directed Acyclic Graph (DAG) principle, presents enterprises with new prospects to implement Blockchain technology at a large scale due to its ability to overcome the flaws of the earlier generations. The major recompense is higher throughput which enables

faster transactions (approx. 10,000 tps), interoperability eliminating siloed performance and enabling industry-wide implementations, enhanced security, very cost-effective, minor energy consumption due to miner-less operations, and improved sustainability. In summary, the third generation blockchain platforms were developed overcoming all the challenges of the earlier generation platforms.

While blockchain initially acquired interest because of its ability to be anonymous, such as in the case with cryptocurrencies like Bitcoin, the real demand of the technology may be due to the complete transparency the system offers. In the words of Popovski and Soussou, (2018), many have found that the core blockchain technology has relevance in an ever-increasing number of applications in nearly every industry. In 2013 for example, Ethereum introduced blockchain in the form of “a decentralized platform that runs smart contracts.” It explained that blockchain “enables developers to create markets, keep records of debts or promises, move funds in accordance with instructions and many other things that have not been invented yet, all without a intermediaries or counterparty risk.” While Bitcoin is simply a currency, Ethereum “is a ledger technology that companies are using to build new programs.” It is one of the first expansions of blockchain technology outside of currency.

1.1 Problem Statement

The industrial insurgency and the resulting blast in growth of business activities was the reason for widespread adoption of auditing methods. The audit engagement starts by the initial establishment of a contractual agreement between the auditor and the audited, which usually proceeds with a risk assessment and formulation of an audit plan by describing the scope and objectives of the audit. Subsequently, auditors gather and analyze audit evidence and form opinions with respect to internal controls as well as consistency of the information provided by management. At the expiration of the engagement, auditors present a formal report expressing their opinion. This approach shows the twentieth century methodology which is characterized by high costs and noteworthy delays due to information collection, processing, as well as reporting. This said, these historical costs and delays are often not the standard currently. Presumably, in the current business realm, transactions are often posted and cumulated such that they can provide fair and immediate response to relevant stakeholders. Additionally, academicians and practitioners have already acknowledged this information shift and developed several solutions that is most suitable, and which will portray the present business environment. Amongst these solutions developed were blockchain platforms, hence, the essence of this study.

1.2 Research Questions

At present, to the best of our knowledge, there is no available empirical data on blockchain as it relates to auditing process because, the platform is very new to most auditing firms including the “big four”, hence the reason for only review of related and existing literature.

1.3 Research Objectives

The general and specific objective of this study is to review and ascertain whether blockchain technology has emerged to help modify the traditional auditing process or to eliminate the process entirely.

2.0 Literature Review

A blockchain is essentially a public ledger, where groups of transactions or events are recorded and stored in a chain-like data structure (Simoyama., Grigg., Bueno., & Oliveira 2017). Professional or financial auditors, nowadays in business environment, are the trusted professionals that ensure the reality of transactions, authenticate their evidence as regards the accuracy, completeness as well as the presentation of related information in financial statements. These objectives are achieved by auditors by having a good knowledge of the business of the client including their IT infrastructure and systems relevant to financial reporting and internal controls in place. The main purpose of a financial audit is to enhance the degree of confidence, trust, and or assurance of financial statements users. The Enron scandal in 2001 undermined the public trust on the audited financial statements, and it is just in its recovery stage lately, (Mueller, Carte, & Whittle, 2015; Fearnley., Beattie., & Brandt 2005; Zabihollah, 2004). To awaken this trust, novel regulations as well as accounting and auditing standards have been established, and this has added to complexity, which has increased the cost of control activities and reporting for companies.

At present, blockchain technology allows business enterprises to make digital interactions or record transactions in a way that is transparent, secure, auditable, efficient, and highly resistant to interruptions (Schatsky & Muraskin, 2015). Those features could not only decrease the accounting, auditing and compliance costs but also transform and facilitate the work of auditors (Spoke, 2015). There is this belief that such technology will enable more proficient access to data and conclusion of financial audit. This is because assets and or documents are referenced by a ledger entry, which helps to simplify the work of auditors and accounting professionals (Schatsky & Muraskin, 2015), thus, reducing the manual work (Drane, 2016) while also making complete transaction traceability straightforward. Axelsen, Green, Coram, and Ridley, (2017), opine that technologies at the audits are more sophisticated, and blockchain with its technical features and

distributed systems, is a typical example of complicated technology. If the role of auditors is less, and less to audit the financial data than to audit the blockchain, and confirm that it is properly implemented, then auditors are expected to understand those features thoroughly. They will have to widen their technical skill set to master coding, hashing, cryptography, and work on their soft skills. Audits can come in many forms. It can be in the form of financial audits, compliance, and regulatory audits. The interesting thing is that blockchain technology can be applied to all of them.

The Three Indispensable Features of Blockchain Technology

The unique values and indefatigable features of blockchain technology have made it gain lots of admiration. The following are the three major features of blockchain that make the platform indispensable. This includes Decentralization, Transparency, and Immutability. Blockchain does not belong to nor managed by a single entity, hence, it is decentralized. Elsdon., Manohar., Briggs., Harding., Speed., and Vines (2018), opines that in a decentralized system, the information is not stored by one single entity but by everyone in the network. In a network that is decentralized, every interaction with a friend is done directly without going through a third person, and this was the main dogma behind Bitcoins. In other words, you are solely in charge of your money, you do not need a bank. In essence, you can make a transfer without going through the intermediary.

The blockchain is transparent, this makes it very possible for parties involved in a transaction to track their data if they wish. Transparency is one of the most fascinating and at the same time, misunderstood concepts in blockchain technology. Here, a person's identity is hidden through intricate cryptography and characterized only by their public address. So, while the person's real identity is sheltered, you will still see all the transactions that were done by their public address. This echelon of transparency has never existed before within a financial system. In the words of Batubara., Ubacht., and Janssen (2018), the blockchain platform adds that extra, and much desirable level of accountability which is required by some conglomerates.

Immutability as one of the indispensable features means that once a transaction has been recorded, it cannot be interfered with. Miraz and Ali (2018) suggest that it will be very valuable for financial institutions because with blockchain platform, people will not cook the books and/or swindle around with company's financial records. It has been observed that the reason why the blockchain gets this property is that of cryptographic hash function, which takes an input string of any length and gives an output of a fixed length. This becomes decisive when you are dealing with a huge amount of data and transactions. So basically, instead of remembering the input data which could be colossal, you can just remember the hash and keep track. The

main feature of this cryptographic hash function is to have inundation effect. In other words, where there is even diminutive change in your input, the changes that might be revealed in the hash can be humongous.

Major Benefits of Block Auditing Over Traditional Auditing

Improvement of accountability and facilitation of audit assignment is one of the major benefits of blockchain technology. The merits of external audit capability of blockchain support, Web 2.0, which changes applications from being service centric to user centric. When using blockchain, accountability is certified as a part of timestamp traditional by the system. This allows every user to confirm whether the service operates in the proposed way or not. If the service fails the certification process, then the user has proof of cruel behavior which could be used to hold the service accountable. One other notable attribute of blockchain is to confirm authenticity of every recorded statement. No disclaimer is achieved with a blend of digital signature and public key infrastructure. The public key infrastructure is very essential to frustrate anyone, including the blockchain maintainers, from backdating the transactions and to ensure that certification of authenticity is not broadly dependent on security of utilized public key system. Eliminating uncertainty benefits the economy by streamlining it, facilitating greater confidence in decisions. The permanent record of a blockchain reduces the likelihood of financial crime, thus making records more trustworthy. It will also need to work quicker, more efficiently and have minor operating costs. Blockchain applications make it feasible to conduct continuous auditing due to real-time access to transaction records (Smith 2017). With resources freed from traditional evidence collecting and testing, audit firms should consider applying appropriate data analytics in blockchain, and expand advisory services such as control design, change management, and blockchain governance (ICAEW 2017). The big four themselves foresee that the cost and time necessary to conduct an audit would decline considerably (Allison, 2015; Tysiac, 2017). It seems therefore reasonable to expect a significant increase in the commercialization of financial audit services (Anderson, 2017) and a corresponding decrease in audit costs, for instance, Ernst & Young (EY), announced the launch of Ops Chain, a set of applications and services to assist firms leverage blockchain technology to improve process and, hence, drive growth (Alarcon, 2018). The change in the accountancy profession standard will also speed up, for the fact that not only the audited but also the audit firm use more and more diverse kinds of technologies to accomplish their audit assignment. For example, KPMG has aligned with IBM Watson to begin automating and reformation of audit and tax processes (Smith, 2018), other types of artificial intelligence systems can also be used to reconcile data, including drones that can assist in inventory counts.

3.0 Application of Blockchain in Accounting and Auditing Profession

Blockchain offers drastically new ways to record, process, and store financial transactions and information, and has the possibilities of fundamentally changing the landscape of the accounting profession and reshaping the business network. In the accounting profession, using blockchain provides lucidity over assets ownership and existence of obligations, and could spectacularly advance effectiveness. Blockchain is the first change in how financial records are created, kept, and updated. This is because blockchain records are distributed among all their users rather than having a single owner. Even with no central owner and with time lags between all the users, yet a single, agreed-upon version of the truth disseminates to all users as part of a permanent record, and this is the genius of blockchain approach. This, as matter of fact creates a kind of 'universal entry bookkeeping', where a single entry is shared identically and permanently with every party to the transaction. Blockchain is not regarded as a solitary technology, but rather a practice or etiquette (i.e. a way of doing things), for recording transactions. It is an advantageous model for several reasons. For instance, in a market with many transacting parties, it could remove the need to reconcile unrelated ledgers. Blockchain being distributed between all users also removes outages and the cost of having to pay a central authority to preserve the precision of the ledger. Every participant in the ledger can trace all previous transactions, allowing for increased transparency and self-audit.

In summary, blockchain has the probability to boost the accounting profession by reducing the costs of retaining and reconciling ledgers and providing total certainty over the ownership and history of assets. It could also help accountants gain clarity over the existing resources and obligations of their organizations, and also free up resources to focus on planning and valuation, rather than recordkeeping. Blockchain will enable accounting to be more efficient as a result of increased trust in the information available and the reduced time spent in reconciling and disputing records with other parties. This will lead to greater focus on the critical aims of the accountancy profession which includes interpreting the financial meaning of every transaction, and making available information to sustain better decisions. Organizations or companies implementing blockchain with smart contracts may enhance consent effectiveness and risk management. In the words of Pilkington (2016); Wild., Arnold., and Stafford (2015); OECD (2018), smart contracts could facilitate organizations' adherence to various laws and regulations. More importantly also, pre-defined alerting system could be implanted in blockchain to identify doubtful transactions on time. Blockchain could also be used to scrutinize an organization's financial strength and support decision-makers to design a new control system (Psaila 2017).

4.0 Blockchain, to Modify or to Eliminate

To accurately audit a company with significant blockchain-based transactions, the focus of the auditor will definitely shift. There is diminutive need to substantiate the accuracy or existence of blockchain transactions with external sources, but there is still ample attention to be paid to how those transactions are documented and recognized in the financial statements, and how critical elements such as valuations are decided. In the long run, more and more records could move onto blockchains, and auditors and supervisors with access would be able to check transactions in real time and with certainty over the attribution of those transactions. At the application level, blockchain brings new business to auditors, such as reviewing certain transactions and authenticating the existence of digital assets and confirming consistency between information on a blockchain and in the corporal world.

These new tasks could be challenging, predominantly as there are no centralized authorities on the blockchain. Auditors need to leverage their expertise in IT system audits to discover novel methods to realize certification of ownership. Moreover, blockchain could basically change the auditing process as absolute records of transactions is stored on a blockchain. Here, auditors will no longer need to request, and wait for parties involved in the transactions, to make available data and documents. Additionally, blockchain will outshine the traditional audit sampling process, and allow continuous audits for any 'on-chain' transactions in any specific period. The adoption of blockchain will free up resources that were formerly expended on collection and verification of evidence. It will change from transaction testing to control testing. This is because what is critical is the effectiveness of internal controls surrounding blockchain, as transaction records stored on the blockchain does not of a necessity guarantee the reliability of organizations' financial reports. For example, an "on-chain" transaction still could be executed between related parties, linked to some unobservable "off-chain" agreement or fraudulent transaction (AICPA & CPA Canada, 2017). When auditors come across a definite blockchain, they are required to observe clients' incentives, as well as blockchain code quality, protocol changes, and power distribution among peers.

Notably, the profile of the auditors will change. The transparency, traceability, immutability and amalgamation of rules and procedures embedded into the blockchain technology itself may enrich processes and production of information in such a way that control and audit procedures may be changed extensively, or even in some cases, becomes obsolete. From the above, it offers auditors new opportunities to revamp best practices,

update rules and procedures, define new standards of the profession that could be programmed within transactions or even innovate with new value-added services.

5.0 Conclusion

It is no revelation that this new, fraud-proof expertise may soon significantly change the auditing world. With the combination of peer-to-peer networking technology and cryptography, transactions are recorded and confirmed automatically, making it virtually impracticable to revert and change or alter any data. When considering the accuracy that this creates, it would be easy to assume there would no longer be anything left for an auditor. Notwithstanding the accepted idea, blockchain technology does not eliminate the need for an auditor. There are numerous reasons to continue conducting audits, even if your business is using blockchain technology. For example, blockchain technology does not decrease the risk of unauthorized, fraudulent, illegal, or related party transactions. Another example might include transactions conducted “off-chain” where the participating parties both agree to handle transactions without recording them through the blockchain ledger. This would unquestionably create a major audit concern. It’s also imperative to note that even if all the original data is complete and accurate, it could still be misclassified in the financial statements.

There is also this likelihood of auditing the blockchain itself. The integrity of blockchain technology can be tested through a diversity of audit procedures. Several larger companies have already introduced methods for conducting audits on blockchains, which are about to be implemented in some financial services sectors. Moreso, we don’t anticipate this new technology eliminating the roles of auditor. Instead, we believe that audit firms and/or auditors will continue to have a vital role in the audit process and will likely see many new opportunities related to blockchain. That said, it is pertinent to note, that one of the greatest innovations to the auditing world is the introduction of blockchain technology, and its integration into auditing process. Consequently, companies will no longer change their records or reverse engineer their financial documents for audit purposes because blockchain allows users to take judgments based on all transactions that have occurred in the past and not just based on some random samples. This will increase the trust, and or assurance the auditors can give to the public regarding the audit report.

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THE EFFECTS OF TAX ADMINISTRATION ON TIMELY PAYMENTS OF TAXPAYERS INCOME

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Abstract

Timely payment of taxes by taxpayers is a major challenge to tax authorities, who are responsible for implementing tax administration. The study examined the effect of tax administration on timely payments of taxpayers' income. The study employed survey research design through the administration of structured questionnaires. The population of the study was 4499 tax revenue officers in Lagos, Ogun, and Oyo of which 387 copies of the surveys were administered while 98% were recovered from the respondents. The results of the study indicated that tax assessment, collection and remittance in Lagos, Ogun, and Oyo State Internal Revenue Services (SIRS) has a positive influence on timely payments at 5% level of significance adopted for the study. The study concluded that a significant relationship exists between Tax assessment, Tax remittance and Tax collection and Timely Payments of taxpayer's declarations. The study recommended that Lagos, Ogun, and Oyo State tax authorities should revamp the Tax assessment, Tax remittance and Tax collection structure and processes in order to increase their proficiency and efficacy, and also to provide adequate and relevant training for members of staff on the use of information technology and update the technological tools used in operations of their work so that the members of staff can be technologically competent. The use of technological devices should also be made available to members of staff in the various tax stations outside the head office.

Keywords: Tax Administration, Tax Authorities, Timely Payments

1.0 Introduction

Sustainable revenue mobilization is a necessity for stable economic growth and development in a nation which requires continuous funding through raising of revenues to aid the government in providing the needed infrastructures and many other services for the wellbeing of the citizens of a country. The main function of revenue agencies is to mobilize tax revenue on behalf of the government, which will be used to fund the social and infrastructural needs of a country (Kujore, Dada & Adegbe, 2021). Timely payment of tax declarations by taxpayers is a major challenge to tax authorities as this indicates the ability of tax authorities to perform their function as tax revenue collectors because until the tax revenue is in the treasury of the government, tax authorities can then be said to have efficiently and effectively carried out their core function of assessment, collection, and remittance.

Taxpayers are expected to pay taxes which have been subjected to assessments on time. Timely payment indicates that a taxpayer's income has been assessed either through self-assessment or by the tax officials



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in charge of assessments and proposed or documented to be paid on a certain date. Where a taxpayer's defaults in payment, tax authorities will enforce sanctions, penalties, interest charges and legal actions where appropriate. According to the World Bank Ease of Doing Business (2020), none of the Tropical African countries has improved in the ease of paying taxes for many years. According to the report, the overall ease of doing business ranking in Nigeria is much higher than the ease of paying taxes, which has recently increased by 22% (from 182 position in 2017 to 159 position in 2020), signifies that tax authorities need to ensure taxpayers compliance is achieved and the government's purse is robust. The onus lies on the tax revenue agency on how to successfully encourage and ensure that taxpayers make timely payments of tax income into the government purse (An, Frik, Ivanova, Markov, Simonova, & Evseenko 2020).

2.0 Literature Review

2.1 E-payments

The process of paying taxes can be manual which may involve taxpayers visiting the tax office for couple of days before the assessment is approved for payments, this would involve transportation costs, productive business time wasted which could be used to earn more business income. Advancements to the manual processes of paying taxes is the introduction of electronic payments. The use of e-payments has been validated by many authors such as House, Mazar, and Robitaille (2015); Irefe-Esema and Akinmade (2021) to encourage timely payments from taxpayers. A report from OECD (2021), states that more than 80% payments in value and number of various payable taxes are done electronically. Many studies have confirmed that the electronic system of paying taxes have been beneficial in so many ways to both taxpayers and revenue collectors themselves. Electronic payment of taxes has reduced or eliminated the several visits to the tax revenue collecting agencies by taxpayers and the time can be put to more productive earning abilities of the taxpayers (Olaoye & Atilola, 2018). Electronic payments have reduced the amount of paperwork involved in tax payments by both taxpayers and the revenue agency as the procedures have been simplified and put in a concise format online.

2.2 Tax Administration

Tax administration involves every activity that can lead to the achievements of the practical implementation of the objectives of tax laws and policies for tax revenue generation (kalu & Ibe, 2020). Tax administration is the implementation of tax laws that confers power on Internal Revenue Services to collect a part of taxpayers' income as government agents for revenue mobilization. Tax administration involves assessment, collection, and remittance of taxes from individuals and organizations. Also, according to (Darono, 2015) tax administration is an institution established to remove or lessen lopsided activities between the taxpayers and tax officials.

Taxation is a means used to collect taxes on the income of taxpayers within a specific jurisdiction. Taxation and government revenue are often befuddled as meaning the same thing. The National Tax Policy (2012) makes a distinction, defining government revenue as proceeds from sale of government activities, internally or externally. Taxation is primarily a tool of revenue generation. Moreover it is used to rouse other avenues of revenue generation to the government for the advancement of the economy. According to Earnest and Young (2020), adequate and sustainable revenue collection helps to execute and implement policies faster and efficiently, taxation is an ideal long-term strategy to wean a country out of foreign aid dependency (Slemrod, 2015). Taxation plays a key role in building up institutions, markets, and democratic governance (OECD, 2009). Taxation is premised on some principles, which were first put up by Adam Smith in (1776) and called the four canons of taxation (equity, certainty, convenience, and economy). These principles have been promoted in recent times to include low cost of administration, simplicity, clarity, low compliance cost, flexibility, and sustainability (RNTP 2017). In every economy, whether developed, underdeveloped, the essence of taxation is revenue generation. The Nigerian economy for many decades depended heavily on revenue from oil to finance government activities. However, due to the volatility of the international oil market. The Nigerian government now concentrates on taxation as a sustainable source of revenue (Richards, 2019).

2.3 Tax Administration and Timely Payment

Irefe-Esema and Akinmade (2021), in their study used field survey on Federal government tax agents and tax professionals. The authors found out that the use of automation impacts positively on payment of taxes in Nigeria, the authors further revealed in their study that tax automation would avert corrupt practices of tax officials, reducing or eliminating physical contacts between the taxpayers and tax officials. Otekurin, Nwanji, Eluyela, Inegbedion and Eleda (2021), their study revealed that tax administration that embraces e-tax payments will lessen tax circumvention and improve tax revenue of the government in Nigeria. Mukuwa and Phiri (2019), their work reveals e-payment significantly impacted and has increased revenue collections from small scale business in Zambia. The work of Ganyam, Ivungu and Anongo (2019) revealed a positive effect on paying taxes electronically, tax remittance and revenue collections. The study recommends State Internal Revenue Services to be fully automated. Also, the work of Onuselogu and Onuora (2021), revealed that e-tax payment has a positive and insignificant effect on revenue generation and company income tax and a negative and insignificant effect on capital gains tax, the authors recommend sensitization of e-payment. The study of Ajayi and Yidiat (2021), impact of electronic tax filing on tax revenue generation in Nigeria, revealed that electronic tax filing had significant impact on oil tax revenue in Nigeria.

2.4. Agency Theory

The agency theory is authored in the early 1970s by Stephen Ross and Barry Mitnick, the theory became popular through the research of Jensen and Meckling in 1976. The theory is basically addressing a relationship in which a party acts on behalf or in the capacity of another party. According to Einsenhardt, (1989), agency theory proposes that humans are rational, self-interested, and opportunistic in nature. The State tax authorities are the agents vested with the control of State tax matters, taxpayers as citizens in the State are the third parties, while the State government is the principal, the owner of public sector (Olugbusi & Ojo, 2021). Clarke (2004) explained that the administrators (tax officials) supervise the tax revenue and act as agents of collections on behalf of the principal (government). The occurrence of principal and agent challenges in every organization made the theory popular in the field of accounting, finance, economics, and others. The supporters of this theory include (Watts & Zimmerman, 1983), Fama, (1980), Hammond & Knott (1996), Adams, Kiser & Tong, (1992) and many others.

Many authors have also criticized the agency theory, Perrow and Gore (2012), opposed the theory as addressing only the agent, stating that the principal as a party could also be exploiting the agent. Others critiques of the agency theory include Sanders & Carpenter (2003), Wiseman & Gomez-Mejia, (1998).

The State tax authority or agency is acting on behalf of the State government administering tax on taxpayers (the governed), the taxes collected would be used to fund the various economic activities of the State (Ibrahim, Olawale, Victor, & Mohammad, 2020). The greatest challenge of the principal is to ensure that the agent acts in his interest but due to conflicts of interests arising as a result of the separation of ownership and control which the main thrust of the agency theory, there is usually a diversion of the objective as tax agency, or its officials acts for its interest and personal gain. The theory therefore chides the State tax authorities as reliable stewards of tax administration to be transparent, accountable and remit completely all taxes collected from the taxpayers and the taxpayers expect the State tax authorities not to delay or prolong unnecessarily the tax matters during tax dispute and resolutions.

3.0 Methodology

This study employed the survey research design using the simple random sampling technique to select the respondents from the primary source by questionnaire on a population of four thousand four hundred and ninety-nine revenue collecting officials in Lagos, Ogun, and Oyo SIRS in Nigeria. The study adopted purposive sampling technique to select Lagos, Ogun and Oyo, commercial hub States in in the South -West geopolitical zone, among the top highest revenue generating States in Nigeria and the States has same demographic attributes in tax matters (Adesemowo, Dada, & Adegbe, 2022). A sample size of three hundred and eighty-seven respondents was taken using Taro Yamani formula. Reliability test of 0.713 was determined

by using Cronbach alpha above the required 0.7 threshold. The questionnaire with a 6 level Likert scale had sections for the demographic attributes and the variables. The data obtained was evaluated using multiple regression analysis which were presented using descriptive and inferential statistics.

3.1 Model Specification

$$Y = f(X)$$

$$TLP = \beta_0 + \beta_1 TASS + \beta_2 TCOL + \beta_3 TREM + \mu_i \text{-----Model}$$

4.0 Discussion of Findings

Table 1: Respondents Responses on Timely Payments (TLP)

Timely payments (TLP)	Missing	SD	D	PD	PA	A	SA	Mean	SDV
The revenue service receives tax payments promptly and generates more tax revenue from e-payment system.	2 (0.50%)	2 (0.50%)	4 (1.0%)	12 (3.10%)	58 (15.20%)	147 (38.50%)	157 (41.10%)	5.12	0.99
Electronic payment systems such as Internet or other online payment methods, Automatic Teller Machines are available and used by taxpayers for payment of total core tax collections.	4 (1.0%)	5 (1.30%)	23 (6.0%)	6 (1.60%)	68 (17.805)	132 (34.60%)	144 (37.70%)	4.88	1.27
Electronic payment of taxes has reduced or completely eliminated the several visits to the tax revenue collecting agencies by taxpayers.	2 (0.50%)	3 (0.80%)	25 (6.50%)	9 (2.40%)	59 (15.40%)	127 (33.20%)	157 (41.10%)	4.96	1.23
The revenue service has dedicated collection enforcement units with full-time specialist staff trained in collection techniques, customer (debtor) relationships, and negotiation.	4 (1.0%)	3 (0.80%)	2 (0.50%)	8 (2.10%)	40 (10.50%)	158 (41.40%)	167 (43.70%)	5.19	1.01

Source: Researcher's Field Study, 2022

Table 1 shows that 41.10% respondents strongly agreed that the revenue service receives tax payments promptly and generates more tax revenue from e-payment system., 38.50% respondents agreed, and 15.20% respondents partially agreed, contrariwise 3.10% respondents partially disagreed, 1.00% disagreed and 0.50% respondents strongly disagreed. The mean value of 5.12 indicates that the respondents on average agreed that the revenue service receives tax payments promptly and generates more tax revenue from e-payment system.

In the same vein 37.70% respondents strongly agreed that Eelectronic payment arrangements such as Internet or other online payment methods (via electronic funds transfer or online payment by debit/credit card), Automatic Teller Machines are available and used by taxpayers for payment of total core tax collections, 34.60% respondents agreed, while 17.80% respondents partially agreed, but 1.60% of the respondents partially disagreed, 6.00% disagreed, and 1.30% strongly disagreed. The mean value of 4.88 indicates that the respondents on average agree that Eelectronic payment arrangements such as Internet or other online payment methods (via electronic funds transfer or online payment by debit/credit card), Automatic Teller Machines are available and used by taxpayers for payment of total core tax collections.

Furthermore 41.10% respondents strongly agreed that electronic payment of taxes has reduced or eliminated the several visits to the tax revenue collecting agencies by taxpayers, 33.20% agreed, 15.40% partially agreed to the statement, while 2.40% respondents partially disagreed, 6.50% respondents disagreed, and 0.8% respondents strongly disagreed. The mean value of 4.96 indicates that the respondents on average agreed that electronic payment of taxes has reduced or eliminated the several visits to the tax revenue collecting agencies by taxpayers.

In addition, 43.70% respondents strongly agreed that the revenue service has dedicated collection enforcement units with full-time specialist staff trained in collection techniques, customer (debtor) relationships, and negotiation, 41.40% respondents agreed to this statement, 10.50% respondents partially agreed, while respondents 2.10% partially disagreed, 0.50% disagreed and 0.80% strongly disagree to the statement. The mean value of 5.19 indicates that the respondents on average agreed with the statement.

Test of Hypothesis

Table 2: Regression Analysis

Variable	Coefficient	Std. error	t – stat	Prob.
(constant)	3.330	0.249	13.373	0.001
TASS	0.138	0.034	0.215	0.001
TCOL	0.041	0.026	1.436	0.152
TREM	0.155	0.043	3.587	0.001
R – Squared	0.122			
Adjusted R ²	0.115			
f- Statistics	17.405			
prob (f – stat)	0.001			
Observation	382			

Dependent Variable: TLP; Obs.: 382

*significant at 5%

Source: Researcher's Field study (2022)

$$TLP = 3.330 + 0.138TASS + 0.041TCOL + 0.155 TREM$$

Interpretation

In Table 2 Tax administration effect on the timely payment of taxpayers in Lagos, Ogun and Oyo SIRS in Nigeria is not significant. The result shows that tax assessment, tax collection and tax remittance have a positive effect on timely payment, which is specified by the boundaries of the coefficients which are $\beta_1 = 0.138$, $\beta_2 = 0.041$ and $\beta_3 = 0.155$. This corresponds with a *prior* expectation. This implies that a percentage increase in TASS would lead to a 13.8% increase in timely payments of taxpayers, also a percentage increase in TCOL would result in an increase in timely payments of taxpayers by 4.1%, while a percentage increase in TREM would give 15.5% increase in timely payments of taxpayers. The bearing of the coefficient signifies those enhancements to better-quality tax assessment, tax collection and tax remittance would result in increase in timely payment of taxpayers.

The adjusted R² which is the coefficient of determination is 0.115 (12%), this suggests that only 12% variation in the timely payments of taxpayers in Lagos, Ogun and Oyo States is elucidated by the proxies of tax administration while 88% is attributed to other variables outside this study. At the 0.05 level of significance, the F-statistics is 17.405, where the p-value of the F-statistics is 0.001 which is less than 0.05 level of significance adopted for this study, which connotes that the null hypothesis is rejected and the alternate hypothesis which states that tax administration significantly impacts the timely payment of taxpayer's declaration in Lagos, Ogun and Oyo SIRS in Nigeria is accepted.

Discussion of Findings

In Table 2, the hypothesis predicted a positive and significant relationship between the dependent and independent variables. Consequently, the null hypothesis is rejected and resolved that a significant relationship subsists between tax assessment, tax remittance and tax collection on the timely payment of taxpayer's declaration in Lagos, Ogun and Oyo State Internal Revenue Service in Nigeria.

E-payment, as a measure of timely payment as used in this study, is positively affected by tax administration. This position is affirmed in Irefe-Esema and Akinmade (2021), that tax administration has a positive and significant effect on timely payment of taxpayers thereby increasing tax revenue accruing to the government, also in Roger (2021) e- payment has influenced positively tax revenue generation in Rwanda. Similarly, in Mukuwa and Phiri (2019), the study found out that e-payments has a significant effect and has enhanced increased revenue collections in Zambia. The study of Awai and Oboh (2020) found out that electronic tax payments significantly influence tax revenue collections, this implies that automation of tax administration functions enhances increased tax revenue collections. In the study of Olaoye and Atilola, (2018), the effect of e-payment on revenue generation, using a pre and post e – payment analysis, the study revealed that e-payment has a negative and insignificant effect on value added tax and capital gains tax, this implies that the tax administration has no significant influence on revenue generation upon introduction of e-payment in Nigeria. Likewise in the study of Onuselogu and Onuora (2021), the results of the study also show a negative and insignificant effect on value added tax and capital gains tax in Nigeria. Similarly, in Koessler, Torgler, Feld, and Frey (2019) the study found out that financial or nonfinancial reward enhances compliance to make timely tax payments of taxes.

5.0 Conclusion and Recommendation

The conclusion of the study is that tax assessment, tax remittance and tax collection contribute significantly to timely payment of taxpayers' declaration in Lagos, Ogun and Oyo States. The study recommends that State governments should enhance and fortify e-payment systems by providing advanced and up to date technology in all their workstations. The government should continuously train and retrain its staff in information technology locally and internationally, also the government should ensure that all its tax stations are adequately automated.

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DETERMINANTS OF CORPORATE SOCIAL RESPONSIBILITY DISCLOSURE IN NIGERIA

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Abstract

The study examined determinants of corporate social responsibility disclosure of quoted agricultural companies in Nigeria. The study adopted the ex-post facto research design and used longitudinal data collected from the financial reports of the companies for the various years. FSIZ, FPRO and FGRW were used as explanatory variables while CSRD was used as response variable. Data collected were analysed using regression analysis. However, some preliminary analysis like descriptive statistics, correlation, and variance inflator analysis were carried out to ascertain the normality and check for the presence of multi-collinearity. The findings show that the variables selected for the study positively influence CSRD among agricultural companies in Nigeria. The specific finding shows that FSIZ, FPRO and FGRW have positive and significant influence on CSRD of quoted agricultural companies in Nigeria. The study recommends among others that management of large companies should consider increasing their practice/involvement in CSRD.

Keywords: Corporate Social Responsibility Disclosure, Firm size, Firm profitability, Firm growth

1.0 Introduction

In a dynamic, complicated, and unpredictable world in which organisations are operating, they must consider the interests of outside audiences in their everyday activities. Due to the influence of organisations on their society, there exists a symbiotic connection; their interdependence is critical; therefore, they should support one another. The organisation's staff, safety, and sponsorship of its goods and services are all dependent on society, and society expects them to contribute to environmental development on both a social and economic level. However, both parties can only be happy if they meet each other's expectations (Ojo, 2008; Uadiale & Fagbemi, 2011). Accounting as a measurement and communication process for a business, provides data that enables consumers to make well-informed decisions. The practice of communicating the social and environmental effects of an organisation's economic actions to specific interest groups within a society as well as the wider public is known as corporate social responsibility disclosure (Oni & Kabir, 2010). Accounting for corporate social responsibility activities can help a company's reputation. According to Branco and Rondrigues (2006), accounting for Corporate Social Responsibility spending helps firms be more responsible to their stakeholders, which improves their reputation among several stakeholders, including consumers, suppliers, rivals, banks and investors.

A firm's reputation is the public's perception of the company. Profit and risk considerations, market share, media visibility, equity, dividend allocations, business size, and accounting calculations with a social perspective are only a few of the variables that contribute to a firm's image (Johan 2021). A company's strong reputation can provide several benefits, including increasing the company's attractiveness to prospective employees, increasing job satisfaction, and decreasing the proclivity to switch to other companies (Bear, Rahman, & Post 2010). Companies may build a favourable reputation in addition to their own by upholding their environmental and social responsibilities (Marshall, 2007). Several studies has been conducted to find out the determinants of corporate social responsibility disclosures in advanced economies (Zou, Zeng, Xie, & Zeng, 2014; China, Mamun, & Ahmed, 2017; Asia pacific Abdulsamad, Ahmed, & Yaseen, 2017; Malaysia, Wonsuk, & Abebe, 2016; Garcia, Carvalho, Boaventura, and Souza Filho, 2020) the evidence for emerging economies such as Nigeria appears to be largely hearsay, as the studies that have empirically examined the key determinants of Corporate Social Responsibility Disclosure (CSR) have not been adequate in emerging economy especially in the post-recession era. The design and scope of the reviewed prior studies differs. Some were based on cross sectional design/data (Zou, Zeng, Xie, & Zeng, 2014, Mamun, & Ahmed, 2017 Abdulsamad, Ahmed, & Yaseen, 2017), others used the disclosure of absolute value of investment in environment/social activities (Wonsuk, & Abebe, 2016, Garcia, Carvalho, Boaventura, & Souza, 2020). While others used word count collected from firms annual reports in various years (Peraita, 2017; Bassey, Sunday & Eton 2013; Duke & Kankpang 2013) without controlling for heterogeneous impact on the data. Those differences result to inconsistency with the findings and can affect the reliability of the results, thereby limiting their practical applicability. Against this backdrop, we explore the determinants of corporate social responsibility disclosure of quoted agricultural companies in Nigeria. To achieve this purpose, these hypotheses were formulated:

- H₀₁:** Firm size has no significant influence on CSR.
- H₀₂:** Firm profitability has no significant influence on CSR.
- H₀₃:** Firm growth has no significant influence on CSR.

2.0 Review of Related Literature

2.1 Conceptual Framework Corporate Social Responsibility Disclosure



CSR is a branch of accounting that helps a company account for all its operations and activities in the eyes of all interested parties. Financial, quantitative, and/or qualitative data on an organisation's ties with society are collected and shared using social accounting methodologies (Gray, Collison & Bebbington, 1998). Social accounting practices, according to Daferighe, Akpanuko, and Offiong (2019), involve a wide range of activities, including employment, training, and advancement of people with disabilities, as well as some health programs, safety, and well-being at work.

Social accounting is distinct from both public interest and critical accounting. While social accounting is often employed in the context of CSR, it may be utilised by any organisation, including NGOs, charities, and government organisations. Social accounting can also be combined with Community-Based Monitoring (CBM). The notion of corporate responsibility is emphasised in social accounting. Crowther, (2000) describes social accounting in this context as a method to inform about a society's actions that stresses the necessity to identify socially important behaviour, as well as the determination of those for whom the firm is accountable. CSR is a company strategy that promotes long-term growth by providing economic, social, and environmental benefits to all stakeholders. It is a broad term that covers a wide range of subjects, including human rights, corporate governance, health and safety, environmental consequences, working conditions, and economic growth. Its major goal is to push change toward sustainability.

CSR refers to a company's public publication of information about its social performance on a regular basis. The word "social performance" is used in a wide sense to refer to topics such as social, environmental, and governance that are often not addressed by financial performance indicators. Arora and Chuahan (2021) measured the level of disclosure in financial statements using the number of sentences used to express the concept in the financial report. This study adopted the measurement of Arora and Chuahan for corporate social responsibility disclosure.

Firm Size

Firm size has been variously defined in the literature to refer to the total assets, scale of operations and number of employees among others. With this definition, larger firms are assumed to have more resources at their disposal and can be used for profitable investment opportunities. Similarly, Brown (2009), defined firm size by making reference to the market value. In the same vein, according to Vieira (2010), aligning with the previous definition concluded that the size of a firm is better reflected by its total asset, sales, or market capitalization.

Extant literature has measured firm size in different ways using assets, employment, sales, and market capitalization. This study measured firm size as natural logarithms of a firm's total assets, in line with the study of (Driffield, Mahambare & Pal, 2005). The concept of firm size describes how large or small a firm is and can be measured by its total assets or by its total capitalization. In this study, firm size is measured as a logarithm of the total assets of the company.

Firm Profitability

Firm profitability is the ability of a business to earn a profit. A profit is what is left of the revenue a business generates after it pays all expenses directly related to the generation of the revenue, such as producing a product, and other expenses related to the conduct of the business activities. Various indicators have been used to measure the profitability of firms by various researchers. According to Chen and Wong (2004), defining firm profitability is the unique ability of a firm to gain and utilise its profits in several ways to improve on its competitive advantage. Firm profitability has been measured using various standards including gross profit, net profit, return on equity and return on assets among other measures. Financial profitability emphasises on variables related directly to financial issues and reports. In the study of Chukwu and Egbunike (2017), firm profitability was measured using return on assets as a measure of firm profitability. In this study, firm profitability is measured using return on equity.

Profitability can determine a firm's long-term existence. It is the extent to which a firm may use its available finances and assets to maximise profit. Return on Equity (ROE) is a metric that tells investors how well a firm (or, more precisely, its management team) is managing the money that its shareholders have invested. In other words, it assesses a company's profitability in relation to its stockholders' equity. The higher the ROE, the better a company's management is at creating income and growth from its equity financing (Obehioye, Adeyemi & Augustine, 2013). ROE is the accounting variable to be employed in this analysis ROE. ROE is a profitability ratio that describes how much return a firm is able to generate from its equity. This variable is essentially a financial efficiency metric that tries to determine the extent to which firms create adequate returns on their equity.

Firm Growth

Mai (2006), firm growth is the constant increase in the revenue, and assets of a corporate organisation. Based on the above definition, a firm is considered growing when its revenues, or assets or both increase in consecutive years. According to Sri (2013) firm growth is the change in the company total assets, revenue

and revenue generating capability. Firms' growth opportunity varies across sectors and the individual firm, this determines their financing decision (Akinsulire, 2011). Hence a firm which is experiencing growth tends to choose the use of equity financing because of its low risk and cost.

Firm growth is not one sided, as growth should cut across all aspects of the firm, however, firm growth is empirically viewed from the sales, and assets perspective. Firm growth through the growth in sales is the increase in the sales revenue. But it remained unclear whether increased sales leads to increased profitability and market value in a given accounting year and in a succeeding year. Asset growth is the persistent increase in the total assets, which can be measured by increase in plant and equipment value, and research intensity, may also affect sales growth in a base year or succeeding year, indirectly affecting the development and market value (Safdar, Hazoor, Toheed & Ammara, 2013). This study measured firm growth as the percentage changes in total assets over the period of study as used by (Mohammed & Usman 2016).

2.2 Theoretical Framework

The theoretical foundation of this paper is anchored on the Signalling theory and Stakeholder theory.

2.2.1 Signalling Theory

The concept of signalling was first studied in the context of job and product markets by Akerlof and Arrow. It was developed into signal equilibrium theory by Spence in (1973). The theory proposes that a firm can distinguish itself from another by what and how it discloses information to the capital market which can be a good signal of its performance. The theory believes that the signal is credible only if the bad firm is unable to mimic the good firm by sending the same signal. If the cost of the signal is higher for the bad type than that of the good type of firm, the bad type may not find it worthwhile to mimic, and so the signal could be credible. Some scholars like Ross (1977) show that debt can be used as a costly signal to separate the good from the bad firms. Under the asymmetric information between management and investors, signals from firms are crucial to obtain financial resources. The use of debt as signalling by managers can suggest a better future, hence high-quality firms prefer more debt while low quality firms lower their debt levels.

In this way, a good firm can separate itself by attracting scrutiny while the bad firm will not mimic because the bad firm will not want to be discovered. Poitevin (1989) demonstrates that debt could be used as a signal to differentiate the potential competition of new entrant firms. Low-cost entrants signal this fact by issuing debt while the incumbent or high-cost entrants issue only equity; Harris and Raviv (1985) argue that calling

firm's convertibles can be a kind of signal and Bhattacharya and Dittmar (1991) showed that stock repurchase is another kind of signal to represent firm value.

However, there are two types of signalling: one is the costly signalling equilibrium discussed by Spence in 1973; Leland and Pyle in 1977; Ross in 1977 and Talmor in 1981 etc., second, the costless signalling as proposed by Bhattacharya and Heinkel (1982), Rennan and Kraus (1984). A signal is considered costly if its production can consume resources or if the signal is associated with a loss in welfare generated by deviations from allocation or distribution of claims in perfect markets. The signalling paradigm is multivariate for financial instruments.

The voluntary disclosure of CSR / investment assets enhances the overall disclosure quality and quantity of the firm. Most stakeholders believe that corporate social accounting is one of the major drivers of stakeholder's loyalty which lead to growth in a competitive business environment, hence disclosing this very important tool can enhance the image and market value of the firm. This is why we chose this notion as the foundation for our research.

2.2.2 The Theory of Shareholders

Milton Friedman proposed the shareholders hypothesis in (1970). According to this theory, the traditional role of businesses is to manufacture and distribute goods and services for profit. The entire notion of social accounting has been considered by traditional economists as irreconcilable with the concept of a free-market economy and hence a free society. Friedman felt that the business of business is a business; that is, corporations are formed to generate money rather than to supervise society's social development, and that social development is better handled by the government or Non-Governmental Organisations (NGOs). Friedman also thought that when businesses get engaged in social concerns, income is diverted to matters outside of the managers' primary competence, and that fixing a social problem is the duty of the state. He went on to say that corporate charity and other activities that are not clearly connected to increasing shareholder value are a waste of shareholders' money.

This wasteful use of money, he believes, will have a long-term detrimental impact on society. Unlike Friedman, Corroll and Freeman proponents of stakeholder's theory believe that if a firm generates value for its stakeholders, it will also create value for its shareholders (Pfarrer, 2010).

Stakeholders are described as any individual or group who may influence or is influenced by an organisation's action, decision, policies, practices, or goals (Ebiringa, Yadirichukwu & Ogochukwu, 2013). Investors, consumers, employees, the government, and suppliers are among the stakeholders listed in a business

planning and policy model (Bassey, Sunday, & Eton, 2013). Thus, Stakeholders' theory was introduced by Edward Freeman in (1988).

Stakeholder theorists argue that taking into consideration all component groups is the best approach to maximise overall company performance. According to stakeholder theory, maximising shareholder wealth is not the most effective method for firms to gain a competitive advantage. However, Friedman is opposed to the stakeholder theory, which holds that wealth maximisation is not the ultimate objective of business. He argues that there is just one social duty of business, and that is to use its resources and engage in activities that generate profits. According, management is a shareholder's staff whose first and greatest loyalty is to the investors.

As a result, his primary goal must be to generate a profit and keep the firm alive. It is believed that when managers are given the flexibility to employ organisational resources for the welfare of society rather than simply preserving the interests of the owners, they are given arbitrary and hazardous powers that they may abuse. He goes on to say that growing corporate social responsibility eventually equals slower development or a fall in the Gross National Product (GNP), that since corporations pay taxes to the government, therefore expecting them to use a portion of their revenues in a socially responsible manner is exploitative, especially given that companies are neither equally profitable nor in a position to undertake social investment (Aluko, Odugbesan, Gbadamosi, & Osuagwu, 2004).

The stakeholder idea may be seen as both simple and complicated because it is simple to identify a stakeholder yet hard to manage the stakeholder-profitability connection. This study, however, is founded on the stakeholders' theory as well, because it captures the interests of shareholders.

2.3 Empirical

Lyndon, Ikechukwu, and Ayaundu (2021) investigate the relationship between social cost accounting and profitability using GlaxoSmithKline Consumer Nigeria PLC as a case study. It used profit after tax (PAT) as the dependent variable and staff benefits, health and welfare (EBI) incentives, and government revenue contributions (GRC) as proxies for social expense accounting (independent variables). Secondary data for the identified research factors were analysed from GlaxoSmithKline's annual reports from 2011 to 2018. The study employed descriptive statistics and multiple regression analysis using E-view 10 software. According to the findings, every independent factor had a positive relationship with profit after tax, but only the contribution to government revenue was significant at the 5% level. The regression findings also revealed a significance level (R-squared) value of around 0.94, implying that the combined impact of changes in the

explanatory variable accounts for 94 percent of changes in the dependent variable. With a likelihood of F-statistic value of 5%, the overall effect of fluctuations in the explanatory variables significantly characterised changes in the dependent variable. According to the study's findings, social cost accounting is strongly linked to profitability.

In addition, Suwinto (2020) investigates the fundamental factors that influence CSR funds at financial institutions. Panel data is used in this study to investigate the determining variables on CSF provision. From 2015 to 2019, 45 reports on sustainable development were examined in this study. The sample included banks from three different countries: Indonesia, Malaysia, and Thailand. According to the findings of this study, the size of the company, profitability, efficiency, and the age of the CEO are all factors that influence the amount of CSR funding.

Furthermore, Belen, Silvia and Silvia (2020) investigate among other things, how board gender composition affects CSR reporting. The study looked for differences in corporate social responsibility disclosure based on the gender composition of the Board of Directors, using data from a KPMG survey and the Governance Metrics International Women on Boards Report. Boards with three or more women are more likely to disclose corporate social responsibility, produce less integrated reports, provide more information on corporate social responsibility strategy, and include assurance statements, according to the findings. The study also discovered that having women on boards mitigates the impact of cultural differences by mediating and moderating their influence. The findings are useful in determining the consequences of excluding women from corporate boards in terms of corporate social responsibility. The work adopts a multidimensional approach, combining data from several but complementary sources to give this field of study a distinct focus. However, Daferighe, Akpanuko, and Offiong (2019) investigate the relationship between social accounting practices and company profitability in Nigeria. The study looked at the relationship between health-related costs (HRC) and company returns on equity (ROE) in Nigeria. The data for the study was acquired from the financial records of fifteen (15) companies chosen at random from the Nigerian economy's Oil and Gas, Manufacturing, and Building and Construction sectors between 2009 and 2015. The HRC variable for social accounting practices was found to have a minimal positive connection with Nigerian firm ROE. The study discovered that investing in social activities had a negligible positive link with businesses' ROE in Nigeria, and indicated that businesses should support health issues with caution in order to increase their long-term economic benefits.

On the other hand, Nwaiwu and Oluka (2018) investigated CSR disclosure and oil and gas financial performance in Nigeria. In this experiment, the impact of corporate social responsibility disclosures on the

performance of Nigerian petroleum and gas companies is investigated. Time series data were obtained from the Central Bank of Nigeria's annual financial reports and the EBR; the data were examined using Pearson's Product Moment's coefficient of correlation and multiple linear regression analysis. Corporate financial success measurements provide a major benefit. The study findings that legislation should be employed to ensure proper CSR information and transparency.

In addition, Anna-Lena, Markus, and Matthias (2018) investigate the contents and determinants of CSR website reporting in Sub-Saharan Africa. The study addresses a portion of this research gap by analysing the CSR website reporting of 211 firms in seven Sub-Saharan African countries. The study's objectives are twofold: First, the study assesses the extent to which Sub-Saharan firms report on CSR and the information they disclose. Second, using institutional theory, the study investigates how socioeconomic and political contexts influence CSR reporting. To achieve this goal, the study investigates the impact of factors at the national and corporate levels. The study discovers that the sample African firms' CSR activities are heavily focused on local charity and thus differ significantly from Western CSR techniques.

Furthermore, Alina, Daniel, Tomina, and Roxana (2018) investigate the social responsibility behaviour and actions of small and medium-sized enterprises (SMEs) in Romania to determine which variables are most important in defining different levels of engagement in CSR activities. The extent to which SMEs engage in social responsibility is frequently determined by the decisions of their managers and the value orientation of the entrepreneur. Furthermore, the younger a company is, the less likely it is to engage in CSR. The following is the study's key assumption: Young businesses are less likely to engage in CSR activities. The study data shows significant differences between newly founded businesses and those with a longer track record; however, age is not a determinant in corporate social responsibility.

Consequently, Nuraddeen and Khamis (2018) examine the determinants of corporate social responsibility among Nigerian listed conglomerate firms in the last few decades; CSR has emerged as a prominent topic of attention. The current study attempts to investigate key factors of CSR in Nigerian listed conglomerates utilising samples of six conglomerates from 2010 to 2012. The Stata software was used to analyse the data in the study, which used multiple regression. According to the findings, ownership concentration, corporation tax, and business size all have a favourable and significant influence on CSR. According to the report, there is a need for greater CSR regulation to require owners and management to make and disclose CSR expenditures.

3.0 Methodology



The study used longitudinal data and adopted an *ex-post facto* research design. This was adopted since our data is secondary data that exists already which cannot be controlled or manipulated. The population of the study consists of the entire 5 agricultural firms quoted in Nigerian Exchange group as of 31st Dec. 2020 business list covering from 2011-2020 with 50 observations. They include Ellah Lake, Ftn Cocoa Processors, Livestock Feeds, Presco and Okomu Oil Palm. The study used data from secondary source and was obtained from the Nigerian Exchange Group factbook and annual reports and accounts of the agricultural firms in Nigeria.

Variables Operationalization

The variables were operationalized as follow

Variables	Proxy / Measures	Proxy
Dependent variable		
Corporate social responsibility disclosure (CSR)	Corporate social responsibility disclosure is measured using the number of sentences that disclose the company's social activities within the reporting period.	Arora and Chuahan (2021)
Independent variables		
Firm size (FSIZE)	Log of total assets	Vieira (2010)
Firm profitability (FPRO)	Return on equity	Ibrahim and AbdulSamad(2011)
Firm growth (FGRW)	Percentage changes in total assets over the period of the study.	Mohammed and Usmar (2016)

Model Specification and Justification

The researchers adapted and modified the model of Abada and Okuma (2017) in determining the determinants of corporate social responsibility disclosure. This is shown blow as thus:

Model of Abada and Okuma (2017), is as follows: $CSR = (FS, FA, ROA, LEV) \dots\dots\dots 1$

The above models were modified to suit this study as thus:

$CSR = f(FSIZE, FPRO, FGRW) \dots\dots\dots 2$

This can be econometrically express as:

$CSR_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 FPRO_{it} + \beta_3 FGRW_{it} + \mu_{it} \dots\dots\dots \text{equ 1}$

Where: CSR = Corporate social responsibility disclosure, FSIZE = Firm size, FPRO = Firm profitability, FGRW = Firm growth, d_0 = Constant; $d_1 \dots d_3$ = are the coefficient of the regression equation, μ = Error term, i = is the cross section of firms used, t = is year (time series).

4.0 Analysis and Interpretation

Descriptive Statistics

The descriptive statistics result shows the mean value (average) for each of the variables, the maximum values, minimum values, standard deviation, and the normality (Jarque-Bera) result.

Table 4.1 below, is the descriptive statistics result of the data covering the period of ten years (2011 – 2020) of the quoted agricultural companies used for the study.

	CSR	FPRO	FSIZE	FGRW
Mean	7.191986	0.542564	14.29376	0.129876
Median	0.060000	0.430000	14.40000	0.300000
Maximum	11.00000	0.770000	20.00000	0.480000
Minimum	4.000000	0.900000	4.000000	0.030000
Std. Dev.	0.117087	0.499934	3.163223	0.598967
Skewness	4.465454	0.105409	0.017341	8.292675
Kurtosis	38.69707	1.011111	2.315007	116.3258
Jarque-Bera	22510.95	66.50205	7.820704	218083.5
Probability	0.000000	0.000000	0.020033	0.000000
Sum	45.64000	189.0000	4750.000	92.00000
Sum Sq. Dev.	5.456319	99.47368	3982.381	142.7870
Observations	30	30	30	30

Source: Descriptive Statistics Result Using e-view 8

The descriptive statistics result shows that on average, quoted agricultural companies disclose corporate social responsibility activities using about 7 sentences in the financial statement. The difference between the mean, maximum and minimum reveals that most of the companies carry out corporate social responsibility disclosure. Some companies did not spend much on social accounting activities in some years while some spent much on social accounting activities.

The result reveals that on the average, profitability of quoted agricultural companies has a positive average value of about 54.3, the maximum and minimum values show that among the quoted agricultural companies used in the study, some of quoted agricultural companies made high profit while some made low profit. Firm Size shows that most of the companies are above average (sector average) while some are below the sector average in terms of size. This shows that the quoted Agricultural companies used in the study are not dominated by large or small companies but were a mix of either large or small sized companies.

The result shows that the quoted agricultural companies used in Nigeria experienced growth of about 12.99 percent on the average while some did not experience growth within the period under review.

Normality Test

Table 2: Normality test:

Variable	Obs	W	V	z	Prob>z
-----+-----					

CSRD		30	0.7714	464.08	61.505	0.0000
FSIZE		30	0.6526	434.23	52.345	0.0000
FPRO		30	0.7576	451.76	59.186	0.0000
FGRW		30	0.6605	431.06	51.563	0.0000

Source: Shapiro wilk normality test

The Shapiro wilk normality test shows that corporate social responsibility disclosure, firm size, firm profitability, and firm growth, are normally distributed at one percent significance. This indicates that the result of the analysis can be relied upon in making generalization and for policy formulation. The result of the Shapiro normality test is like the normality test result produced by the Jarque-Bera statistics probability (under descriptive statistics).

4.2 Correlation Analysis

Table 4.2 Pearson Correlation coefficient analysis

	CSRD	FPRO	FSIZE	FGRW
CSRD	1.000			
FPRO	0.029	1.000		
FSIZE	0.068	0.038	1.000	
FGRW	0.116	-0.040	-0.006	1.000

Source: Correlation analysis result using Minitab 16.

The result shows that corporate social responsibilities disclosure has positive but weak association with firm size (CSR 0.068), firm profitability (CSR 0.029) and firm growth (CSR 0.116) This shows that increase in firm size, firm profitability and firm growth can positively increase the level of corporate social responsibility disclosure.

Table 4: Variance inflation factor test:

Variable		VIF	1/VIF
CSRD		1.02	0.98039
FSIZE		1.10	0.90909
FPRO		1.01	0.99009
FGRW		1.01	0.99009

Mean VIF | 1.06

The Variance inflation factor test result table above shows the mean value of 1.06 which is less than the 10 benchmark. The mean value indicates the absence of multicollinearity in our model. This result (Variance inflation factor test result) confirms the finding from the correlation analysis which shows the absence of

multicollinearity using 75 percent acceptance region in determining the level of association among the variables used.

/Regression Analysis Result

Model 1: Corporate Social Responsibility Disclosure

Dependent Variable: CSRD

Date: 29/1/23 Time: 14:52

Sample: 2011 2020

Periods included: 10

Total panel (unbalanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.175388	0.064396	2.723585	0.0242
FPRO	2.002555	0.748361	2.675922	0.0078
FSIZE	0.171410	0.065019	2.636311	0.0088
FGRW	0.498276	0.374749	1.329626	0.1845

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.771106	Mean dependent var	0.114386
Adjusted R-squared	0.688921	S.D. dependent var	0.117087
S.E. of regression	0.098734	Akaike info criterion	1.682513
Sum squared resid	3.431448	Schwarz criterion	1.212635
Log likelihood	382.6614	Hannan-Quinn criter.	1.496417
F-statistic	9.515489	Durbin-Watson stat	2.210317
Prob(F-statistic)	0.000000		

Source: Regression result from e-view 8

The analysis result of the corporate social responsibility disclosure model shows an R-sq of 0.771106 and R-sq (adj) 0.688921 respectively. The R-squared adjusted value of 0.68921 (68.9%) indicates that the determinant variables used in the study can explain about 68.9 percent of changes in the level of corporate social responsibility disclosure among quoted agricultural companies in Nigeria. That is, about 68.9% changes in corporate social responsibility disclosure among quoted agricultural companies in Nigeria can be attributable to the determinant's variables. The F-statistics value of 9.515489, and its probability value of 0.000000, shows that the corporate social responsibility disclosure regression model used is well specified and the specification is statistically significant at 1% levels.

Hypotheses Testing



H₀₁: Firm size has no significant effect on corporate social responsibility disclosure of quoted agricultural companies in Nigeria

The analysis result of the effect of firm size on corporate social responsibility disclosure shows a coefficient value of 0.17 of the corporate social responsibility disclosure. The coefficient value indicates that firm size is positively affecting the level of corporate social responsibility disclosure of quoted agricultural companies in Nigeria. The probability value of 0.0078 indicates that size of firms has a significant effect on corporate social responsibility disclosure. Based on the result, the study accepts the alternate hypothesis and concludes that firm size has a significant effect on corporate social responsibility disclosure of quoted agricultural companies in Nigeria.

H₀₂: Firm profitability has no significant effect on corporate social responsibility disclosure of quoted agricultural companies in Nigeria

The result of the effect of firm profitability on corporate social responsibility disclosure shows a coefficient value of 2.003 and probability value of 0.0078. This indicates that firm profitability positively affects the level of corporate social responsibility disclosure. This reveals that firm profitability positively increases the level of corporate social responsibility disclosure. The P-value of 0.0078 reveals that the positive effect of firm profitability is significant on the level of corporate social responsibility disclosure of quoted agricultural companies in Nigeria. Based on the result, the study accepts the alternate hypothesis and concludes that firm profitability has a significant effect on corporate social responsibility disclosure in Nigeria.

H₀₃: Firm growth has no significant effect on corporate social responsibility disclosure of quoted Agricultural Companies in Nigeria

The result of the effect of firm growth on corporate social responsibility disclosure of quoted agricultural companies in Nigeria shows coefficient value of 0.498 for the corporate social responsibility disclosure model. Those values indicate that firm growth positively affects the level of corporate social responsibility disclosure. This result reveals that firm growth can increase the level of corporate social responsibility disclosure of quoted Agricultural companies in Nigeria. The Probability value of 0.1845 reveals that the effect of firm growth on corporate social responsibility disclosure is insignificant of quoted Agricultural companies in Nigeria. Based on the result, the study accepts the alternate hypothesis and concludes that firm growth has an insignificant effect on corporate social responsibility disclosure.

Discussion of findings



The result shows that firm size has a positive and significant effect on the level of corporate social responsibility disclosure of agricultural companies in Nigeria. This means that the size of companies affects the level of corporate social responsibility disclosure. Thus, big companies are expected to be involved in corporate social responsibility activities more than smaller companies. Firm size drives a major change in the corporate social responsibility disclosure of quoted agricultural companies in Nigeria. The finding is in line with the finding from the study of Dan, Hsien-Chang and Lie-Huey (2013) Musa and Shehu (2013) Elfeky (2017).

The result shows that firm profitability has a positive significant effect on the level of corporate social responsibility disclosure. This means that firm profitability can increase the level of corporate social responsibility disclosure of quoted agricultural companies in Nigeria. Thus, an increase in the profitability of companies can lead to increasing companies' involvement in corporate social responsibility disclosure activities in Nigeria. The finding is in line with the finding from the study of Amole, Sulaiman, and Awolaja (2012) Musa and Shehu (2013), Elfeky (2017), Lyndon, Ikechukwu and Ayaundu (2021), who find positive significant relationship between firm profitability and level of corporate social responsibility disclosure while the finding from the study of Sanni, Olayiwola and Abdul-Baki (2014) find positive but insignificant relationship.

The study finds that firm growth positively impacts the level of corporate social responsibility disclosure. Growing companies desire the good will of the stakeholders to penetrate the market and gain more market share, corporate social responsibility disclosure is one of the ways the companies show to the society that they are good citizens to curry the goodwill of the stakeholder. This result reveals that growing companies invest in financial social accounting activities hence its impact has a positive and significant impact on corporate social responsibility disclosure. This finding is in line with the finding from the study of Dan, Hsien-Chang and Lie-Huey (2013) Musa and Shehu (2013) but contrary to the finding from the study of Nwaiwu and Oluka (2018).

5.0 Conclusion and Recommendation

Based on the findings of the study, it was concluded that not all factor drives the level of corporate social responsibility of quoted agricultural companies in Nigeria. The study suggests that management of large companies should consider increasing their practice/involvement in corporate social responsibility disclosure. This will boost the company's goodwill, image, stakeholder favor, and market value. High-profitability companies consider increasing their involvement in corporate social responsibility disclosure

practices/activities, as this will have a positive impact on the company's image, improve performance, and help them achieve their goal of wealth maximization. Growing companies consider increasing their level of involvement in corporate social responsibility disclosure practices/activities because it will positively impact the company image and help them achieve their desired goal of growth and wealth maximization.

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EFFECT OF GREEN WORKING CAPITAL FINANCING ON THE PERFORMANCE OF MANUFACTURING FIRMS IN SOUTHEAST NIGERIA.

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Abstract

The study examined the effect of Green Working Capital Financing on the Performance of Manufacturing Firms in Southeast Nigeria. The specific objectives are to examine the effect of trade receivables and to evaluate the effect of trade payables on the profitability of manufacturing firms in southeast Nigeria. A descriptive cross-sectional research design was used for the study where a questionnaire was used to obtain primary data. The data were analyzed using SPSS 28.0 and simple linear regression. The result revealed that trade receivable has a significant positive effect on the profit with a coefficient (of 12.7%; $P < 0.001$). while trade payable has a significant negative effect on the profit of the firm with a coefficient of (-28.5%; $P = 0.001$). We, therefore, conclude that green working capital has (both positive and negative) significant effects on the performance of the manufacturing firm in southeast Nigeria. We recommended that a manufacturing firm in southeast Nigeria should endeavor to adopt green working capital financing to enable them to seek more green financing.

Keywords: Effect, Financing, Green, Working Capital, Performance

1.0 Introduction

Working capital (WC) is a financial metric representing operating liquidity available to a business, organization, or entity, including governmental entities. Working capital is part of operating capital and fixed assets such as plants and equipment. When a business needs money to cover expenses such as day-to-day operations, Purchase of raw materials, wages, electricity bill payment, payroll, etc., rather than the purchase of equipment or machinery, such financing is known as Working capital financing. This is a very common type of financing for businesses which do not have a consistent cash flow and for companies that are in a growing stage and are taking up larger projects than usual. Working capital is a difference between current assets and current liabilities. If the difference is positive or if current assets are more than current liabilities, then there is a need for the firm to finance its positive working capital requirement. However, the way firm finance its working capital and produces a positive effect on its performance in a way that it bears the environmental outcome at the most difficult time is what we refer to as green working capital financing (Baños-Caballero et al., 2016). Firms may either adopt a conservative working capital management strategy by investing larger amounts in current assets that are financed by utilizing a low proportion of short-term sources of funds.

This strategy allows a firm to reduce both the refinancing and interest risk at the same time this approach might force a firm to bear the high cost of liquidity. Conversely, a firm may adopt an aggressive working

capital management strategy by investing smaller amounts in current assets that are financed by utilizing a high proportion of short-term sources of funds. This strategy might allow a firm to reduce its financing costs and mitigate agency costs, however, this approach might push the firm to bear the high cost of illiquidity. At its simplest, green finance is any structured financial activity – a product or service – that’s been created to ensure a better environmental outcome. It includes an array of loans, debt mechanisms, and investments that are used to encourage the development of green projects or minimize the impact on the climate of more regular projects. Or a combination of both. A company can be endowed with assets and profitability but may fall short of liquidity if its assets cannot be readily converted into cash. Green working capital which might also be referred to as Positive working capital is required to ensure that a firm is able to continue its operations and that it has sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses.

1.1 Statement of the problem

Working capital financing is a significant constituent in business finance as it directly affects the company’s profitability and liquidity. The tradeoff theory supports that the tradeoff between liquidity and profitability is important since companies are likely to fail and go bankrupt if the financing of working capital is not properly considered. Firm financial managers must make sure that the firm trade receivables are more than the trades payable.

1.2 Objective of the study

The main objective of this study is to examine the effect of Green Working Capital Financing on the Performance of Manufacturing Firms in Southeast Nigeria. The specific objectives are.

- i. To examine the effect of trade receivables on the profitability of manufacturing firms in southeast Nigeria.
- ii. To evaluate the effect of trade payables on the profitability of manufacturing firms in southeast Nigeria.

1.3 Hypotheses of the study

- i. Trade receivables have no significant positive effect on the profitability of manufacturing firms in southeast Nigeria.

- ii. Trade payables have no significant positive effect on the profitability of manufacturing firms in southeast Nigeria.

2.0 Related Literature Reviewed

2.1 Conceptual Reviewed

Working Capital

Working Capital Various authors have defined the phrase “working capital” several times. The term working capital was coined by an old American peddler who would load his wagon with goods and then rush out to exchange them. The goods were referred to as “working capital” since they were what he had sold or “turned over” to make money. According to Mbella (2018), Working capital is utilized to measure a company’s potency as well as its short-term economic health. It meets the short-term financial needs of a company (Song, Yang & Yu, 2020).

The Concept of Working Capital: There are two concepts of working capital.

- i. Gross Working Capital
- ii. Net Working Capital

Gross Working Capital

Gross working capital refers to the entire amount of cash available to fund current assets. Cash, inventories, debts, and any other short-term assets that can be easily converted to cash within a year are considered current assets. Debt financing might have been used to obtain current assets, so gross working capital does not reflect a company’s true financial condition. So, as current assets are increasing, current liabilities are on the increase as well. Gross capital is indicated as total current assets (Vanessa & Cordelia 2021).

Net Working Capital

The difference between current assets and current liabilities is known as net working capital. Working capital is the term used to describe this situation. Bills payable, accumulated expenses, creditors, and any other short-term liabilities due within a year are all examples of current liabilities. When the value of current assets rises with little or no increase in current liabilities, net working capital rises. Working capital that is positive shows that the firm can fulfill its short-term obligations, but negative working capital denotes that short-term obligations would not be met and could eventually affect long-term obligations (Vanessa & Cordelia 2021).

Types of Working Capital

- i. Temporary Working Capital
- ii. Permanent Working Capital

Temporary Working Capital



This is the amount of capital used to finance and support changes in production. It is the additional capital needed to cover demand for seasonal products and other unpredictable occurrences. Temporary working capital can be financed using both short and long-term funds and its form is constantly changing. It is also referred to as fluctuating or variable working capital. It is defined as the difference between net working capital and permanent working capital (Vanessa & Cordelia 2021).

Permanent Working Capital

This is also known as fixed working capital. This is the amount that must remain invested in the business to facilitate its daily running and operations. It is the minimum amount that must remain in the business despite any fluctuations. It is financed through long-term funds (Vanessa & Cordelia 2021).

Working Capital Financing and Firm Performance

A firm's working capital requirements need to be financed, hence, the greater the requirement more capital needs to be financed. In addition, a firm may either finance its working capital with short-term or long-term sources of finance. Each source of financing has its own costs and benefits attached to it. Thus, the way working capital is financed affects the performance of an organization (Baños-Caballero et al., 2016; Bei & Wijewardana, 2012; Al-Shubiri, 2011). An attempt to decide about the level of investment and sources of financing working capital is known as the working capital policy. The prior literature asserts that firms can either be aggressive or conservative in their approach while financing working capital (Altaf & Shah, 2017; Baños-Caballero et al., 2016; Temtime, 2016; Nyabuti & Alala, 2014; Sabri, 2012; Nazir & Afza, 2009). However, being aggressive or conservative is contingent upon the level of internal resources that a firm generates (Baños-Caballero et al., 2016); capital market access (Kaddumi & Ramadan, 2012); and the volatility of the market in which it operates, nature of the internal operation and external market conditions (Kaddumi & Ramadan, 2012).

Green Working Capital Financing

Green working capital financing refers to an environmentally eco-friendly system where a corporate organization can successfully carry out financial metrics representing operating liquidity. In this regard, the firm seeks green finance which is the acquisition and utilization of funds for activities that protect the environment and deliver a fair return to investors or lenders (Berensmann & Lindenberg, 2019; Ozili, 2021). The objective of green finance is to increase the level of financial flows from financial institutions to economic

agents involved in projects and activities that preserve the environment towards achieving sustainable development goals (Lee & Baral, 2017; Force, 2015). Green finance is a recent innovation that offers an alternative financing pathway to individuals, corporations, and governments willing to fund and invest in green activities or low-carbon activities (Huang et al, 2019). The benefits of green finance include the distribution of funds to preserve the environment (Wang & Zhi, 2016), the flow of funds to sustainable trade and investment activities (Eyraud et al, 2013), low-risk financing (Taghizadeh-Hesary & Yoshino, 2019), and the development of green investment and financing instruments (Sachs et al, 2019). Despite these benefits of green finance, it is important to understand that green finance is only one aspect of sustainable finance for sustainable development. Apart from green finance, there are other sustainable finance options such as social finance, blue finance, and digital finance, among others (Ozili, 2021).

Trade Receivables

Trade Receivables form a significant part of the current asset and, therefore, working capital. It also includes the amount due to the bills of exchange receivable. These are the amounts in which the business is owned by its customers. A crafted receivables management policy goes a long way in ensuring timely collection and avoiding bad debts, if any, for the business. Each industry has a specific trade cycle, and businesses must keep their trade receivable cycle in line with the industry. A more extended trade receivable period will result in a delayed collection of cash, impacting the cash conversion cycle of the business. The importance of trade receivables is equally reinforced by most analysts while evaluating a business check receivables turnover ratio to understand the working capital management efficiency in collecting payments for credit sales undertaken by the business and to derive bad debts incurred by the business.

Trade Payables

Trade Payables form a significant part of current liabilities. It also includes the amount due to the bills of exchange payable. These are the amounts the business must pay for credit purchases made by it. A crafted payables management policy goes a long way in ensuring timely payment and cordial business relations with vendors and creditors. Each industry has a specific trade cycle, and businesses must keep their trade payable cycle in line with the industry. Also, if a business has a shortened trade payable cycle, it will have to keep more cash in hand, resulting in longer trade cash conversion cycles and more interest costs. A more extended trade payable period will make businesses make payments to their vendors after long periods. However, suppose the business can keep a short trade receivable period. In that case, such a scenario improves the business cash conversion cycle and results in the less working capital requirement, ultimately boosting

profits. Further, the importance of trade payables is equally reinforced by most analysts while evaluating a business check payables turnover ratio to understand the working capital management efficiency and timely payments to honor its obligation to its creditors. A high trade payables turnover ratio shows that creditors are being paid promptly by the business, enhancing the creditworthiness of the business. However, a very favorable ratio compared to industry practice shows that the business is not taking full advantage of credit facilities allowed by the creditors resulting in more cash requirements.

Profitability

Every company's principal goal is to be profitable. The business will not survive in the long run if it is not profitable. Otekunrin, et al (2021) noted that profit maximization is the organization's driving factor. Every company's skill is its profitability (Agha, 2014). As a result, assessing current and previous profitability and forecasting future profitability is essential. One of the most crucial objectives for business managers is to increase profitability. Managers are continuously looking for methods to boost profitability by changing the business (Vanessa & Cordelia 2021). Ratios such as Return on Equity, Return on Assets, and Net Interest Margin are used to calculate and measure profitability. The ratio of net revenue after taxes to total equity capital is known as return on equity (ROE). It is the rate of return on investment earned by the organization's stockholders. Return on assets is another key statistic for assessing a company's profitability (ROA). It is a percentage of total assets divided by total revenue. It evaluates a company's ability to generate money via the use of its available assets (Vanessa & Cordelia 2021).

2.2 Theoretical Review

Trade-off Theory

This theory was initiated by Modigliani and Miller (1958), and it says that companies should borrow funds to the point where the tax benefit from debt is balanced with the bankruptcy cost. This means that debt financing should be employed. The amount borrowed should increase to a level where the tax benefit, in whichever form, is either more significant than or equal to the cost that can be occurred through bankruptcy.

Pecking Order Theory

Myers (1984) explained that firms most likely prefer to finance new investments first with internally raised funds, i.e; retained earnings, then with debt and issue equity as a final resort. Pecking order theory is believed to be an alternate theory to trade-off theory where the firm has a perfect hierarchy of financing decisions. Pecking order theory elucidates that the firm tries to utilize its internal financing sources first i.e; retained

earnings then issues debt and then would issue equity as a last result. Joseph, Willy, and Patrick (2016) suggested that firms should use shareholders' funds to finance business operation activities before resorting to borrowing. The study further recommends that internal and external business environmental factors should be considered before a choice of business financing is chosen. Summarily, this study is anchored on the pecking order theory as it is directly promoting effective management of working capital and is the least risky.

2.3 Empirical Review

Akoto, Awunyo-Vitor, and Angmor (2013) analyzed the relationship between working capital management practices and the profitability of listed manufacturing firms in Ghana. The study used data collected from annual reports of all the 13 listed manufacturing firms in Ghana covering the period from 2005-2009. Using panel data methodology and regression analysis, the study found a significant negative relationship between Profitability and Accounts Receivable Days. However, the firms' Cash Conversion Cycle, Current Asset Ratio, Size, and Current Asset Turnover significantly positively influence profitability. The study suggests that managers can create value for their shareholders by creating incentives to reduce their accounts receivable to 30 days. It is further recommended that enactments of local laws that protect indigenous firms and restrict the activities of importers are eminent to promote increased demand for locally manufactured goods both in the short and long runs in Ghana.

Ogbuji and Ogunyomi (2014) on working capital management policy and financial performance in the Nigerian foods and beverage industry, where Nestle Nigeria Plc was the case study which covered a period of five (5) years, 2008 to 2012. Working capital management was measured by the cash conversion cycle and financial performance was measured by return on assets. The results revealed that a negative significant relationship existed between working capital management and profitability performance and at the same time a negative insignificant relationship does subsist between working capital management and liquidity performance.

Osundina (2014) examined the relationship between working capital management and profitability and focused on the quoted food and beverages manufacturing firms in Nigeria. Working capital management was measured by an aggressive investment policy, account collection policy, cash conversion cycle, and net operating profit employed to measure profitability. The study made use of primary data and the results of the analysis revealed that working capital management had a significant positive relationship with profitability.

Salman, Oyetayo, and Oriowo (2014) investigated the relationship between working capital management on organizational profitability in Nigeria. Data were collected from audited financial statements of 20 manufacturing companies quoted in the Nigerian Stock Exchange between 2005 to 2013. Return on Assets (ROA) and Return on Equity (ROE) were used as proxies for the measurement of profitability while Panel data methodology was employed, and Pearson correlation moment coefficient and multiple regressions and the method of estimation is Ordinary Least Squares (OLS). The result revealed that working capital has a negative and significant relationship with Return on Assets (ROA) and Return on Equity (ROE) and this showed that firms' performance increases if Cash Conversion Cycle reduces.

Kazi (2015) on the working capital management of diverse industries along with their solvency in Bangladesh. The components of working capital management employed are average collection period, inventory turnover, current asset to total asset, current liabilities to total asset, and current ratio while return on assets and return on equity were used as proxies to measure profitability. Secondary data which is the annual reports of the companies in Bangladesh is used for the study. The study cut across almost all sectors of the economy. The study reports that failure to manage working capital will eventually lead to insolvency thereby resulting in bankruptcy, hence there is a relationship between working capital management and the profitability of the industry.

Francis (2015) conducted a study on the relationship between working capital and profitability of cement companies in Kenya for five years period from 2006 to 2010, operating income is used as a proxy for profitability while working capital management was measured by cash conversion cycle and spearman's correlation analysis together with a multivariate regression model were employed to observe the relationship between working capital management and profitability. The findings revealed that efficient working capital management increases profitability.

3.0 Methodology

A descriptive cross-sectional research design was used for this study. The respondents were drawn from the various departments of the manufacturing company, which included the finance and audit department, the procurement department, and operations/marketing. The study used purposive sampling to select these business organizations. The questionnaire results were analyzed in SPSS 28.0 using simple linear regression

analysis. The study aimed to investigate the effect of green working capital on the performance of manufacturing firms in Southeast Nigeria.

Model Specification

The model specification used in this research work is simple linear regression analysis, which is defined as follows based on the relationship between predictors and dependent variables:

$$Y = \alpha_0 + \alpha_1 x_1 + \mu \dots \dots \dots (1)$$

$$Y = f(X)$$

Where Y=Dependent variable represented by profitability

x_1 = Predictors variable; α_0 = Slope or intercept; α_1 = Regression coefficients; μ = Error term

Therefore, to examine the effect of green working capital on the performance of manufacturing firms in Southeast Nigeria. The model can be stated in the econometric model form below as in equation 3 below.

$$PRF = \beta_0 + \beta_1 (TRR) + \beta_2 (TRP) + \mu \dots \dots \dots (3)$$

Where: TRR= Trade receivable; TRP= Trade payable; PRF= Profitability

4.0 Data Analysis and Interpretation

The section contains the presentation, analysis, and interpretation of data gathered from respondents in the various firms studied. The responses were categorized by coding them in a Likert scale format to achieve our objective for this study. The analysis of the structured questionnaire was done using a statistical package for social science (SPSS version 28.0).

Table 1: Response Rate

	Frequency	Percentage	Cumulative Percent
Returned	129	83.23	83.23
Unreturned	26	16.77	100
Total	155	100	

Source: Field Work 20223

The above table 1 shows that one hundred and seventy (155) copies of the questionnaire were distributed but only one hundred and fifty-two (129) were returned, while the remaining were not returned. The unreturned amounted to twenty-one (26). The reason for the unreturned includes the following:

- Some survey participants misplaced their survey.
- Finally, a small number of respondents regrettably chose not to complete the survey, and this was noted as a void to prevent erroneous interpretations.

Table 2: Demographic Data Presentation (n=129)

	Frequency	Percentage
Gender		
Male	89	69%
Female	40	31%
Marital Status		
Single	43	33%
Married	69	54%
Divorced/Widowed	17	13%
Age		
20-29 years	32	25%
30-39 years	43	33%
40-49 years	33	26%
>50 years	21	16%
Working Experience		
< 5 years	34	27%
5-10 years	59	45%
11-20 years	21	16%
>20 years	17	13%
Department		
Operations/Marketing	88	68%
Finance and Auditors	19	15%
Procurement	22	17%
Qualification of Respondents		
Bachelor's Degree	71	55%
Master's degree	22	17%
PhD	8	6.0%
Professional Certificates	28	22%

Source: Field work 2023

Table 2 is the demographic profile of the respondents, 69% of the respondents are male while 31% of the respondents are female. Marital status showed that married people responded more to the questionnaire with 54% response rate followed by single with 33% response rate. In terms of age, most of the respondents are within the age bracket of 30-39 years, while the least response was 50 years and above.

Majority of the respondents have a working experience between 5-10 years which recorded a response rate of 45%, while the least working experience is >20 years. In terms of professional category most of the respondents of this questionnaire were in operation/marketing department with 68% response rate followed by procurement with 17% response rate. Lastly when considering the academic qualification of the respondents most of them are bachelor's degree holders with 55% response rate, followed by master degree

holders with 17% response rate, professional certificate and PhD with 22% and 6% response rate respectively.

Table 3: Spearman's Correlation of the variables

	Profitability	Trade Receivables	Trade Payable
Profitability	1		
Trade Receivables	0.672[0.002]*	1	
Trade Payable	-0.581[0.009]*	0.617[0.201]	1

[] represent the probability value; * represent a significant correlation.

Table 3 represents the correlation analysis, the variables are found to be strongly and positively and negatively correlated with the dependent variable respectively, the probability value < 0.05 indicates that the relationship did not occur by chance otherwise they did not occur by chance.

Table 4: Estimation of Result and Interpretation

Variables	Coefficients	T-Statistic	P-value	Std. Error	95% Confidence Interval	
					Lower	Upper
Constant	25.311	1.250	0.239	20.30	[-19.38771]	[70.01048]
Trade Rec.	0.127	9.769	0.000	0.013	[-0.561327]	[0.967521]
Trade payable	-0.285	9.827	0.001	0.029	[-0.138771]	[0.519869]
R ²	0.695					
Adjusted R ²	0.647					
F-stat	103.57					
Prob of (F-stat)	0.0001					

Computed with E, Compiled by the Author

The Adjusted R² is 0.6472 which means that approximately 65% of the variations in the dependent variable are explained by the predictor variables. The F-stat result is significantly higher at 103.57, showing that the predictor variables jointly explain the variations in the model. We discovered that all the predictor variables are statistically significant at the 5% level of significance using the t-stat values. At a 5% threshold of significance, the trade receivables are positive and statistically significant. A unit change in the trade receivables will result in 12.7% change in the profitability of manufacturing firms in southeast Nigeria, assuming all other factors remain constant. At a 5% level of significance, trade payable is negative and statistically significant. Holding other variables constant, a percentage change in the trade payable will lead to 28.5% change in the profitability of the manufacturing firm in southeast Nigeria.

Hypothesis Testing

H₀₁: Trade receivables have no significant positive effect on the profitability of manufacturing firms in southeast Nigeria.

H₀₂: Trade payable has no significant positive effect on the profitability of manufacturing firms in southeast Nigeria.

Decision

The result of the regression analysis for each hypothesis indicates that at 5% level of significance, H₀₁ and H₀₂ are to be rejected because the probability value is <0.05 as shown in table 4 above. Hence, we conclude that trade receivable and trade payable have a significant effect on the profitability of the manufacturing firms in southeast Nigeria.

Discussion of Results

The study focuses on examining the effect of Green Working Capital Financing on the Performance of Manufacturing Firms in Southeast Nigeria. A cross-sectional survey was adopted for the study and a well-structured questionnaire was distributed to the manufacturing firms within the southeastern part of Nigeria. Out of 155 distributed questionnaires 129 responded and returned the questionnaire, the result obtained from this study are purely from the opinion of the respondents.

Results, as obtained from table 3, indicate that trade receivable and trade payable were found to be positive and negative, and statistically significant at 5% level of significance. This implies that a unit increase in the trade receivable variable will cause a corresponding unit to increase in the profitability of the manufacturing firm in southeast Nigeria given that the coefficient of trade receivable is (12.7%; P<0.001). Whereas a unit increase in the trade payable variable will cause a corresponding unit to decrease in the profitability of the manufacturing firm in southeast Nigeria given that the coefficient of trade payable is (-28.5%; P=0.001).

5. Conclusion

Based on the result trade receivable has a significant positive effect on the profit of manufacturing firms in southeast, Nigeria. While trade payable has a significant negative effect on the profit of the manufacturing firm in southeast Nigeria. We, therefore, conclude that green working capital has (both positive and negative) significant effects on the performance of the manufacturing firm in southeast Nigeria.

Recommendation



A manufacturing firm in southeast Nigeria should endeavor to adopt green working capital financing to enable them to seek more of green financing.

We recommend the following,

- i. Manufacturing firms should endeavor to increase trade receivables since a unit increase adds value to the profit of the firm.
- ii. The manufacturing firm should endeavor to reduce trade payable since a unit increase reduces the profit of the firm.

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FOREIGN EXCHANGE RATES ON THE PERFORMANCE OF AGRICULTURAL EXPORT IN NIGERIA

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Abstract

For the past thirty years, the function of exchange rates as an essential aspect of agricultural economics was not paid much attention. The decline on agricultural export was caused by the overvalued dollar because of its relative expense in other economies. This led to despondency prices and fewer farm profits, causing an undervaluation of farm resources and oversupply of output. With this, the study examines the effect of foreign exchange rates on the performance of agricultural export in Nigeria. Despite the emphasis placed on foreign exchange for agricultural promotion in Nigeria, the agricultural export in Nigeria is still not performing well. The time frame was from 1986 to 2021 and the adopted research design was ex post facto, in which the tool of analysis employed was the ARDL, ECM method, co-integration and unit root test as finding revealed that foreign exchange rates on the performance of agricultural volume and value added had negative and insignificant effect in Nigeria. While foreign exchange rates on the performance of agricultural capacity utilization had a positive and significant effect. Giving this finding, the study recommends that Nigerian government should moderate and regulate the rate of exchange activities to make certain that it brings about better performance in the agricultural sector. Also, she should strongly attempt to make better the stand of the economy internationally with other nations of the world to expand the market for Nigerian agricultural exports. Finally, the government should change the focus of its policy in direction to the external agricultural sector and making sure that it adds in the most favourably way to output performance. As an intentional policy, the government should give support to rural area agriculture by which investors in distinct communities and commodities should be encouraged to set up agricultural industries, which will be solely on local raw materials comprising equipment and machines. Hence, this will increase and advance the market capacity utilization and value added locally.

Keywords: Foreign Exchange Rate, Output, Capacity Utilisation and Value Added

1. Introduction

The rapidly increasing global economy in today's world with a constantly changing technology and the laws of trade internationally, has affected the way exchange rate plays its role in valuing farm equipment and production. For many years, the role of exchange rates as an integral part of agricultural economics was overlooked (Kristinek & Anderson, 2002). It was Schuh (1974) in his work titled the role of exchange rates in agricultural trade that brought this topic to bare. His evidence in support of the idea is that the drop in agricultural exports due to their relative expense in other nations was caused by the overvalued dollar. His view was that while many variables affect agriculture, the exchange rate plays a role in all aspects of agriculture (Kristinek & Anderson, 2002).

Nigeria got her independence in 1960 and during this period, agriculture played a dominant role in her economy, but it was soon taken for granted because the government gave it a very little support. This little support provided by government for agricultural development was concentrated on export crops like cocoa, groundnut, palm produce, rubber and cotton as self-sufficiency in food production seemed not to pose any problem worthy of public attention (FMOAWARD, 2018).

The agriculture in Nigeria started witnessing some problems and these issues were clear from rising food prices, increasing food supply short-fall and declining foreign exchange earnings from agricultural exports. However, not much rational concern was shown because the problems were thought to be the temporary effects of a series of crises which eventually culminated in the civil war (1967 – 70) (FMOAWARD, 2018).

After 1960, from 1970 to 1979, the agricultural situation worsened in Nigeria because of rising food import bills, widening food supply-demand gaps and sharp decrease in government revenue from agriculture, in foreign exchange earnings from agricultural exports. The situation was further compounded by the residual effects of the civil war, severe droughts in some parts of the country, government fiscal and monetary policies and above all, an “oil boom” which created serious distortions in the economy and accelerated the rate of migration of labour from agriculture (FMOAWARD, 2018).

As stated by Abolagba et al., (2010) between 1970 and 1974, agricultural exports as a percentage of total exports fell from about 43 percent to slightly over 7 percent. Export of agricultural produce in the mid-1970s to the mid-1980s in Nigeria witnessed a sharp decrease by 17 percent. Abolagba et al., (2010) emphasized the fact that Nigeria has lost its role as one of the world’s leading exporters of agricultural commodities.

According to FAOSTAT (2017), in 1961, Nigeria exported 197,000 tonnes of cocoa beans. In 1970, it went up to 304,000 tonnes and gradually went down to 153,000 tonnes in 1980. However, this number rose to a staggering 485,000 tonnes in 2006, and unfortunately decreased to 248,000 tonnes in 2014. Natural rubber was exported to the tune of 58,000 tonnes in 1961 and subsequently increased to 147,000 tons in 1990 and in 2014 151,000 tonnes FAOSTAT (2017).

One of the important factors of world trade is exchange rate, which has received much notice in the circumstances of world imbalances. The subject of exchange rate fluctuation came to be a topical issue in Nigeria because it is the goal of every economy to have a stable rate of exchange with its trading partners (Slowe, 2013). In Nigeria, this aim was not achieved minding the way the government went on

underestimating the naira and okayed the Structural Adjustment Programme (SAP) in 1986. Not achieving this success, placed the Nigerian agricultural export under participating in a constant exchange rate fluctuation. The foreign exchange reforms that facilitated a cumulative depreciation of the effective exchange rate were expected to increase the domestic prices of agricultural exports and hence boost domestic production (Slowe, 2013). A serious impediment on economy development is fluctuation, which makes investment riskier and more problematic. Potential investors will invest in a foreign location only if the expected returns are high enough to cover for the currency risk (Gerado, 2002).

For the agricultural sector, a fall in the real exchange rate indicates a reduction in the relative prices of traditional agricultural exports and import competing products of agriculture. Thus, as the value of the Naira rises, the Naira price of any given Nigerian agricultural export becomes more expensive to foreign buyers, thereby increasing export volume (output) and adding value to the Nigerian goods. In addition, the introduction of export volume (output), capacity utilisation and value added will help cushion the dependency on oil export of the country and add to the economy's GDP.

On this note, if foreign exchange is properly curtailed or kept low to agriculture, it will help agriculture export in Nigeria perform better and contribute to her GDP. Despite the improvement of agricultural products in Nigeria, the performance of agricultural export is below expectation because of high exchange rate. The major problem, however, is that the floating exchange rate from its inception, frequency and instability of the exchange rate movements has raised concerns over the effect of such movements on the performance of trade flows of agricultural export. It is on this basis that the work examines foreign exchange fluctuation on the performance of agricultural export in Nigeria.

Previous studies such as Adekunle et.al., (2019) who investigated from 1981 to 2016 how the dynamics of real exchange rate affect performance of agriculture in Nigeria using the Nonlinear Autoregressive Distributed Lag (NARDL) method found a negative relationship between both variables. Also, Akinbode et.al., (2018) who determined the effect of exchange rate volatility on Nigeria's agricultural export performance using annual data from 1980-2015, employed Generalized Autoregressive Conditional Heteroscedasticity (GARCH-1,1) model which was used to generate the exchange rate volatility series and subsequently incorporated into the Autoregressive Distributed Lag (ARDL) Model for determining factors affecting agricultural exports (cocoa and rubber), found an insignificant effect between both variables. However, none of these studies used output, capacity utilisation and value added to measure agricultural export. Also, the study window is from 1986 to 2021. Based on these identifications, the study fills a research gap.

2. Literature Review and Hypothesis Development

2.1 Conceptual Issues

Concept of Foreign Exchange

When the currency of a country is giving out for the currency of another country at any rate is known as exchange rate. The external value of each currency is reflected in the country's economic conditions in general and the purchasing power of the currency relative to that of other currencies (Ani, Ugwunta & Okanya, 2013). In other words, for international traders with a given price, the major source of uncertainty is the exchange rate at which they can translate their sales revenue in foreign currency into local currency (Adubi & Okunmadewa, 2009).

Concept of Agricultural Export

Export of agricultural products are better motivation made available by various governments on products intended for other country's market to support increase in global or other economy trading. Accordingly, export agriculture refers to money granted by the state which are subject to chance on export performance. They may take the form of, for example, cash payments, disposal of government stocks at below-market prices, subsidies financed by producers or processors because of government actions such as assessments, marketing subsidies, transportation and freight subsidies, and subsidies for commodities contingent on their incorporation in exported products (FTIS, 2019).

Concept of Performance

Taticchi et al., (2008) stated that firm performance is the value, which is produced as a result of a certain activity. Each firm is established to fulfil specific purposes. When all performance factors are effectively utilised, turn out worth gets larger or astronomical than the expected worth, thus making the firms to survive or live longer. Competitive markets and the dynamics very likely become better of their performance to grow their profits and market value of the firm. The production process since the mid-1980s have been controlled by the firm. In this aspect, firms became aware that keeping up with continuously changing conditions is possible only by understanding firm performance, and they aimed for healthy growth (Taticchi et al., 2008).

The main purpose of this work was to examine the effect of foreign exchange rate on the performance of agricultural export in Nigeria. Other related purposes are: to evaluate the effect of foreign exchange rate on the performance of agricultural export volume; agricultural export capacity utilization and agricultural export value added in Nigeria

The hypotheses of the study are stated in null forms and tested from the purposes of the work:



H_{01} : Foreign Exchange Rate has no significant effect on the Performance of agricultural export Volume in Nigeria

H_{01} : Foreign Exchange Rate has no significant effect on the Performance of agricultural export Capacity Utilization in Nigeria

H_{01} : Foreign Exchange Rate has no significant effect on the Performance of agricultural export Value Added in Nigeria

2.2 Empirical Review

Aliyu, Mohammed and Behiye (2021) examines the nexus between Competitively Valued Exchange Rates, Price level, and Growth Performance in the Turkish Economy. An existing understanding from the GARCH using annual data was carried out from 1980 to 2020 within the structure of the Autoregressive distributive lag test. Also employed, was the Error Correction Mechanism and the Bayer and Hanck Co-integration (BHC) test. It was shown that the way the two variables used induced economic performance and external trade competitiveness both in the short and long run.

Adekunle, Tiamiyu, Odugbemi and Ndukwe (2019) investigates the possible asymmetric effect of real exchange rate dynamics on agricultural performance in Nigeria over the period of 1981 to 2016, due to limited data constraints. The Nonlinear Autoregressive Distributed Lag (NARDL) method was adopted. A combination of nonstationary and stationary variables was used and was established through the ARDL unit root test. Based on the bounds test for co-integration, long-run relationship does not exist amongst the variable, having controlled for some other variables. Findings showed that the significant fundamentals were that the study was both positive and negative between both variables.

Akinbode and Ojo (2018) determines the effect of exchange rate volatility on Nigeria's agricultural export performance using annual data from 1980-2015. The Generalized Autoregressive Conditional Heteroscedasticity (GARCH-1,1) model was used to generate the exchange rate volatility series which was subsequently incorporated into the Autoregressive Distributed Lag (ARDL) Model for determining factors affecting agricultural exports (cocoa and rubber). Among the variables was revealed a long-run relationship giving the Bounds test. With that, the result signifies that in the long and short-run volatility of exchange rate has no positive effect on export.

Vellianitis-Fidas (1976) examines effect of exchange rate changes and demand for U.S. agricultural exports.

Two steps were taken to test this hypothesis: first, a cross-sectional study using stepwise ordinary least squares (OLS) of demand for U.S. agricultural exports (namely, wheat, corn, and soybeans) by major U.S. trading partners in 1971-1973 and second, past exchange rate changes in other countries were examined to determine if changes in these rates explained variations in imports over time, both from the U.S. and the world in the period 1954-1969. Both steps supported the hypothesis that special characteristics of the agricultural sector negate the effect of exchange rate changes in the demand for U.S. agricultural exports. For the OLS step, exchange rate changes, per capita income growth, population growth, CPI, foreign supplies, expected export quantities for the U.S. and the rest of world (ROW), and the actual export quantities of both the U.S. and the ROW. In this step, exchange rate was not significant in the wheat equation and not important in the corn and soybean equations. Almost none of the variation in changes in quantities exported for 1971 to 1972 and 1972 to 1973 is explained by the variation in the exchange rates.

2.3 Theoretical Framework

Clarks' Neoclassical Theory

The theoretical framework that best suits this study is the Clarks (1973) model, which evaluates the relationship between the exchange rate volatility and trade flows. It assumes a competitive firm with no market power producing only one commodity which is sold entirely to one foreign market and does not import any intermediate inputs. The firm is paid in foreign currency and converts the proceeds of its exports at the current exchange rate, which varies in an unpredictable fashion, as there are assumed to be no hedging possibilities, such as through forward sales of the foreign currency export sales. Moreover, because of costs in adjusting the scale of production, the firm makes its production decision in advance of the realization of the exchange rate and therefore cannot alter its output in response to favourable or unfavourable shifts in the profitability of its exports arising from movements in the exchange rate. In this situation, the variability in the firm's profits arises solely from the exchange rate, and where the managers of the firm are adversely affected by risk. Greater volatility in the exchange rate with no change in its average level leads to a reduction in output, and hence in exports, to reduce the exposure to risk. Similarly, Koren and Szeidl (2003) suggest that exchange rate volatility should affect trade volumes through the covariance of the exchange rate with other macroeconomic variables.

3./ Methodology

Ex-post facto was the adopted research design because the events the researcher is studying had already



taken place. This design can also be applicable for studies geared toward ascertaining the cause-effect association between the independent and dependent variables (Onwumere, Onodugo, & Ibe, 2013). Evaluating the cause – effect relationships is the significant point of this study; hence, the data are time series, gotten from CBN statistical bulletins and NBS, where inflation and interest rate are introduced as control variables covering the period 1986 - 2021. The annualised secondary data was analysed with the aid of Autoregressive Distributed lag (ARDL) and Error Correction Mechanism (ECM), as well as employing the co-integration method to test for the long-run effect among the series. In other words, the underlining postulation was that the two variables are blended in order 1 or I (1).

Model Specification

Giving the theoretical review, the econometric model employed in this study to examine the effect of foreign exchange rates on the performance of agricultural export in Nigeria will be formulated following the study of Umaru et al. (2013) and Karimi (2014) with modification by including real exchange rate, agricultural export volume, agricultural export capacity utilisation and agricultural value added to the contribution to GDP. Thus, the model for this study was specified as:

$$AVC = f(RFE, INF, INT) \quad (1)$$

$$AGCU = f(RFE, INF, INT) \quad (2)$$

$$AGVA = f(RFE, INF, INT) \quad (3)$$

Where: AVC = Agricultural Volume (Output); AGCU = Agricultural Capacity Utilisation; AGVA = Agricultural Value Added; RFE = Real Foreign Exchange; INF = Inflation Rate (control variable); INT = Interest Rate (control variable)

Incorporating our effect of foreign exchange rates on agricultural export performance association into the unrestrained ARDL mechanism structure to get the qualified (closed off) auto-regressive distributive lag steady-state template (by exerting OLS mechanism to gauge the general ARDL model), in the form:

$$\Delta AVC_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta AVC_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta RFE_{t-j} + \sum_{k=0}^o \alpha_3^k \Delta INF_{t-k} + \sum_{m=0}^p \alpha_4^m \Delta INT_{t-k} + \lambda_1 AVC_{t-1} + \lambda_2 RFE_{t-1} + \lambda_3 INF_{t-1} + \lambda_4 INT_{t-1} + \varepsilon_t \quad (4)$$

$$\Delta AGCU_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta AGCU_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta RFE_{t-j} + \sum_{k=0}^o \alpha_3^k \Delta INF_{t-k} + \sum_{m=0}^p \alpha_4^m \Delta INT_{t-k} + \lambda_1 AGCU_{t-1} + \lambda_2 RFE_{t-1} + \lambda_3 INF_{t-1} + \lambda_4 INT_{t-1} + \varepsilon_t \quad (5)$$

$$\Delta AGVA_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta AGVA_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta RFE_{t-j} + \sum_{k=0}^o \alpha_3^k \Delta INF_{t-k} + \sum_{m=0}^p \alpha_4^m \Delta INT_{t-k} + \lambda_1 AGVA_{t-1} + \lambda_2 RFE_{t-1} + \lambda_3 INF_{t-1} + \lambda_4 INT_{t-1} + \varepsilon_t \quad (6)$$

$\lambda_1 - \lambda_4$ = Long run multipliers

k = Belonging to identified best lags orders of the variables entering ARDL-ECM

$\alpha_1 - \alpha_4$ = coefficients of short run dynamics

t = time

Δ = First difference operator

α_0 = Intercept or drift operator

ε_t = Error term

Following position of Menike (2016), the relationship between foreign exchange rates and agricultural exports is specified as:

$$\Delta AVC_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta AVC_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta RFE_{t-j} + \sum_{k=0}^o \alpha_3^k \Delta INF_{t-k} + \sum_{m=0}^p \alpha_4^m \Delta INT_{t-k} + \delta ect_{t-1} + \varepsilon_t \quad (7)$$

$$\Delta AGCU_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta AGCU_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta RFE_{t-j} + \sum_{k=0}^o \alpha_3^k \Delta INF_{t-k} + \sum_{m=0}^p \alpha_4^m \Delta INT_{t-k} + \delta ect_{t-1} + \varepsilon_t \quad (8)$$

$$\Delta AGVA_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta AGVA_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta RFE_{t-j} + \sum_{k=0}^o \alpha_3^k \Delta INF_{t-k} + \sum_{m=0}^p \alpha_4^m \Delta INT_{t-k} + \delta ect_{t-1} + \varepsilon_t \quad (9)$$

Data Analysis and Results

Testing for Unit Root

Data from time series are generally described by a stochastic pattern that can be eliminated by differentiation. Therefore, the unit root is a test of the non-stationary or stationary existence of the data employed in this description. This is to find out whether there is a spurious or nonsensical relationship between foreign exchange rates and performance of agricultural export in Nigeria. Thus, as shown in table 1.1, the study employed Augmented Dickey-Fuller (ADF) techniques to test and verify the series unit root property and model stability.

Table 1.1: Result of the Unit Root Test

Variable	ADF Test Statistics		
	ADF	Critical Value	Order of Integration
AVC	-6.978246	-4.309824*	I(1)
AGCU	-3.508251	-3.207094***	I(1)
AGVA	-5.840353	-4.252879*	I(1)
INT	-4.204566	-3.580623**	I(1)
INF	-3.707572	-3.562882**	I(0)
RFE	-3.477945	-3.204699***	I(0)

Source: Authors Computation, 2022 (Eviews-12)

From Table 1.1, it could be observed that the results from ADF showed that four of the variables (which are AVC, AGCU, AGVA and INT) are integrated at order one; while two of the variables (which are INF and RFE) are integrated at order zero.

The variables which were found to be stationary at first difference, have their ADF test statistics as: -6.978246, -3.508251, -5.840353, -4.204566; and they were found to be greater than the critical values of: -4.309824 (at 1%); -3.207094 (at 10%); -4.252879 (at 1%); -3.580623 (at 5%) respectively.

Co-integration Test (Bound Test Approach) Results

If there is equilibrium relationship or a long term in the variables, it means that they are co-integrated. To avoid false or fake regression situations there must be a pre-test. Table 1.2 presents the summary results of ARDL bounds test for Co-integration for the three models (agricultural volume model, agricultural capacity utilization model; and for agricultural value-added model) using AIC recommended lags

Table 1.2: Bound Test-Co-integration Results

AVC-Model	F-statistic	3.642942**			Decision	
	Significance	5%	I(0)	2.39		Co-integrated
			I(1)	3.38		
AGCU-Model	F-statistic	3.793283**			Co-integrated	
	Significance	10%	I(0)	2.39		
			I(1)	3.38		
AGVA-Model	F-statistic	15.31406**			Co-integrated	
	Significance	5%	I(0)	2.39		
			I(1)	3.38		

Note: ** significant at 5%

Source: Authors Computation, 2022 (Eviews-12)

The co-integration test result from Table 1.2 showed that there is a long-run or equilibrium relationship on foreign exchange rates and AVC. This was captured by the F-statistic value of 3.642942, seen to be greater than the lower ($I(0)$) and upper bound ($I(1)$) critical values of 2.39 and 3.38 respectively at the 5% significance level.

Co-integrating relationship was also found to exist between foreign exchange rates and AGCU, as captured by the F-statistic value of 3.793283, found to be greater than the lower ($I(0)$) and upper bound ($I(1)$) critical values of 2.39 and 3.38 respectively; and also at the 5% significance level.

Lastly, there is an evidence of co-integrating relationship between foreign exchange rates and AGVA, as the F-statistic value of 15.31406 is greater than the lower ($I(0)$) and upper bound ($I(1)$) critical values of 2.39 and 3.38 respectively at the 5% significance level.

The study thus, concludes that long-run or equilibrium relationship exists between the independent and dependent variables in Nigeria within the period under review; and as such the study proceeds to conduct error correction models.

Model Estimation and Results Evaluation

The study has established positive co-integrating connection between foreign exchange rates and performance of agricultural export in Nigeria; as such, the study moves to calculate the long-run models and error correction. The ARDL-ECM result examines in what manner the ARDL model changes to the long-run equilibrium. The study utilised a general-to-specific modelling approach to derive a satisfactory reduced short-run dynamic policy captured in Table 1.3, 1.4, and 1.5.

Hypothesis one

Foreign Exchange Rates and Performance of agricultural export Volume in Nigeria

Table 1.3: ARDL Regression Result

Dependent Variable: D(AVC)

ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AVC(-1))	-0.7055	0.184346	-3.82706	0.0123
D(RFE)	9.164678	1.482621	6.181402	0.0016
D(RFE(-1))	-0.98868	1.094113	-0.90363	0.4076
D(RFE(-2))	4.472565	1.236556	3.616953	0.0153
D(INF)	9.212627	2.723365	3.38281	0.0196
D(INF(-1))	-11.9096	2.45619	-4.8488	0.0047

D(INF(-2))	7.366478	2.241361	3.28661	0.0218
D(INT)	-14.3228	3.202153	-4.47287	0.0066
D(INT(-1))	21.32017	3.551261	6.003549	0.0018
D(INT(-2))	21.43774	3.505539	6.115392	0.0017
CointEq(-1)*	-0.560133	0.087799	-6.379758	0.0014
R-squared	0.841708	Mean dependent var	0.85	
Adjusted R-squared	0.611466	S.D. dependent var	2.836829	
F-Statistics (and P-value)	9.768266 (0.00002)	Akaike info criterion	4.257852	
Durbin-Watson stat	2.007263	Schwarz criterion	5.066691	

Source: Authors Computation, 2022 (Eviews-12)

The $ect(-1)$ depicts adjustment of the speed to bring back the long run in the activity model coming after an interruption. The coefficient of the estimated $ect(-1)$ equals -0.5601 puts forward a prompt speed of adjustment back to the long-run equilibrium. The coefficient is appropriately signed and to a greater degree significant at the 1 percent significance level. This hugely significant effect emphasised the fact that the existence of a stable long-term relationship.

The coefficient of determination (R-square) indicates that the model was reasonably fit in prediction. It showed that 84.17% changes in AVC were unanimously owed to RFE, INF and INT, while 15.83% not included variations was represented as the error term.

The overall importance of regression model, which is the F-statistic reveal a significant result as examined. The value of the F-statistic captures it at 9.76 and its associated value of 0.000002 at 5% level was found to be significant.

It is further proof in the result that among the variables, there is absence of autocorrelation as proven by Durbin Watson (DW) statistic of 2.00. It showed that the data can be depended upon and are impartial.

Hypothesis Two

Foreign Exchange Rates and Performance of agricultural export Capacity Utilization in Nigeria

Table 1.4: ARDL Regression Result

Dependent Variable: D(AGCU)

ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AGCU(-1))	-0.45659	0.094461	-4.83358	0.0013
D(RFE)	-6.02E-05	0.000361	-0.16661	0.8718
D(RFE(-1))	0.002052	0.000488	4.204631	0.003
D(RFE(-2))	-0.00069	0.000517	-1.33548	0.2185
D(RFE(-3))	0.001405	0.000497	2.827868	0.0222
D(INF)	-0.0029	0.000633	-4.5786	0.0018
D(INF(-1))	0.00344	0.000834	4.12341	0.0033

D(INF(-2))	0.003392	0.000708	4.793683	0.0014
D(INF(-3))	0.003382	0.000742	4.556027	0.0019
D(INT)	85.12271	17.93108	4.747215	0.0015
D(INT(-1))	45.25082	10.14136	4.462009	0.0021
D(INT(-2))	37.72435	12.42301	3.03665	0.0161
D(INT(-3))	30.40713	10.16939	2.990065	0.0173
CointEq(-1)*	-0.38839	0.056976	-6.81672	0.0001
R-squared	0.930433	Mean dependent var		-0.03316
Adjusted R-squared	0.845958	S.D. dependent var		4.213092
F-Statistics (and P-value)	8.2556 (0.000)	Akaike info criterion		4.142062
Durbin-Watson stat	2.22199	Schwarz criterion		4.966539

Source: Authors Computation, 2022 (Eviews-12)

The Error Correction Model (ECM) parameter is negative, less than unity and significant at 5% level as expected. The ECM is an error correction term in the model to restore back equilibrium and validates that there exists a long run equilibrium relationship among the variables. The value of the ECM is 38.83%, meaning that the system corrects (or adjusts to) equilibrium in the following year at speed of 38.83% which is good.

To show the elucidatory capacity of the model and the reliability of the estimates, the coefficient of determination (R-square) was deployed. It indicates how the model was in a sensible way fit in forecasting. It emphasized that 93.04 percent alterations to AGCU were collectively due to RFE, INF and INT, at the same time 6.96% represents the white noise.

To determine the whole importance of the regression model in the same extent, the F-statistic was used to evaluate it and was revealed that the results are significant. 8.25 captures the worth of the F-statistic and its affiliated p-value of 0.000 having been discovered to be significant at 5% level. The Durbin Watson (DW) statistic of 2.22 in the model emphasized that there is absence of autocorrelation between the independent and dependent variables (as it fell within the acceptable range of 1.5 and 2.4). This proves that unbiased estimates can be depended on to make decision on policy.

Hypothesis Three

Foreign Exchange Rates and Performance of agricultural export Value Added in Nigeria

Table 1.5: ARDL Error Correction Regression

Dependent Variable: D(AGVA)

ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AGVA(-1))	1.037668	0.086699	11.96858	0.0013
D(AGVA(-2))	0.035936	0.056903	0.631519	0.5725

D(AGVA(-3))	-2.63654	0.20328	-12.97	0.001
D(REF)	29.08825	1.894067	15.35756	0.0006
D(REF(-1))	-16.9905	1.243886	-13.6592	0.0008
D(REF(-2))	12.38867	0.987773	12.54202	0.0011
D(INF)	27.31271	2.244818	12.167	0.0012
D(INF(-1))	-29.02	3.057898	-9.49018	0.0025
D(INF(-2))	-25.5089	2.359674	-10.8104	0.0017
D(INF(-3))	-44.9569	2.767935	-16.242	0.0005
D(INT)	9.28747	2.710911	3.425958	0.0417
D(INT(-1))	34.74633	2.701423	12.86223	0.001
D(INT(-2))	-4.44554	3.163681	-1.40518	0.2546
D(INT(-3))	-45.0603	3.766716	-11.9628	0.0013
CointEq(-1)*	-0.34682	0.019339	-17.9331	0.0004
R-squared	0.985399	Mean dependent var		0.125625
Adjusted R-squared	0.949709	S.D. dependent var		5.336756
F-Statistics (and P-value)	10.233 (0.000)	Akaike info criterion		3.366169
Durbin-Watson stat	2.29617	Schwarz criterion		4.419666

Source: Authors Computation, 2022 (Eviews-12)

As presumed, the lagged error correction term (ECT (-1)) was significantly statistic at 5% less than unity and negative. The coefficient exposed that once there is disequilibrium in the system, an average (high) speed of 34.68% it will take to adjust itself back towards long-run equilibrium level. The coefficient of determination (R-square), which was used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction. It showed that 98.53 percent changes in AGVA were collectively due to RFE, INF and INT, while 1.47 percent unaccounted variations were captured by the error term.

In addition, the F-statistic value of 10.233 and its associated probability value of 0.000, indicates that the complete model is also significant at 5% level. The model also indicated that there was no autocorrelation among the variables as indicated by Durbin Watson (DW) statistic of 2.29. This showed that the estimates were unbiased and can be relied upon also for policy decisions.

Statistical Test of Hypotheses

H₀₁: Foreign Exchange Rates has no significant effect on the Performance of agricultural export Volume in Nigeria

Table 1.6: Wald Test results on Foreign Exchange Rates and Performance of agricultural export Volume in Nigeria

Test Statistic	Value	df	Probability
F-statistic	1.280560	(9, 5)	0.4122
Chi-square	11.52504	9	0.2414

Source: Authors Computation, 2022 (Eviews-12)

The Wald-test in Table 1.6 indicated that the calculated F-value for the relationship between Foreign Exchange Rates and the Performance of agricultural export Volume in Nigeria is 1.280560, and its probability value is 0.4122. Because the probability value is greater than 0.05 at 5% level of significance, it means it falls in the region of acceptance and as a consequence, hypothesis one in a null form (H_{01}) was accepted. The result emphasizes that Foreign Exchange Rates has an insignificant effect on the performance of agricultural export Volume in Nigeria

H_{02} : Foreign Exchange Rates has no significant effect on the Performance of agricultural export Capacity Utilization in Nigeria

Table 1.7: Wald Test results on Foreign Exchange Rates and Performance of agricultural export Capacity Utilization in Nigeria

Test Statistic	Value	df	Probability
F-statistic	12.25883	(7, 5)	0.00255
Chi-square	14.25369	5	0.00293

Source: Authors Computation, 2022 (Eviews-12)

The Wald-test in Table 1.7 indicated that the calculated F-statistic value for the relationship between Foreign Exchange Rates and the Performance of agricultural export Capacity Utilization in Nigeria was found to be 12.25883 and its probability value was 0.0025. Because the probability value is less than 0.05 or 5% level of significance (and fell in the rejection region), hypothesis 2 in the null (H_{02}) was rejected. The study concludes, Foreign Exchange Rates has a positive and significant effect on the Performance of agricultural export Capacity Utilization in Nigeria

H_{03} : Foreign Exchange Rates has no significant effect on the Performance of agricultural export Value Added in Nigeria

Table 1.8: Wald Test results on Foreign Exchange Rates and the Performance of agricultural export Value Added in Nigeria.

Test Statistic	Value	df	Probability
F-statistic	7.160760	(8, 5)	0.0657
Chi-square	85.92912	5	0.0000

Source: Authors Computation, 2022 (Eviews-12)

Above all, the Wald-test in Table 1.8, showed that the F-value for effect of Foreign Exchange Rates on the Performance of agricultural export Value Added in Nigeria was found to be 7.160760; with a connected p-value of 0.0657. Because the p-value is greater than 0.05% level of significance, the third hypothesis which

was stated in null form (H_{03}) was accepted. With this, conclusion is that Foreign Exchange Rates has no significant effect on the Performance of agricultural export Value Added in Nigeria.

4. Discussion of Findings

That Foreign Exchange Rates was seen to have insignificant effect on the performance of agricultural export Volume in Nigeria. This agrees with the results of Akinbode and Ojo (2018) whose findings revealed that the volatility of exchange rate does not affect export significantly in the long and short run. This may be to a limited extent ascribed to the inelastic qualities of agricultural commodities' supply most importantly in the short run. It was also exposed that there exists insignificant relationship among agricultural export and GDP, world prices, exchange rate and inflation. The findings further agreed with Omojimate (2012) whose study showed that foreign exchange fluctuations through spread of interest rate was found to have no positive and significant effect on agricultural output in Nigeria.

Furthermore, discovery from the analysis shows that foreign Exchange Rates has a significant effect on the Performance of agricultural export Capacity Utilization in Nigeria. It showed that the significant fundamentals were real exchange rate, real appreciation and depreciation (after some lags), has significant effect on agricultural export capacity utilization in Nigeria (after some lags) in the short run. This aligned with the findings of Aliyu, Mohammed and Behiye (2021) whose study showed that there is a relationship among between the variables.

Foreign Exchange Rates has no positive effect on the Performance of agricultural export Value Added in Nigeria. The implication of this findings is that unstable exchange rates impacted ineffectively on Performance of agricultural export Value Added in Nigeria. This agrees with Brownson et al (2012) whose study showed that in both long run and short run, real exports, real external reserves, inflation, and external debt have insignificant negative effects on agricultural productivity, whereas industrial capacity utilization and nominal exchange rate promote agricultural productivity in Nigeria. The study is in line with the Clarks Neoclassical model (1973) theory, which views exchange rate and trade flows as a perfect way for firms to earn foreign currency.

5. Conclusion and Recommendation

Empirical result disclosed no effect between foreign exchange rates and agricultural volume, which is the output sector in Nigeria in the long run. The study also concluded that foreign exchange rates does not cause agricultural volume to increase or perform well, which would have led to corresponding increase in

agricultural output at 5% level of significance. Also, the second null hypotheses revealed that foreign exchange rates have no negative and insignificant effect on the performance of agricultural capacity utilization in Nigeria. Based on the findings it is established that foreign exchange rates impact on agricultural capacity utilization as its optimum capacity utilization causes foreign exchange to increase in Nigeria within the period of reviewed. Finally, the study concludes that foreign exchange rates does not affect value added in Nigeria. With this, the study concludes that foreign exchange rates do not cause agricultural value added to contribute to the GDP of the economy and that foreign exchange does not influence agricultural sector value added to grow and conclude that their relationship is insignificant and negatively related. Based on these conclusions, the study recommends that Nigerian government should moderate and regulate the rate of exchange activities to make certain that it brings about better performance in the agricultural sector. Also, she should strongly attempt to make better the stand of the economy internationally with other nations of the world to expand the market for Nigerian agricultural exports. Finally, the government should change the focus of its policy in direction to the external agricultural sector and making sure that it adds in the most favourably way to output performance. As an intentional policy, the government should give support to rural area agriculture by which investors in distinct communities and commodities should be encouraged to set up agricultural industries, which will be solely on local raw materials comprising equipment and machines. Hence, this will increase and advanced the market capacity utilization and value added locally.

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