

Financing Solid Waste Recycling Towards A Green Enconomy In Nigeria: Experimenting Islamic Green Finance

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Abstract

Solid waste recycling has been identified as a major strategy of circular economy for conversing the environment for fulfilling the present needs without compromising the future generation. However, solid waste recycling businesses reliance on conventional financial institutions might make transitioning to green economy, difficult. Islamic green finance seems to be a viable alternative due to its environmentally friendly shariah principles. This study therefore explored how Islamic green finance can impact solid waste recycling businesses in Nigeria. Data were collected using questionnaire from 57 solid waste recycling firms which are registered with Lagos State Waste Management Authority (LAWMA). The data were analysed with both descriptive statistics and logistic regression. The study found that green murabaha ($p < 0.05$), green mudharaba ($p < 0.05$), green musharaka ($p < 0.01$) and green ijarah ($p < 0.1$) had positive and significant relationship with turnover growth. The study however found that both green musharaka wa mutanaqisah ($p > 0.1$) and green sukuk ($p > 0.1$) had no significant relationship with turnover of the firms. The study concluded that Islamic green financial services are necessary to enhance performance of solid waste cycling business in Nigeria. It is therefore recommended that shariah-compliant green financial products be adopted to facilitate green financing of solid waste recycling businesses in the Country, as this will significantly enhance solid waste management in Nigeria and facilitate a speedy shift to a circular or green economy.

Keywords: Environmental Risk, Green Economy, Islamic Green Finance, Nigeria, Solid Waste Recycling

INTRODUCTION

The idea of pursuing present needs without compromising those of the future generation brought about the concept of green economy. Green economy is an economic system wherein human well-being and social equity are improved while environmental risks and ecological scarcities are significantly minimized. It is believed that such an economy is needed for sustainable development. In a green economy, the economy is linked to the environment in such a way that production and consumption reduce wastes and pollutants. The production technique is adopted and resources employed reduce waste and pollution emission and revitalize the economy, create more job opportunity, reduce poverty, promote sustainable trade among others [1]. In other words, a green economy ensures that substantial income comes from green industry featuring renewable energy, liquid and solid waste management, recycling and recyclable products among others. Public and private investments that lower carbon emissions and pollution, improve energy and resource efficiency, stop the loss of biodiversity and ecosystem services, and promote energy and employment efficiency; are necessary to boost economic growth in a green economy. Regulatory reforms, public expenditure, and policy changes are necessary to encourage these investments [1].

Transitioning to a green economy is therefore an end to which the world is aiming. This is particularly true for the continent of Africa which is heavily dependent on natural resources. In Africa, people's means of livelihood is based on farming on fertile land, rearing of cattle, forestry, fishery, and mineral resources. This indicates that economy of most African countries is based largely on natural resources. These resources have been exploited, leading to high rates of economic growth in recent years.

However, African countries continue to have persistent poverty, unemployment, and underemployment despite their economic success, especially among the continent's rapidly expanding youth population [2]. Resources scarcity, environmental degradation as well as other environmental risk have been reported as the major factors which put future economic growth and development of the region at great risk. The bigger challenges arise when African countries have to address the continent's expanding needs for food, water, and health care while also lowering poverty and boosting the economy to increase employment and income levels [2]. Environmental challenges could be more serious in oil producing nations like Nigeria.

The Nigerian ecosystem has been experiencing an increasingly intense and rapid pace of disequilibrium since the 1970s civil war. This is primarily due to the increased exploration and exploitation of crude oil, which has led to an increase in demand for other natural resources like food, water, fibers, and timber. Although there is no denying that these national resources have made a considerable contribution to social progress and economic growth, overuse of them has resulted in irrevocable losses of ecosystem services and global biological diversity. With the rapid, abrupt, and irreversible changes in the ecosystem brought about by this unsustainable resource exploitation, many communities' survival is in jeopardy, as seen in the Niger Delta, the North's desertification and overgrazing, and the South's erosion, deforestation, and surface water pollution. Undoubtedly, these have made life harder for a number of Nigerians, particularly those who live in rural areas [3].

It is therefore important to note that environment and economic developments are both interdependent and complementary when it comes to sustainable development and focusing on one at the expense of the other could further impoverish the people. In other words, it is believed that the poor will be the most negatively impacted by climate change, local environmental harm, and the depletion of natural resources. The inability of the poor to engage in suitable and lucrative economic activities may also make it more difficult for them to adjust their way of life to changing environmental conditions [4]. Investments in development and poverty reduction are effective tools for reducing the negative effects of the environment on the well-being of the poor and providing them with the means to become more resilient to future environmental stresses [4]. Transition to green economy is thus imperative foster both economic and environmental development and aid poverty reduction in the society. [5] identified national regulations, policies, subsidies and incentives, international market, legal infrastructure, trade and technical assistance as enabling conditions for successful transition to green economy.

Although, sufficient emphasis has not yet been placed on financial institutions, the intermediation role of the institutions in achieving the goals of green economy could not be overemphasized. New forms of funding are needed to support the needs of a growing green economy as it transitions to low carbon or environment-friendly economic activity [6]. Thus, green finance has been suggested by proponents of a green economy as a workable way to satisfy the financial demands of people, businesses, and governments which engaged in initiatives and activities that protect the environment in a sustainable manner [7][8]. In the end, poverty reduction can be achieved

by promoting environmental conservation, demonstrating the optimization of benefits to the economy and environment, and realizing the growth of the green economy, through sustainable development of green financing [9].

It should however be noted that maintaining green environment and promoting social economic well-being of people via with green financial instruments could be restricted by the inability of the small sized recycling service providers, to meet the interest payment obligations of the conventional financial institutions. This tends to affect their access to green finance and affect the growth of their businesses. As such, Islamic green finance remains the only veritable means for enhancing performance of solid waste firms by providing interest-free, environmental-friendly financial services. [10] stated that Islamic green finance is better appreciated when it comes to preserving the environment as *shariah* lays emphasis on the rights of future generations. In fact, Islamic finance has responded to its environmental responsibility by designing and presenting environmentally friendly financing contracts in form of green sukuk to the market [11]. It however remains a question of research on whether Islamic financial institutions can do more than just issuing green sukuk to finance green industry. This study explored other possible green products like green *mudharaba*, green *musharaka*, green *murabaha*, and other Islamic green financial products that could be designed and tailored towards financing green projects like investment in solid waste management in Nigeria.

LITERATURE REVIEW

Green Economy and Enabling Conditions

Green economy refers to an economic system that bring about improves human well-being, social equity, and reduces environmental risks and ecological scarcities significantly [5]. [12] defined green economy as an economic system that is both environmentally and ecologically friendly and socially just. Such an economy features low carbon emissions, resource efficiency and social inclusion [13]. Green economy is that economy that utilizes resources efficiently in a bid to simultaneously achieve growth and sustainable development. In a collaborative definition, [14] view green economy as a growth and developmental vision which aimed at improving people's lives in ways that is compatible with sustainable development. In a green economy, a large part of income is earned from the green industry entailing production and marketing of floriculture and environmental horticulture crops [14]. Green economy may therefore be defined as that economy that efficiently utilizes resources to earn largely from green industry, promote economic growth and aid sustainable development.

Effective transition to a green economy requires certain enabling conditions that include regulatory framework, subsidies, market-based instruments among others. Presence of the conditions is imperative for sustainable growth and development of countries like Nigeria. As for the enabling conditions, well designed regulatory framework is necessary to drive growth and eliminate all impediments to green investment. Subsidies may also be necessary to promote green industry. Also, green investment can be stimulated with market-based instruments [14]. Financial institutions are also important for achieving sustainable development in a green economy.

Green Economy and Financial Institutions: Green Finance

Financial Institutions play significant role in economic growth for their intermediation function of mobilizing funds from surplus units and channeling same to the deficit units of the economy and thereby propelling growth. It is this financial intermediation role that make financial institutions a corner stone of green economy. The institutions are therefore expected to provide financial facilities to facilitate green investment, and to promote green industry. Such facilities are termed green finance. According to [15], green finance is a relatively new concept that provides a different kind of funding for people, businesses, and governments who wish to participate in low-carbon or green initiatives. [16] viewed green finance as financial activities and investments that allocate capital for promotion of environmentally sustainable economic growth and development. Green finance, according to [17], is the funding of initiatives that both improve the environment and generate financial returns. [18] defined green finance as financing arrangement that combines financial gains with environmental preservation.

A few of the advantages of green finance are as follows: low-risk financing [19]; distribution of funds to preserve the environment [18]; flow of funds to sustainable trade and investment activities [20]; and development of green investment and financing instruments (Sachs et al, 2019). However, green financing has some challenges that must be surmounted for financial institutions to maintain their catalytic role in the transition to green economy. [21] stated that financial providers scarcity, exclusion of small-scale business needs, lack of sufficient long-term financial instruments, uncertainty in government policies, lack of technical expertise as well as insufficient knowledge of green financing contracts are the major challenges facing green finance.

Islamic Green Finance

Islamic Green Finance refers application of sharia principles in the development of halal and

environmentally friendly financial products through which funds are allocated for productive purposes [22]. Shariah-compliant green financing could be tailored towards environmentally friendly projects like solar energy, marine waste management, ecosystem management, agriculture, biogas generators, wind farms, and other smaller businesses which protect natural environment or reduce the risk of global warming [11][23][24]. [25] stated that Islamic green finance emphasizes that people's needs should be met within the boundaries of a sustainable and efficient economic system. Activities that cause ecological disorder and environmental depletion are discouraged from being financed under Islamic green financing [26]. When environmental degradation follows climate change, Islamic finance is needed to conserve environment and improve climate action. This is because *shariah maqasid* emphasizes the general wellbeing of the entire ecosystem [26].

One major means by which Islamic finance contributes to environmental conservation and improves climate action, is the development of green sukuk as financial instrument. Sukuk has been defined by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) *Shariah* Standard, as a certificate of ownership which has the same value and represents an undivided share of ownership of a tangible asset, usufruct value (asset benefits), and service (services), or ownership of assets from a particular project or investment activity. Green sukuk covers investments that help in tackling environmental challenges and draws investors who have Shariah-compliant obligations as well as green investors [27]. green sukuk is issued to satisfy the criteria for safeguarding against environmental and climate-related risks. According to [26], green sukuk finance is available for ambitious energy efficiency, renewable transmission, infrastructure projects, solar parks, biogas facilities, and wind energy.

Concerns over how to finance clean energy sources have gained prominence as a result of rising environmental consciousness and the need for cleaner energy. Green Sukuk, like green bonds, is thus seen as a financing tool for financing green initiatives [28]. As a matter of fact, Green sukuk has gained regional and international recognition especially in countries like Malaysia [25]. Apart from sukuk, other green financial products like are green *mudharaba*, green *murabaha*, green *musharaka*, green *musharaka wa mutanaqisah* could be made available by Islamic financial institutions [29]. *Mudharaba* is a contract in which the customer, the entrepreneur, provides the skills and knowledge to manage the business or investment project, and the bank, as fund provider (*rabbulmal*), provides the financial resources. Any profit, if any, is split in accordance with a predetermined profit-sharing

ratio. However, in the event of a loss, the consumer merely loses his time and effort; the bank loses its investment [30]. In the case of *musharakah*, it refers to a joint venture that involves two or more people or organizations conducting business together and sharing profits and losses in accordance with the terms and conditions of the venture [31]. *Musharakah* contract may also be defined as a partnership agreement wherein the partners provide cash, have the power to govern the business, share profits as agreed upon, and endure losses commensurate with their equity stake [32]. *Musharaka wa mutanaqisah* is a diminishing partnership in which a client eventually owns a project or product. It is a hybrid of a sale and sharing contract in which ownership is transferred through the sale and profit-sharing structure [33]. It is also known as *musharakah tantah bi al tamlik* (partnership which ends in transferring of ownership to one party). These products can be incorporated into green financing of Islamic financial institutions. Another Islamic financial product that can feature in green finance is *murabaha*. It is a cost-plus transaction between a consumer and an Islamic bank in which the bank buys a commodity that the customer needs and the commodity is subsequently sold to the customer by the bank at cost plus markup. [34] claims that *murabaha* is a sale agreement rather than a loan, in which a bank purchases a product at the request of the customer and resells it to them on a cost-plus-profit basis.

Solid Waste and Solid Waste Recycling

[35] define solid waste as anything that is disposed of in the environment, usually in compliance with legal regulations, after it has lost its original utility for the consumer. Another definition of solid waste is the buildup of objects, materials, or substances that eventually contaminate the earth, water, and air [36]. Soil, groundwater, and surface water are contaminated by metals and other dangerous compounds that are continuously released. Solid wastes are typically thought of as unwanted materials that must be eliminated from the environment as soon as possible. However, as waste for one individual can become wealth for another, this idea is relative rather than absolute. Solid waste needs to be managed effectively since it can be a resource, a contaminant, or both [35]. Solid waste management refers to the process of managing solid waste by means of waste generation, storage, collection, transportation, treatment, and disposal. It discusses how solid trash is stored and disposed of, and it offers recyclable waste solutions [37].

Waste management techniques include land filling, which entails burying the solid waste, combustion, which involves reducing the amount of waste and occasionally directing it toward the production of energy, recycling, and source reduction, which entails

preventing the production of solid waste [38]. [39] recycling has to do with the process of reusing trash or undesired materials to create new products. Unwanted materials and/or energy are reintroduced into the industrial chain through recycling. Papers, metals, polymers, and other materials may be returned into the production chain as undesirable materials. Virgin materials that would have come from limited natural resources like coal, oil, wood, and many more are replaced by the materials used in recycling processes [40].

Islamic Green Finance and Poverty Alleviation

Green financing plays a pivotal role in attaining sustainable development by stimulating the expansion of eco-friendly sectors, including the utilization of renewable energy, enhancement of energy efficiency, and the advancement of sustainable agriculture [41]. Green finance lowers poverty by raising living conditions, generating new job possibilities, and raising income. It also lessens the adverse effects of environmental deterioration and climate change, which disproportionately affect the poor [41]. Islamic finance is centered on establishing a moral financial system with the goal of redistributing wealth, which will eventually reduce poverty [42]. Achieving an equitable distribution of income, raising income levels through pro-poor programs, and giving all socio-economic segments of the society equal opportunities, are all ideal components of the Islamic approach to reducing poverty [43]. The fundamental tenets of Islamic finance are comparable to those of sustainable finance, including financial stability and economic expansion, wealth distribution and poverty reduction, social and financial inclusion, and environmental preservation [44]. Therefore, Islamic green finance is expected to have effect similar to that of conventional green finance, on poverty reduction. Summarily, Green financing, according to some scholars, will alleviate poverty [45]. This is because, green finance can reduce shortages, hasten the transition to green economy and propel economic development [46].

THEORETICAL DISCUSSION

Theory of Sustainable Development

The theory of sustainable development is the foundation of green finance and how it strives to reduce poverty. The theory places equal emphasis on social and environmental harmony and long-term, steady economic development. Following the UN's global introduction of the sustainable development theory, a sizable number of development specialists and pundits embraced the idea and worked to further and popularize it [47]. Sustainable development is that development that satisfies everyone's basic needs while maintaining, safeguarding, and repairing the ecosystem's health and integrity. This is done without endangering the planet's ability to meet the needs of

future generations or exceeding the long-term capacity limit of the ecosystem [48]. Another aspect of sustainable development has to do with restructuring of the value system that underpins human societies [49].

The theory of sustainable development has however been criticized as being founded on weak theoretical foundation. [47] identified placing too much emphasis on generational needs rather than human rights, lack of precision on the actual needs of future generation, inability to justify the neglect given to the needs of present generation as some of the major weaknesses of the theory. The theory has also been criticized for being one-dimensional and disproportionate when it comes to the needs of developing countries [50]. However, the criticism laid on the theory does not invalidate the theory and its applicability is still valid. It is on that premise that [47] argued that whatever the criticism directed to theory is not meant to destroy or damage such a theory but to improve it.

Despite the criticisms, the theory of sustainable development still remains relevant in researches on green finance. The foundation of green finance could be traced to sustainable development whose main goal is poverty reduction. Sustainable development theory highlights the significance of long-term, steady economic development as well social and environmental harmony. By encouraging green sectors' expansion, reducing poverty by boosting income, raising standards of living, and creating new job opportunities, green finance plays critical role in achieving sustainable development. In line with the theory of sustainable development, Islamic green finance has the potentials to improve green industries, create more jobs and increase income levels thereby reducing the level of poverty in the society. Sustainable development theory, which highlights the importance of social welfare, balanced economic growth, and environmental conservation, forms the theoretical foundation of green finance's efforts to reduce poverty [41]; hence the theory upon which this study is hinged.

Theory of Vicious Cycle of Poverty

The vicious cycle of poverty theory was first presented by Nurkse in 1953. It explains a cyclical network of interconnected causes that act and react to keep the impoverished in their precarious situation [48]. According to [49], poverty seems to have been caused by three primary factors: unequal resource ownership, differences in the quality of human resources, and limited access to capital. Nurkse centered the vicious cycle of poverty theory on these three causes of poverty: lack of access to capital is the cause of low productivity, low income, low level of savings, and low investment. Differential resource ownership can result in different income distribution, and unequal human resource quality may lead to low productivity [43].

Unless a person's income rises sufficiently to escape the cycle of poverty, the vicious cycle theory predicts that they will likely stay in poverty [44]. People in higher income brackets are able to save and invest, which allows them to escape the cycle of poverty, while those in lower income brackets are unable to do either and thus remain in their current situation. [39]. The theory's proponents argue that developing nations may find it difficult to break free from the cycle of poverty until they launch massive investment initiatives [35]. The poverty cycle in developing nations like Nigeria appears to be multifaceted, with low income frequently leading to low education and low technical skills, which again contribute to low income [37]. It is line to think about green investment which demands green financing specifically Islamic green finance as part of such activities.

EMPIRICAL REVIEW

Empirical studies are scanty on financing of solid waste management, especially in the area of green finance. Some of the few existing studies were reviewed in this study. [48] evaluated financial support for industrial solid waste treatment in China. The study concluded that financing of waste management comes mostly from government investment, financial industry support and financial market securities. Likewise, [44] investigated the connection between solid waste management and green finance. The data was analyzed using the grey correlation model. According to reports, there is a substantial association between solid waste disposal and green financing. Regarding Islamic sustainable finance, [46] discovered that Green Sukuk might be a good Islamic finance tool for funding Indonesian municipalities' significant waste management. There is a dearth of empirical data about the connection between green finance and solid waste management in Nigeria, despite the fact that insufficient funding has been identified as a hindrance to efficient waste management [47]. This study addressed this research gap and adds to the body of knowledge on solid waste recycling and green finance in Nigeria. By investigating the possibilities of Islamic green financial services and their effects on solid waste recycling services in Nigeria, this study specifically advances research efforts on Islamic finance.

METHODOLOGY

The model, which was designed to investigate the potential impact of Islamic green financial products on performance of solid cycling companies in Nigeria, is specified as follows:

Solid waste recycling performance = f (Islamic green financial products)

While Islamic green finance was indicated by Islamic financial services that may be produced and adapted towards environmental sustainability, the solid waste

recycling companies' performance was indicated by the rise in their turnover (TOV). Green mudharaba, green murabaha, green musharaka, green musharaka wa mutanaqisah, and green Ijarah are among the services listed by [29]. The model was expressed

econometrically as follows:

$$TOVi = \beta_0 + \beta_1gmudi_1 + \beta_2gmuri_2 + \beta_3gmushi_3 + \beta_4gmumi_4 + \beta_5gijri_5 + \beta_6gsuk_6 + \mu_i \dots \dots \dots 1$$

Table 1: Descriptions of Independent Variables and the Expected Effect on Solid performance of solid waste management firms

Variables	Descriptions	Expected sign (+/-)
Gmud	green mudharaba	+ve
Gmur	green murabah	+ve
gmush	green musharaka	+ve
gmum	green musharaka wa mutanaqisah	+ve
Gijr	green Ijarah	+ve
Gsuk	Green sukuk	+ve

Source: Authors' Compilation (2024)

Survey design was employed and the study was restricted to Solid waste cycling firms that are registered with the Lagos Waste Management Authority (LAWMA). The list of the firms was obtained from LAWMA's Website. As at the time of this study, there are 57 companies registered with LAWMA. A Google Form Questionnaire was used to gather information from the registered recyclers. Each firm's contact received 40 copies of the questionnaire. 1885 of the 2280 copies of the questionnaire that were distributed were properly filled out and sent back. Data analysis was conducted using the returned copies of 1885. The data gathered from the respondents was analyzed using logistic regression and descriptive statistics.

This section describes validity and reliability tests as well as questionnaire retrieval analysis. Tables 2 through 4 displayed the results.

Table 2: Questionnaire Retrieval Analysis

Questionnaire	Frequency	Percentage (%)
Returned copies	1885	83
Wrongly filed/unreturned copies	395	17
Copies administered	2280	100

Source: Field Survey (2024)

Two thousand, two hundred and eighty (2280) copies of questionnaire were administered. Out of entire administered copies, one thousand eight hundred and eighty-five (1885) copies, representing 83% were returned and used for the analysis. The remaining 395 copies were unreturned.

RESULTS AND DISCUSSION

Preliminary Analysis

Table 3: Validity Tests

Variables	KMO	Bartlett's Test of Sphericity		
		Chi-square	Df	P-value
Operational Questions	.824	743.016	216	0.000

Source: Author' computation (2024)

The construct validity was evaluated in terms of convergent validity using confirmatory factor analysis. Two tests were performed: Kaiser-Meyer-Olkin (KMO) and Bartlett's. One measure for sample adequacy is the KMO, which ranges from 0 to 1. Bartlett's test sphericity should be significant, which means the Sig.

value should be .05 or less. The test's findings are shown in Table 3. Using the Bartlett's test of sphericity, this shows that all measurement items in all samples are significant at level 0.01. Its KMO value is 0.824 for each construct. This result suggests the measurement scales' validity.

Table 4: Reliability Statistics

Variables	Cronbach's Alpha	No. of Items
Green mudharaba	0.78	3
Green murabah	0.86	3
Green musharaka	0.89	3
Green musharaka wa mutanaqisah	0.79	3
Green ijarah	0.76	3
Green sukuk	0.83	3

Source: Source: Author' computation (2024)

The reliability analysis results in Table 4 show that the instrument is stable and reliable in assessing how Islamic green money affects solid waste management. Cronbach's alpha scores above the minimal threshold

(Cronbach's alpha >.70) indicate satisfactory levels of dependability in the Cronbach's alpha test of each variable influencing solid waste recycling firm turnover.

Regression Result

Table 5: Estimates of Ordered Logit Regression and the Marginal Effect

INDEPENDENT VARIABLES	Dependent variable is turnover growth	
	coefficients of ordered logit	Marginal effect after ordered logit
	(1)	(2)
Gmud	0.12** (0.04)	0.26** (0.11)
Gmur	0.41** (0.18)	0.64** (0.23)
Gmus	3.49* (0.23)	0.35* (0.11)
Gmum	0.39 (0.21)	0.17 (0.60)
Gijr	0.78*** (0.15)	0.013*** (0.02)
Gsuk	-0.12 (0.21)	-0.33 (0.17)
Constant cut1	-0.002 (0.001)	-0.008 (0.005)
Constant cut2	7.4210 (5.3241)	
Constant cut3	3.1209** (0.9499)	
Observations	1885	1885
Fitness statistics	83.75	
Probability of fitness statistics	0.0000	

Source: Author's Computation (2024).

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 denotes 1%, 5% , 10% level of significance respectively.

Table 5 displays the findings of an ordered logit regression analysis of how Islamic green finance factors affect the turnover of solid waste management firms in Nigeria. Columns 1 and 2 display the ordered logistic regression and its marginal influence, respectively. The kind and importance of the relationship between the independent variables were estimated using the coefficients. The marginal effect was used to evaluate how the explanatory factors (Islamic green financial services) affected the dependent variable (turnover of solid cycling firms).

The turnover growth (TOG) was positively correlated with green murabaha (gmur), green mudharaba (gmud), green musharaka (gmus), and green ijarah (gijr), according to the results of the ordered logit regression in Columns 1 and 2. The findings suggested that more investment in the form of green financial products from

Islamic financial institutions could lead to an increase in the turnover of waste management companies. It was discovered that there was a statistically significant correlation between the Islamic green finance variables (gmur, gmud, gmus, and gijr). At 5% and 10%, the variables were significant. The standard errors of the variable coefficients, which are fewer than half of the coefficients, show this. Green sukuk (gsuk) was found to have an insignificantly negative association with turnover of solid waste management enterprises in Nigeria, but green musharaka wa mutanaqisah (gmum) showed an insignificantly positive link. At the 10%, 5%, and 1% levels of significance, there was no statistically significant correlation between turnover and either gsuk or gmum.

The coefficients of the cut parameters were used to examine the response categories of strongly disagreed, agreed, strongly disagreed, and uncertain disagreed. If

the cut values are statistically significant, the categories remain in the interpretation; otherwise, the insignificant categories are compressed to form a category. All of the constant cut values in Table 5 are statistically insignificant, with the exception of cut 3. As a result, all other categories, except for categories 3 and 4, are compressed. This suggests that respondents are not distinguishing between strongly disagreed and undecided disagreed, despite the fact that agreed and highly agreed are clearly stated. The goodness of fit of the model is evaluated by presenting its log likelihood chi-square statistics. The fitness statistic for the ordered logit is 83.75 (p-value = 0.0000). because the p-value for the fitness statistics is less than the significance limit of 5%. The model fits the data well. As a result, the model's output may be relied upon to make wise judgments and suggestions.

According to the study's findings, solid waste recycling management may be connected to Islamic green financial instruments, with the exception of green sukuk. This research implies that financing opportunities from Islamic banks and other financial institutions tend to enhance the operations of solid recycling service providers (businesses) in the nation. The reason for this is that the businesses will now have more access to capital for financing waste management infrastructures and equipment.

The results of this study are consistent with those of [41], who found a substantial link between solid waste disposal and green finance. However, there was a negative correlation between solid waste management and green sukuk in terms of the enterprises' turnover growth. The lack of significance of the results may suggest that the respondents did not believe green sukuk was a suitable tool for their company's size. Sukuk is a capital market instrument, thus it might not be appropriate for the companies' immediate financial need. This result ran counter to that of [47], who concluded that Green Sukuk was a feasible Islamic finance tool for funding significant waste recycling businesses.

CONCLUSION AND RECOMMENDATION

This study set out to assess the potential of Islamic green finance and its potential impact on solid waste recycling companies in Nigeria. Since Islamic green finance can serve as an alternative funding source that is in line with the principles of sustainability, social responsibility, and moral behavior, it is believed that supporting solid waste services providers could improve the effectiveness of solid recycling in Nigeria. The study concluded that Islamic green financial services are necessary to enhance solid waste management in Nigeria, which is consistent with its findings. Based on the findings of the study and there conclusion drawn thereof, the study recommended that

Islamic banks in Nigeria should implement shariah-compliant green financial products by allocating their funds to green investments, like solid waste recycling businesses. This will significantly enhance solid waste management in Nigeria and facilitate a speedy shift to a circular or green economy.

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