

QUALITATIVE RESEARCH

Islamic Financing Through Sovereign *Shukūk*: Advancing Sustainable Road Infrastructure in Nigeria

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Abstract

Purpose: The research aims to provide additional insights to practitioners and professionals in the *shukūk* markets on its effectiveness in financing economic projects. It further aims to provide evidence-based information to the policymakers on the link between sovereign *shukūk* and infrastructure development using a case study of Nigeria's road sector *shukūk*.

Methodology: In respect of methods, the research employed qualitative methods including document analysis and case study methods.

Findings: The results showed that sovereign *shukūk* were economically and financially viable in financing infrastructure. Regarding the road infrastructure deficit, *shukūk* funded only 8.6% of the federal road's deficit. The *shukūk* projects covered 1,882 km, which represented 97.7% completion rate in a four-year period. This success was because the *shukūk* issuances were directly linked to project execution and completion. Otherwise, the instrument will not appeal to ethical investors. At the same time, *shukūk* benefits the country by ensuring project continuity.

Research Limitations: The research is limited by short span time series data on sovereign *shukūk* whose issuance began in 2017. This constrained the authors from applying mixed method research.

Practical and Social Implications: The research contributes to the empirical evidence on the practical utility of sovereign *shukūk* in a developing economy with limited fiscal space and limited infrastructural capacity. It highlights the significance of ethical financial instruments tied down to project implementation in Nigeria.

KAUJIE Classification: K13, S4

JEL Classification: G29, R40, E62

INTRODUCTION

Infrastructure plays vital role for economic growth and development particularly in developing countries. Notwithstanding its importance, the quality and quantity of

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infrastructure lagged behind in Sub-Saharan Africa (SSA), including Nigeria (Baita & Suleiman, 2021). In addition, the sources of financing infrastructure are critical to its development, and the traditional role of public budget in financing developmental projects has become limited. Hence, the need for more innovative financial instruments to provide more sources of finance (Aliyu, 2024). To fill this vacuum, innovative financial instruments such as *ṣukūk* have been developed by the experts and practitioners in the field of Islamic finance as additional source of financing development and other economic projects in both public and private sectors. *Ṣukūk*, also called Islamic bonds, are innovative ethical financial instruments based on the risk sharing principle among the parties involved in the transactions.

Additionally, many countries have tapped into this emerging financing alternative to fund infrastructure. Besides traditional financial instruments, *ṣukūk* are not only potential but effective financial tools for the financing infrastructure development including roads, airports, hospitals, power plant, railways, and schools. For example, Indonesia spent a lot on financing transport sector. The country issued IDR 1.5 trillion, IDR 7.1 trillion and IDR 13.67 trillion between 2014 and 2016 respectively; two-thirds of the *ṣukūk* proceeds were for financing projects in the transport sector including roads, bridges and rail roads (Suminto, 2022).

In Nigeria, the government heavily relied on traditional fiscal budget to finance its capital projects for development (Baita & Mustafa, 2019). Road sector and other capital projects were largely financed through the government's capital expenditures. Yet government alone could not finance these projects. In addition, Nigeria's road infrastructure face many constraints, which deny the citizens access to safer roads, and in some cases the roads are not even provided. Hence, the deployment of *ṣukūk* can facilitate the sustainability of economic projects in the longer horizon (Abdulkareem & Mahmud, 2019). As well, *ṣukūk* could serve as a propeller for revamping the Nigeria's infrastructural shortfalls (Baita & Mustafa, 2019). Adekoye (2024) observed that Nigeria struggle with inadequate infrastructure including roads, and abandoning some capital projects. The chief causes were persistent fiscal deficit, corruption, servicing of public debts, and interest payments for external debts. In similar vein, Abdulkareem et al., (2021) found that Nigeria has a backlog of abandoned infrastructure projects including road sector. This is corroborated by Debt Management Office [DMO] (2017) which observed that the country's major obstacles to the development of roads infrastructure include inadequate source of finance, insecurity, poor weather conditions in some parts of the country, poor performance of contractors, and poor road usage by motorists. The Minister of Mines and Steel Development explained that the Nigeria's road sector deficit was nearly 70%; more so, the country was able to pave 50,000 km road networks out of 200,000 km representing 25% only. Also, Nigeria's road density of 22km per 100m² is among the lowest in Africa and other developing countries such as South Africa with 62km and Kenya with 28km (DMO, 2022.)

It should be noted that construction and rehabilitation road infrastructure do not last longer in Nigeria due to award of road projects to contractors who used sub-standard equipment and/or materials in road construction. However, this is connected with corruption in public service where contractors have to pay huge amount as bribe before

they can be awarded the contracts. As well, government bonds are not tied to any specific projects. As a result, the resources may be diverted to unproductive projects and contracts may be inflated in order to seek rent from public treasury. That is why it deem necessary to find alternative means of financing infrastructure in the country in order to minimize costs, as well as improve the quality of the capital projects.

To address these challenges, the Federal Government tapped in other funding sources including public private partnerships, multilateral agencies, and *shukūk* issuance. Past researches (e.g. Aliyu, 2024; Abdulkareem et al., 2021; Baita & Mustafa, 2019; Salaudeen, 2021; Sani et al., 2022) documented the importance of *shukūk* instrument in funding Nigeria's infrastructure. *Shukūk* (Islamic bonds) possess many key characteristics that satisfy the requirements of providing quality infrastructure. The instrument is tied to the road projects i.e. the proceeds from the *shukūk* cannot be used for any projects except the construction and rehabilitation of roads and bridges. This is expected to reduce provision of sub-standard road projects and diversion of funds to non-productive (or even white elephant) projects. Also, *shukūk* augment government's sources of funds by reducing fiscal constraints in the country.

In this connection, this research aims to provide additional insights to practitioners and professionals in the *shukūk* markets on the effectiveness of *shukūk* in financing economic projects. It further aims to provide evidence-based information to the policy makers on the link between *shukūk* and infrastructure development using a case study of Federal Government *Ijārah shukūk*. This will help in formulating and fine-tuning informed financial policy on infrastructure financing. Therefore, the specific objective of the study is to take a case study of sovereign *shukūk* issuances in Nigeria and find out how they finance the development of roads infrastructure.

The research questions guiding the research are formulated as follows:-

1. How economically and financially viable is the sovereign *shukūk* in Nigeria?
2. Do sovereign *shukūk* financed roads projects have high completion rate in Nigeria?
3. To what extent do sovereign *shukūk* financing address road infrastructure deficits in Nigeria?

The paper is structured into five sections. Section two review the empirical literature; Section three outlines the methodology relevant for the study; Section four present the results of findings; and Section five make concluding remarks in respect of the findings, highlight the research limitations and proposes areas for future *shukūk* research in Nigeria.

LITERATURE REVIEW

Theoretical Literature

Islamic finance promotes risk sharing, which is less risky and *Shari'ah* compatible. Risk sharing transactions, being asset underlying, are relevant for both revenue and nonrevenue producing development projects. The returns to investors for revenue producing project is financed by the proceeds earned, while the government financed the cost of nonrevenue producing project using its public revenues (Bacha & Mirakhor, 2017, p. 2). Furthermore, less developed economies found it difficult to finance the development of economic and social projects due to high public indebtedness. This is coupled with inadequate infrastructural facilities and their inability to make interest payments for the external debts

(Selim et al., 2019; Bacha & Mirakhor, 2017). These countries can achieve infrastructural development if they reduce reliance on foreign interest-bearing loans and include non-interest financing in their fiscal portfolios. The goal of diversifying the funding sources is to reduce the deleterious repercussion of foreign indebtedness and the accumulation of interest liability. Similarly, the authors contended that Istisna-based *ṣukūk* could be viable alternative financial instrument for constructing large-scale capital projects (Selim et al., 2019).

Accordingly, the modification of aggregate demand and aggregate supply would illuminate the benefit of *ṣukūk*-based large-scale infrastructure financing. The central bank expands money supply by issuing *ṣukūk*, which could lead to output growth and employment in the economy. The issuances reduce country's reliance on external debts, thus, reducing the interest liability and benefiting the domestic economy. As well, the risk-sharing feature of *ṣukūk* reduces the public debt burden to the sovereign (Selim et al., 2019).

Empirical Review

Recent empirics buttressed the developmental role of *ṣukūk*, its viability as ethical financial instrument and supported its economic significance in financing infrastructure (Islam et al., 2023; Ledhem, 2022; Amaliah & Aspiranti, 2022; Hasan et al., 2022; Sa'ad et al., 2022; Abdulkareem et al., 2021; Baita & Suleiman 2021; Gautama & Dewi, 2021; Smaoui, Mimouni & Saleh, 2021; Surachman et al., 2022). Recently, Aliyu (2024) examined the capacity of *ṣukūk* in filling infrastructural gap in five African countries including Nigeria. By surveying 414 respondents, he found that creating special purpose company (SPC), *ṣukūk* issuance, and sustainable Islamic financing could promote infrastructure in Africa. He, also, found overwhelming evidence that SPC ensured *ṣukūk* proceeds were spent according to the agreed contract. Islam et al., (2023) revealed that increase in income, infrastructure deficit, size of the Muslim population and appetite for ethical financing were among the factors contributing to *ṣukūk* issuance.

Gautama and Dewi (2021) investigated the trends in financing Indonesian state governments' road sector projects using state *ṣukūk* by employing descriptive qualitative method. The study found that project financing *ṣukūk* (PFS) contribute to developing road infrastructure, and provide more fiscal space for financing overall infrastructure. Additionally, PFS are characterized by transparency and accountability as they are issued for specific projects. The authors observed possibility of more issuances of this type of *ṣukūk* in the future in order to accelerate infrastructure development across states. Fauziah et al., (2020) found that some factors stifled proper implementation of *ṣukūk* to finance infrastructure in Indonesia. These include issuance limit, delay in projects construction, low *ṣukūk* market relative to bonds, and sub-optimal monitoring and evaluation of the monies generated.

Amaliah and Aspiranti (2022) examined the effect of infrastructure finance on government *ṣukūk* between 2008 q4 and 2020 q4 using ECM model. It was established that infrastructure finance drives up *ṣukūk* supply in the short run; however, it results in less *ṣukūk* issues in over the long run. The implication is that adequate provision of infrastructure will not induce more *ṣukūk* issues and this can be achieved with steady investments over the long period. Ledhem (2022) analyzed the effect of *ṣukūk* financing on

growth in Southeast Asia and found that *ṣukūk* financing impact significantly on economic growth in Southeast Asia. Smaoui, Mimouni and Saleh (2021) revealed that *ṣukūk* significantly promote infrastructural development. Similarly, Baita and Suleiman (2021) found that government issued *ṣukūk* were economically effective in reducing infrastructure deficits, upscaling innovation and accelerating industrialization. Abubakar and Baba (2020) assessed the role of *ṣukūk* financing on nation building in Nigeria. Analytical and descriptive approaches were used and evidence revealed that *ṣukūk* in Nigeria has potentials with regard to economic development, financing infrastructure, financial inclusion, economic diversification, etc. In the same view, Abubakar and Lawal (2020) in an exploratory qualitative research examined the potentials of *ṣukūk* financing on infrastructural deficit in northeast Nigeria. They also review the approaches whereby Islamic financing mechanism including *ṣukūk* can rehabilitate and reconstruct infrastructures in the Northeast Nigeria.

Shaikh (2015) analyzed the role of *ṣukūk* in funding infrastructure in Pakistan. The study found high deficit in energy infrastructure, low tax revenues and higher fiscal deficit in the country. Consequently, this resulted in higher prices of energy and rising cost of living. The author argued that issuing more sovereign *ṣukūk* has many economic benefits including funding public projects, increasing returns to scale and reaping positive externalities of public investments. As well, Rarasati et al., (2014) elaborated on opportunities of Islamic project financing of public infrastructure development in Indonesia. The study suggests that government policies and regulations on infrastructural development from the Islamic financing aspect should be reviewed. Similarly, Effiom and Ubi (2016) showed that Nigeria's road infrastructure were in critical conditions which required massive investment to overhaul the sector. They found that only 25% of the federal roads were in good condition while 28.39% were fair. This means about 47% were in poor condition. Therefore, the authors concluded that road sector has not only been neglected but given low priority in the development agenda of Nigeria.

In respect of applying document analysis in Islamic finance research, Khan et al., (2022) argued that many researches on *ṣukūk* lack quantitative evidence due to limited data. They propose case study as a means of overcoming this issue where they adopted case study using exploratory analysis. They proposed tokenizing *ṣukūk* Murabaha, which could be implemented via smart contract. By employing document analysis and case studies, Sa'ad et al., (2022) found that *ijārah ṣukūk* was a viable option for financing roads in Nigeria during pandemic; however, the same instrument was not financially viable in Malaysia where motorists pay tollgate fees. Again, Hasan et al., (2022) applied document analysis to identify the challenges confronting the financing of capital projects using socially responsible investment (SRI) *ṣukūk* in Malaysia.

More so, Surachman et al., (2022) showed that stakeholders i.e. concerned ministries and agencies were crucial in the successful implementation of *ṣukūk* projects. Handayani and Surachman's (2017) study considered both case study and interview in analyzing the benefits of sovereign *ṣukūk* in generating more electricity for energy consumption as well as reducing environmental pollution. The authors found that generating electricity using renewable energy can be effectively financed with government *ṣukūk* and the project is efficient in making environment cleaner. Oseni (2014) used case study approach to

examine the dispute management mechanism for near and complete *ṣukūk* defaults. The study found that law should serve as the primary mechanism for settling *ṣukūk* defaults in the case of disputes by corporate companies. A case study by Noor and Shahimi (2013) showed poorly managed credit risk strategies have led to increasing cases of default in Malaysia. By taking a case study of a corporate company, they found that credit risk is based on debt-based *ṣukūk*, which is not different from the conventional credit risk mechanism.

METHODOLOGY

Data

The data for conducting the case study were obtained from Debt Management Office [DMO]. DMO is responsible for managing debt in Nigeria, and it is saddled with responsibility of overseeing *ṣukūk* issuance in the country. Specifically, information on the amount of *ṣukūk* issued, the rental rates, the time of redemption, and other terms and conditions are contained in the prospectus issued by DMO together Securities and Exchange Commission (SEC). Data on *ṣukūk* issuances, road distance covered by *ṣukūk* projects and level of project completion were extracted from various issues of FGN *Ṣukūk* Prospectuses between 2017 and 2023. Statista website (a compendium of economic and financial statistics across the globe) provided data on the length and characteristics of federal roads.

Methods

The study used qualitative methods of data analysis; document analysis and case study method. Each of these methods was explained separately by delineating its strengths and weaknesses, as well as charting ways of ensuring the quality and reliability of the data.

Documentary analysis

Bowen (2009, p. 27) explained document analysis as "... a systematic analysis procedure for reviewing or evaluating documents-both printed and electronic (computer-based and Internet-transmitted) material." (p. 27). Document analysis can provide insight in describing and explaining a phenomenon or context to infer meaning and deepen understanding (Amstrong, n.d.; Bowen, 2009). Similarly, the process of conducting document analysis "... entails finding, selecting, appraising (making sense of), and synthesizing data contained in documents." (Bowen, 2009, p. 28). Document analysis can stand on its own in some cases like historical and cross-cultural research. However, triangulation is useful when adopting document analysis in order to reduce potential bias; at least two methods of establishing evidence (e.g. interview, observations etc.) can be combined.

Despite its being efficient and cost-effective method, it is limited by inadequate information, difficulty in retrieving documents and bias in selecting information (Bowen, 2009). Though document researches are limited by the quality and availability of documents, the method is non-reactive and free from interviewer bias or respondent's bias. So, Abdulkarim et al. (2022), Baita and Suleiman (2021), Hasan et al., (2022), and Sa'ad et al., (2022) used document analysis to study the impact of *ṣukūk* and infrastructure

financing. Specifically, Abdulkarim et al., (2022) were concerned with *ṣukūk* funded road projects in northern Nigeria.

In this connection, the researcher checked for the reliability of the documents where data are gathered. *Ṣukūk* Prospectus are the main source of data for the *ṣukūk* in terms of amount issued and subscribed, the allocation of *ṣukūk* proceeds to various geopolitical zones in the study area and the output of the projects (in kilometers). These prospectuses contained the technical explanations, projections and experts' assessments of the following areas:

- i. Legal framework.
- ii. Financial indicators
- iii. Risk analysis
- iv. Macroeconomic environment
- v. Fiscal position
- vi. Political environment
- vii. Project estimates

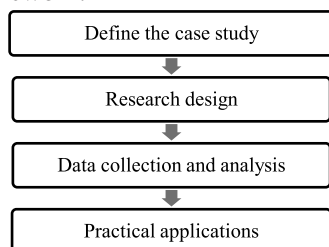
The design of prospectus ensured the quality and reliability of the documents because of the information availability. Specifically, experts from different fields designed the contents of the documents. These included lawyers, bankers, financial analysts, economists, engineers, project management professionals, political analysts etc. At the same time, the documents provided both qualitative and quantitative data that were important for investigating the implications of *ṣukūk* for financing roads projects in Nigeria as well as risk assessments. In addition, data were available to examine the financing and level of completion of the roads from reliable sources.

Case Study Method

Another important method is the case study research method. Sibbald, et al. (2021) argued that case study method "...are frequently criticized due to its flexible approach and inconsistent application". According to them, case study are conducted provide in-depth understanding of a phenomenon in a particular context. They outlined stages for conducting a case study including

- i. Definition of case
- ii. Case study research design (descriptive, explanatory and exploratory)
- iii. Data collection and analysis
- iv. Practical application

It is suggested that the quality of case study can be improved by linking it to the theory or developing conceptual framework.



Source: Sibbald et al., (2021)

Application of case study method in *ṣukūk* analysis and/or road projects is motivated by previous literatures (e.g. Sa'ad, et al. 2022; Villalba-Romero, Liyanage, & Rounmboutsos, 2015).

RESULTS AND DISCUSSION

This section presents and discusses the data gathered from the relevant sources on the federal government *ṣukūk* issuances in Nigeria between 2017 and 2023. It also presents another subsection on the quality of roads infrastructure in the country.

Analysis of Sovereign *Ṣukūk* Issuances in Nigeria

In its effort to reduce the infrastructural gap, Nigeria issued its debut *ṣukūk* in 2017 through a Special Purpose Vehicle (SPV) named FGN Roads *Ṣukūk* Company 1 Plc. The SPV is owned by DMO and Ministry of Finance Incorporated, which owned 40% and 60% of the SPV's total shares repectively. The SPV was authorized on behalf of FGN to offer for subscription N100 billion 7-year *Ijārah* (lease) *Ṣukūk*, which commenced on September 14 and closed on September 22. A rental rate of 16.47% was to be paid semi-annually, full repayment would be made on the maturity date of September 25, 2024, while the security was backed by the FGN's "full faith and credit" (DMO, 2017). However, the offer was oversubscribed by N105.878 billion; the subscription cut across various investors including pension funds, banks fund managers, institutional investors and retail investors who represented 4% of total subscription (DMO Press Release, 2017). Table I presented a snapshot of six (6) tranches of sovereign *ṣukūk* issuances between 2017 and 2023.

TABLE 1: Federal Government *Ijārah* Sovereign *Ṣukūk* (5 Tranches)

Description	2017	2018	2020	2021	2022	2023
Tenor (years)	7	7	7	10	10	10
Maturity date	2024	2025	2027	2031	2032	2033
Rental rate (semi-annual %)	16.40	15.743	11.20	12.80	15.64	15.75
Amount allotted (N' billion)	100	100	150	262	130	350
Oversubscription (N' billion)	105.878	132.2	519.12	877	164	652.827

Source: FGN Sovereign *Ṣukūk* Prospectus (various issues)

From Table 1, the FGN issued the second 7-year sovereign *Ijārah ṣukūk* worth N100 billion in December, 2018 at 15.743% rental rate, and the issue was oversubscribed by 132.2 billion. Similarly, the third *ṣukūk* valued at N150 billions were issued in June 2020, at 11.2% rental rate. The issue was oversubscribed by N519.12 billion. Similarly, there was sovereign *ṣukūk* oversubscription of N877 and N195 billions in 2021 and 2022 respectively. While the sovereign *ṣukūk* issuance was higher (N262 Billion) in 2021 compared to N130 billion in 2022, the rental rate was lower (15.64%) in 2021 compared to 15.64% in 2022. As well, there was excessive subscription (N652.827 billions) in 2023, which resulted in adjusting initial offer of N150 billion to N350 billion. In term of tenor, the first three sovereign *ṣukūk* issues (2017, 2018 and 2020) have 7 years tenor each, while the sovereign *ṣukūk* issued between 2021 and 2023 have 10 years tenor each. Furthermore, the sharing formula for the sovereign *ṣukūk* process is based equality among the six geopolitical zones (north-east, north-west, north-central, south-east, south-west and south-south). This was in order to ensure even development in the country and reduce regional

inequalities in the provision of key infrastructure. Figure I shows the distribution of road projects across the six regional zones and the Federal Capital Territory (FCT).

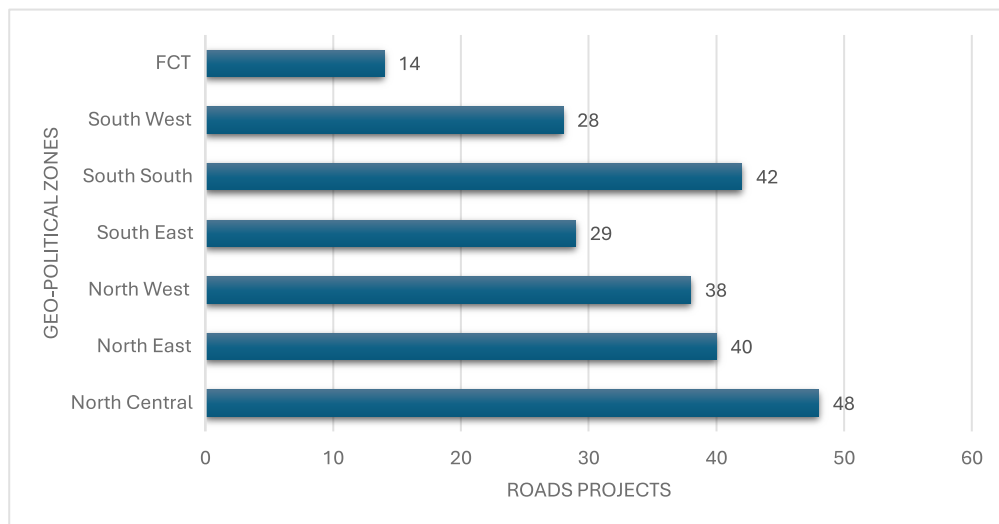


FIGURE 1. Number of *Şukūk* Funded Road Projects (2017-2022)

As displayed in Figure 1, 48 roads and bridges were financed in North-Central between 2017 and 2022. This zone has the highest number of *şukūk*-funded projects. Following is South-South region, which received 42 road projects in five-year period. South-West, being the most developed region in Nigeria, has the least *şukūk*-funded road projects. Yet the money allocated to the South-West was equal to the amount received by other regions in the country. Beginning from 2021, the FCT (Nigeria's Capital City) received funds for rehabilitation and construction of roads. Between 2021 and 2022, FCT was allocated *şukūk* funds to finance 14 roads projects. In total, the Federal Government of Nigeria (FGN) has extensively deployed *şukūk* financing to rehabilitate and reconstruct 239 roads projects across the country from 2017 to 2022. Based on the principle of even development and regional balance, the Nigeria is putting unprecedented efforts to address the challenges facing roads infrastructure.

Furthermore, FGN *şukūk* have continue to cover distances (in km) in order to revamp the road transport sector. Table II presents the number of road projects and the distance covered (in km) between 2017 and 2022.

TABLE 2: *Şukūk* Financed Road Projects

Year	Number of projects	Kilometers covered
2017	25	413.54
2018	28	642.69
2020	44	869.67
2021	72	911.29
2022	70	1,162.81*
TOTAL	239	4,000

Notes: * means the data was obtained by subtracting total km covered between 2017 and 2021 from 4000 km. DMO (2023b) reported that ₦742.557 billion worth of FGN *şukūk* funded 4000 km between 2017 and 2022.

Source: FGN *Şukūk* Prospectuses (2017, 2020, 2021, 2022, 2023a).

Table 2 showed that the number of road projects increased from 25 projects in the 2017 debut *şukūk* to 70 projects in 2022. Between 2017 and 2022, there were 239 projects were financed by *şukūk* to were reconstruct and rehabilitate roads and bridges. Likewise, the projects covered more kilometers as more *şukūk* were issued; it was expected to cover 413.54 km in 2017 up to 1,162.81 km in 2022. Besides, it was reported that the sixth *şukūk* issuance in 2023 would fund additional 53 roads projects, which would cover more than 3,000 kilometers (The Nation, 2023).

As earlier stated, Nigeria has a total of 200,000 km road network; the federal government owned 33,000 km representing 16.5% of the total road networks (DMO, 2022). 36 states and 747 local governments shared the remaining 167,000 km. More than two-third (67.47%) of the federal roads have asphaltic concrete, while remaining were surface dressed or covered with gravel/earth (Statista, 2023). Preliminary investigation indicated that *şukūk* financed only 8.6% of the total federal roads (in km). However, government funds its projects from other sources such as public-private partnership, bonds, tax credits etc.

Based on geo-political zonal classification, Figure II showed the distribution of kilometers covered by *şukūk* funded road projects across the zonal regions for 2017 and 2021. However, breakdown of data for regional distance coverage were not available for 2018.

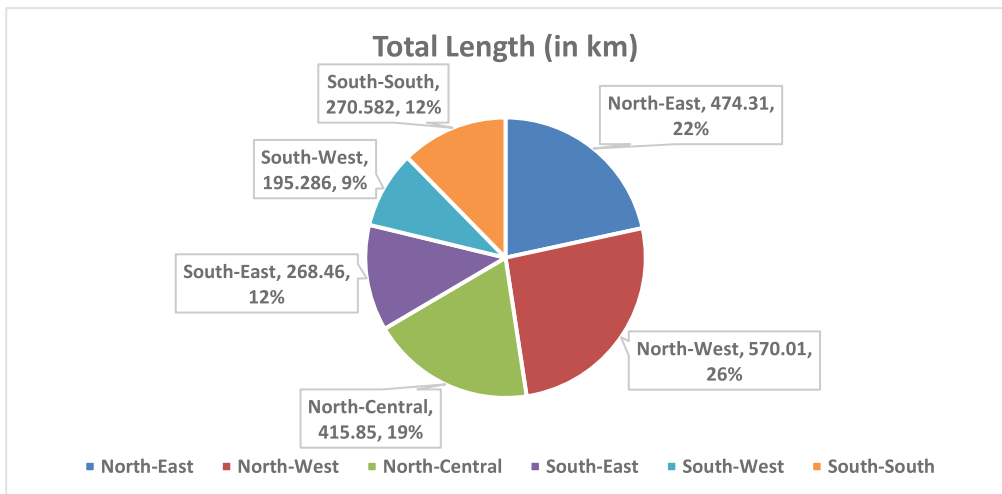


FIGURE 2. Distance coverage and percentage share for geo-political zones

Figure 2 revealed that the Northern region covered 1,460.17 km in three issuances, accounting for 67%, while the projects in the Southern region covered 734.328 km, which represented 33%. By breaking down the analysis to the geo-political level, North-West has the highest road length (570.01 km), followed by the North-East (474.31 km). In the other continuum, South-West has the least distance coverage (270.582 km). Despite the differences in the length of roads across the zones, the proceeds were equally allocated in 2017, 2020, and 2021.

One of the research questions centers on the completion rate of the *şukūk* funded projects. The Minister of Works and Housing revealed that completed distance under

federal government *shukūk* financed road projects were 482km, 643km, highway and bridge 757km for 2017, 2018 and 2020 respectively (Blueprint, 2022). Altogether, these covered 1,882 km, which represented 97.7% completion rate in four-year period. This showed significant stride in government's drive toward reducing deficit in the road sector. This is in line with findings of Aliyu (2024) who established that *shukūk* issuing African countries spend the *shukūk* funds based on the agreed upon contracts. In addition, there are fifteen key priority federal roads cutting across the Northern and Southern parts of the country. Among the priority road projects, the following were completed in early 2022.

1. Sokoto-Tambuwal-Jega-Yawuri in Sokoto and Kebbi, which covered 296km.
2. Section II of Kano-Maiduguri road (Shuwarin - Azare) covered 142km.
3. Section III of Kano-Maiduguri road (Azare – Potiskum) covered 106km
4. Ikom bridge which is 360 meters long and covering 1.2km.

Road Quality and Infrastructure Deficit

A report by The Global Economy (2023) showed that Nigeria ranked 131st among 141 in the quality of road index. The index ranges from a scale of 1 (lowest quality) to 7 (highest quality). However, Nigeria scored 2.5, which showed that the country was below 40 percentile in the quality of road indicator (DMO, 2022). Figure 2 represents the trend of road quality index from 2012 to 2019.

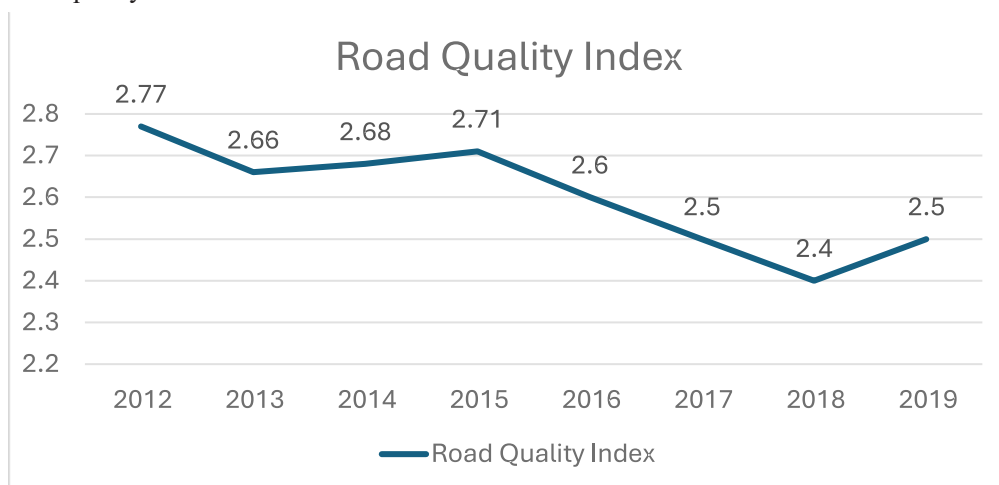


FIGURE 3. Road Quality Index

Figure 3 showed a decline in road quality score from 2.77 to 2.66 between 2012 and 2013. However, it remained relatively stable within the range of 2.66 to 2.7 from 2013 to 2015. The score steadily decline after from 2.6 in 2016 to a lowest score of 2.4 in 2018. Again, it reverted to 2017 level in 2019 reaching 2.5 score. This fluctuation showed the importance of attracting viable sources of finance to provide adequate road infrastructure and effectively checkmate the quality of road projects in the country.

CONCLUSION

The study investigated the role of *ṣukūk* in financing road infrastructure in Nigeria. Three research questions were posed and qualitative methods of data analysis were applied. The results showed that though *ṣukūk* were economically and financially viable in financing infrastructure, much needs to be done to curtail the deficits. Despite persistent inflation, the Federal Government continued to execute *ṣukūk* funded road projects. The *ṣukūk* projects completion rate was satisfactory due to strict spending of the proceeds in accordance to the *ṣukūk* contract agreement. Due to creation of SPV for overseeing project implementation, *ṣukūk* project completion remained a successful experiment in Nigeria, which ensures projects continuity. Without fulfilling the underlying *ṣukūk* contract, the instrument will not appeal to the ethical domestic and foreign investors. Despite this progress, Nigeria did not witness significant improvement in the overall road quality index despite increase in the number of *ṣukūk*-financed roads and bridges.

Limitations and Future Research Directions

The study has some limitations. First, there is not enough time series data for quantitative analysis. Ideally, the study should combine both quantitative and qualitative data for robustness. Thus, applying mixed method research will enrich the robustness of the findings. Second, the study examined five period *ṣukūk* issuances between 2017 and 2022. The five-year *ṣukūk* were issued during the tenure of President Muhammdu Buhari. However, Nigeria has witnessed a change of government on May 29, 2023 after the presidential election. Future studies should investigate *ṣukūk* project continuity at the end of outgoing administration. This is crucial because project abandonment during the end of tenure is pervasive in Nigeria. Third, the study has not considered the technical/engineering factors, which may be more relevant yardstick to measure road quality. Therefore, future research should consider field study to assess the technical factors embedded in measuring the quality of *ṣukūk*-funded roads projects. Alternatively, the study can assess the experts' views on the quality of *ṣukūk*-financed federal road projects. In addition, researchers can compare *ṣukūk*-funded roads/bridges with the similar road projects financed by other financial instruments.

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