**Proposed Topic**

**A DECENTRALIZE BUDGET MANAGEMENT AND MONETARY TRACKING SYSTEM IN NIGERIA USING CONSORTIUM BLOCKCHAIN TECHNOLOGY**

**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the Sturdy**

The information technology word as produce large volume of data and this data of information are increasing exponentially on daily basic. This as result to easy access of data and illegal modification of data (Lu et al., 2022). In today’s word Blockchain as proven efficiency in term of security and resilient, by adopting cryptography public key system for protecting value transfer and ownership. The technology enables transfer of value within a peer to peer environment without intermediate, this provide fast and minimal transfer cost of information and value within the vast network. Blockchain technology can be best understood has a ledger that is digitally distributed for recording and sharing of information within a peer to peer environment or network (Antipova, 2018). The Network member carry out the maintenance and validation of ledger copies which are similar, within an accepted aggregated information called block and are each of this block are link together in a chronological manner, thus “chains of block”. However, the block is bind together in such a way that the previously validated block is link to the next block using cryptography signature. For every creation of Block a timestamped data is associated with it, which is a digitally encoded time referencing the time or when the block is actually created and this block contain immutable data with information that can be used to reference the prior block. As a result of such chain system tempering with on block would require modifying all the previously created blocks. (Lu et al., 2022)Blockchain technology as many advantages among is the decentralize nature of the technology, thus its manage collectively not by a central authority, and it also ensure authentication of information digitally with the intervention of any third party, other includes anonymity, willfulness and trustworthiness. In consequence, it provide trust using cryptography signature within and untrusty environment (Antipova, 2018).

Furthermore, the adoption and creation of diverse blockchain technology as lead to the tremendous growth and evolvement. This diverse technology from blockchain are specifically design for a purpose and they are achieved by incorporating addition rules, smart contract, permissions, digital signatures and some other important features (Antipova, 2018). The first and the most popular implementation of blockchain technology is the bitcoin which is a P2P electronic cash system, and most importantly the cash system has not central authority managing it and it only stored verified or validated information. The blockchain is made up of transactions grouped together within a block, and block linked and chain together continuously (Salah & Ahmed, 2020). The blockchain technology is perceived as a revolutionary technology which provide vast amount of impact in other fields such as; supply chain, estate management, electronic government, internet of a things, voting system, healthcare sector and many other more (Salah & Ahmed, 2020). The technology of blockchain as the capability to transform the way we live drastically and transact within ourselves, other benefit such as prevention of fraud, decentralization, ownership of information and security. As a result of the benefit provide by this technology, various sturdy as emerge by viewing the blockchain technology using other field such as; computer science, finances, information system, politics and other as perspective (Salah & Ahmed, 2020). In addition, many research as published papers discussing the application of the blockchain technology to other research domains, namely; estate management, healthcare, voting system, supply chain, electronic government.

The section of the economy that is mainly control by the government is refers to as the public sector, their primary objective of this public sector is to provide basic government services. However, due to the large number of citizen the service requires to be provided are so enormous. In respect to the popular saying of economist that “the want of human is unlimited, but the method of satisfying them is limited”. According to (Obara, 2013) the process of budget creating and implementation includes the identification of citizens needs and concluding of deciding on the services and goods used for satisfying those need through the process of politics. In Nigeria the Government uses public policy as benchmark to prepare their budget, the policy is an essential guideline that is followed in other to achieve her mission. Furthermore, the term budgeting was first mention by the central government of Britain, which is later modify to attain total control over the crown finances as a result of parliament’s. Budget is a form of framework for expenditure and revenue outlays, within a specific time range which is mostly per annual (Obara, 2013). The Budget is also a tool or procedure primary design to actualize the development objective of the Nigeria government. At the earlier development stage of budgeting, its only primarily aim at serving legislative accountability.

In Addition, in respect to Nigeria’s Financial Regulation (NFR) the ministers and the agencies of spending cannot oblige to make expenditures, not until they acquire the spending authorization approval from the finance minister via a warrant. The officers controlling the vote will used the warrant issue as and authority to use the expenditure in respect to the estimated approved subject of any items that is reserved. In Nigeria the collation of document in a public sector that reference a government financial condition is term budgeting. The budget is considered as an official recommendation by the president to is congress, in other to provide a responsible government. Considering some state in Nigeria the preparation of authority for submitting budget are not necessarily given to the governor, while other state are bestowed with the responsibility to prepare and submit share budget along with their civil servant, administrative officers, political appointees, leaders of legislative and probably two or more of this officers (Obara, 2013). Nigeria public sector (Government) Budget approval occur in three consecutive stages, this includes; ministerial approval, executive approval and finally the legislative approval. The commencement of the budget faces begins five most prior to the beginning of the year (Obara, 2013).

Government Auditing in budgeting is essential to the government in other to account the responsibility to the public. The audit carried out by the government is essential and designed to stand as evident in terms of financial statement integrity. However, (Antipova, 2018) stated that the audit provided by the government should primarily focus on how the resources budgeted are spent, and the procedure of audit assessment ensure there is no misrepresentation and fraudulent activities in the financial statements of the government.

* 1. **Problem Statement**

It is identify in the research work of (Obara, 2013) that budget is a very difficult task, that is far from accomplishing in reality and the gap between budget creation and accomplishment is far apart and this situation keep increasing as years passes. Issues such as lack of proper management, monitoring and implementation could have keep this situation rising as presume by the researcher. (Obara, 2013) also figure out that the process of budgeting in Nigeria still remain problematic in the aspect of preparation and implementation. Considering today governmental operation, difficult challenges are identified specifically within the government official who lack the institutional background, experience, intelligent and knowledge in achieving the necessary conditions for holding the government to account. The agencies of government are faced with various stakeholder have conflicting interest, difficulties in tracking auditing, accountability, responsibility among the government official and monetary circulation within the country. (Antipova, 2018). Hence, its essential to developed a framework or system that can adequately control the effective and efficient utilization of budget at preparation and implementation stage. However, this research work proposed a decentralize system (blockchain technology) for managing budget, budget auditing, accountability, responsibility, creating trust, untampered information and monetary tracking among government officials.

* 1. **Aim and Objectives**

This research work aims to developed a decentralize transparent and auditable budget management system, by applying blockchain technology to efficiently and effective distribute, manage, budget auditing, tracking of untampered budget revenue and information. To actualize this, the following objective has to be actualize.

1. To design the consortium blockchain decentralize budget management system
2. To implement the propose decentralize system
3. To evaluate the proposed system
   1. **Significant of Sturdy**

the research work can be widely adopted in any environment or sector where efficient and effective monitoring, securing, accountability is essential or of utmost important. Considering the public sector which is controlled by the government for the main purpose of providing governmental service, the system will be of great efficient management tools capable of distributing resource in a transparent, easy and quick manner. Furthermore, work can be adopted by government in Nigeria to effectively monitor budget and implement them. Government bodies such as the Budget Monitoring and price Intelligent Unit (BMPIU) can make use of this decentralized system to verify information independently, easily carry out audit operations such as financial auditing, regulatory auditing, efficiency auditing, effective auditing and finally economic auditing.

* 1. **Scope and Limitation**

Budget management and implementation within Nigeria is considered only in this research work, thus the developed proposed system in only limited in solving issues related to Nigeria government budget regulation. or government aspect or sector such as health, Agric, finance, sport, and education are not considered in this research work.

* 1. **Research Approach**

The research approach comprises of systematic budget procedure in Nigeria and integrating consortium blockchain decentralize framework at the budget implementation stage, this ensure full functionality of blockchain in terms of budget traceability, openness, trusted database, openness, transparency and finally decentralization of the budget implementation. The budget procedure in Nigeria includes.

1. **Medium-Term Expenditure (MTEF) & Fiscal Strategy Paper (FSP):** - At this stage of budget procedures, the MTEF and FSP provide basic information about the compositional sectorial distribution of the public expenditure estimate. In other word the document provides basic information about the budget for the annual planning. In addition, the microeconomic framework is set out, indicating the fiscal target, estimated revenue, expenditures and underlying assumption for those projection.
2. **Budget Preparation: -** After the legislator approved the MTEF and FSP document, the proposed expected revenue and expenditure are presented by the government Ministries, department and Agencies (MDAs) within the fiscal year along with the contingency estimate and special requirements articulated together. However, the federal ministry of finance will gather the estimated information by the MDAs and consults other agencies that are relevant to prepare the overall revenue, policies, expenditures and programs collated in the emerging national budget to the national assembly for submission and approval.
3. **Budget Approval: -** this stage also refers to as appropriation bills, thus drafted budget which is presented formally by the president to the legislature for approval based on the demand of law.
4. **Budget Implementation: -** the most import stage of budget process, the performance of any budget depends on either its effectively and efficiently implemented for direct impact on Nigerian citizen. The main impact of budget implementation includes electricity, water, roads, schools, hospital and the likes. The reduction of poverty rate, transportation, and educational facilities are also essential in budget implementation.

However, in this research work Blockchain technology is intended in digitalizing and decentralizing the budget implementation stage. This includes a fully transparent, accountable, secure system with budget funds tracking capability from the Accountant general of the Federation to the intended infrastructural development or recipient.

1. **Budget Appraisal: -** this stage is essential to create a mechanism that will ensure the distributed funds are used for the intended purpose. Hence, the blockchain technology will be used to design a smart contract to automate the budget monitoring and price intelligence unit (BMPIU) functionality. This result on an improved fiscal management, liquidity management, utilizing of resources through information flow, enhance transparency, accountability, and untampered historical information.

**Reference**

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