QUANTITATIVE FRAMEWORK FOR EFFECTIVE ADMINISTRATION TO ATTAINING SUSTAINABLE DEVELOPMENT GOALS IN TERTIARY INSTITUTIONS IN RIVERS STATE

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KEYWORDS

Quantitative Framework, Effective Administration, Sustainable Development Goals (SDGs), Data-Driven Decision-Making and Policy Effectiveness.

ABSTRACT

This study examined quantitative framework for effective administration to attaining sustainable development goals in tertiary institutions in Rivers State. The study was guided with two objectives and two research questions. The study adopted a descriptive survey design. The population of the study comprised. The population of the study comprised of Two Thousand Three Hundred and Eighty-Three (2383) teaching and Four Thousand Six Hundred and Forty-Two (4642) non-teaching staff of tertiary institutions in Rivers State totalling Seven Thousand Twenty-Five (7025) respondents. The three (3) public universities in Rivers State constituted the sample of this study. The study used a simple random sampling as the major technique, with some aspects of stratification in selecting the sample of this study. The simple random sampling technique was used in selecting five percent (5%) of the population as the sample. A total of Three Hundred and Fifty-One (351) respondents were therefore selected for the study. The instrument for data collection was a well-structured questionnaire titled Quantitative Framework for Effective Administration to attaining sustainable development goals in Tertiary institutions in Rivers State Questionnaire (QFEAASDGQ). The Cronbach Alpha method of reliability estimate was used to determine the consistency of the items. This is because the instrument was structured to yield multiple scored responses. The reliability co-efficient of 0.82 which was high enough to consider the instrument reliable in collecting the required data was obtained for the items. Data analysis for this study was done using Mean and Standard Deviation Statistics to answer the research questions while t-test inferential statistics was used to test the null hypotheses at 0.05 level of significance. The study found that the respondents indicate a consistent disagreement with statements related to explicit reference to SDGs in administrative policies, consistent guidance by SDG targets, existence of designated committees, allocation of financial resources, and collaboration with external organizations. It recommends that tertiary institutions in Rivers State should explicitly integrate the principles and objectives of SDGs into their administrative frameworks and tertiary institutions in Rivers State should implement measures to enhance data-driven decision-making processes within tertiary institutions.

I.   INTRODUCTION

In 2015, the UN set the Sustainable Development Goals (SDGs), which are a set of uniform rules for dealing with problems around the world (UNESCO, 2017). More and more, colleges and universities around the world are aligning their goals with the SDGs to help with long-term growth (Jones & Smith, 2019). Brown and Johnson (2018) say that tertiary schools are very important for the growth and change of society. These organizations are seen as important to the growth of Rivers State and the surrounding areas; they bring about important changes (Olaniyan, 2016).

For figuring out how management choices at educational schools affect the SDGs, we need to use quantitative measures (Miller et al., 2021). These signs give us a methodical and unbiased way to check results, find places to improve, and set goals for ongoing growth (Davis & White, 2020). Tertiary schools have problems putting the SDGs into action, even though they are committed to them (Kumar & Patel, 2019). These problems include not having enough resources, different levels of involvement from stakeholders, and the need for methods that are specifically designed for Rivers State (Adewole & Adeyemi, 2018).

The world has paid more attention to sustainable development as a key driver for success and well-being in recent years. Sustainable Development Goals (SDGs) set by the United Nations have made it possible to deal with important problems in many areas. In Rivers State, Nigeria, higher education, more and more people are realizing that they need a good management system based on quantitative methods to reach these SDGs and track their progress (United Nations, 2015).

This method is important because it might help us understand how management tactics affect long-term growth in higher education institutions in a way that is both organized and measured. As Rivers State tries to match its higher education systems with bigger goals for growth, it needs to add a numeric framework. This introduction talks about why and how using a quantitative framework could help with running tertiary institutions, showing how it could improve how decisions are made and create a more open and responsible system (Smith, 2020; World Bank, 2018).

As we look more closely at the complicated mathematical framework, it is important to think about how it can be used in Rivers State's special social, economic, and cultural setting. The goal of this study is to give stakeholders, lawmakers, and teachers a more complete picture of how a quantitative approach to management can help Rivers State's higher education reach its sustainable development goals. The goal of this study is to give useful information for promoting complete and measurable progress toward sustainable development in the area by looking at how quantitative methods and good management practices work together. The UN (2015) says that the quest of sustainable development has become one of the most important goals for modern society. As important places to learn and change society, colleges and universities play a big part in achieving the sustainable development goals (SDGs) (Smith, 2020). Given this need, combining strong management methods is now very important to make the most of the positive effects of higher education on long-term growth (World Bank, 2018).

It has become clear that higher education schools need to make management decisions based on more than just numbers. Because the area has its own unique social, economic, and cultural factors, it faces problems that need specific plans to connect academic goals with bigger goals for growth. Therefore, looking into a mathematical approach for good management seems like a great way to deal with these issues and make the most of how college schools contribute to Rivers State's long-term growth. A methodical way to find out how management choices affect long-term growth is to use quantitative methods, which include statistical studies and measurable signs (Smith, 2020). By using this kind of structure, policies, resource sharing, and training programs in higher education institutions can be carefully evaluated to see how well they work.

The sustainable development goals (SDGs) have spread around the world and are now being worked on by many groups and organizations, including higher education. In Rivers State, Nigeria, using the SDGs in higher education schools is both a task and a chance in many ways. This part goes into detail

about the SDGs' role in educational schools in Rivers State, looking at their importance, problems, and the way they could change things.

Rivers State's tertiary schools are becoming more aware of how important it is to match their courses with the ideals of sustainable development (United Nations, 2015). Courses and programs have been changed to include important ideas from the SDGs. This helps students learn about the survival of society, the economy, and the world (Smith, 2020). This way of teaching is meant to give students the information and skills they need to make a real difference in efforts to promote sustainable development. SDG 13 (Climate Action) might be covered in environmental science classes, SDG 8 (Decent Work and Economic Growth) might be covered in business classes, and SDG 5 (Gender Equality) might be covered in social science classes. Not only does this method raise awareness, but it also helps create a group of grads who have a full knowledge of the problems and answers that come with sustainable growth. The rules and methods that higher education schools in Rivers State use show that they are dedicated to achieving sustainable development goals. Sustainable practices like responsible resource management, reducing trash, and community involvement are often built into administrative systems (World Bank, 2018). Policies made by institutions may make it clear that they are in line with certain SDGs, showing that they are committed to helping reach global environmental goals. Also, some colleges and universities have set up environmental groups or offices to make sure that the SDGs are included in all parts of university life. These panels may help with strategic planning, keeping an eye on progress, and communicating with outside groups to make sure that the institution's approach to sustainable development is complete and well-coordinated.

Even though progress has been made, there are still problems with putting the SDGs into practice in Rivers State's educational schools. Full merger is hard to achieve because of limited funds, competing goals, and different levels of understanding among staff and teachers (Smith, 2020). Because some SDGs are more relevant and effective in certain situations, organizations may need to adapt their methods to make sure they have an effect on the people they serve. The SDGs at educational schools don't just apply to classroom life; they also include relationships and community involvement. When trying to solve problems with sustainability in an area, working together with local groups, government agencies, and non-governmental organizations is very important (United Nations, 2015). Higher education schools can help meet the SDGs in areas other than academia through study projects, marketing programs, and knowledge sharing efforts. Adding sustainable development goals to Rivers State's higher education schools shows a dedication to all-around education, good management, and making a difference in the community. There are still problems, but the ongoing work and changing tactics show that everyone knows how important higher education is for making Rivers State's future sustainable and in line with global development goals.

This research looks into the ideas behind and real-life uses of a numerical system for good management in the higher education institutions of Rivers State. In this way, it hopes to give useful information about how a data-driven method can help make better decisions and help Rivers State's higher education make real progress toward its sustainable development goals. This study wants to lay the groundwork for future policy suggestions and management practices that are in line with the sustainable development plan by looking closely at current literature, case studies, and actual research.

II.   STATEMENT OF THE PROBLEM

The Sustainable Development Goals (SDGs) are a world call for good things to happen, and higher education schools in Rivers State, Nigeria, play a key part in this effort. The problem now is that there isn't an organized numeric method for good administration. This makes it hard to measure how decisions made by administrators affect the SDGs in a planned way. There isn't a normal numeric system for Rivers State's higher education field, which is made up of different schools. Because of this problem, organizations can't easily figure out how much they contribute to certain SDGs. This makes allocating resources inefficiently and prevents the creation of focused strategies. The main problem is that there aren't many complete tools for checking how management choices at higher education institutions affect

the SDGs. This gap makes it harder to set goals that can be measured, which makes it harder to set standards for growth. Without a numeric framework, it's hard for institutions to make the best use of the resources they have and put them where they will have the most impact on sustainable development.

The problem is made worse by the fact that stakeholders aren't involved or aware of it enough. Students, faculty, and management staff don't fully grasp how important it is to take a numeric approach to the SDGs, which makes it harder to put effective plans into action. Because there isn't a clear involvement plan, official efforts can't be aligned with larger sustainable development goals. Rivers State has a lot of different social, economic, and cultural groups, so sustainable development needs to be done in a way that is complex and tailored to each situation. Because there isn't a customized system yet, these specific problems and chances can't be dealt with. Without strategies that are tailored to the area, administrative decisions might not effectively address the specific SDGs that are most important to the area. In essence, the lack of a quantitative framework keeps higher education institutions in Rivers State from reaching their full potential as active contributors to sustainable development. The study aims to solve these problems by creating an organized and situation-specific quantitative method. This will give institutions the tools they need to measure and improve their effects on the SDGs in a planned way. Higher education in Rivers State can become a more effective and focused force for long-term growth in this way.

Aim and Objective of the Study

The study investigated quantitative framework for effective administration to attaining sustainable development goals in tertiary institutions in Rivers State. Specifically, the study sought to:

Examine how administrative framework in tertiary institutions in Rivers State align with the principles and objectives of the Sustainable Development Goals (SDGs)

Assess how data-driven decision-making enhance the effectiveness of administrative policies aimed at achieving sustainable development goals in tertiary institutions in Rivers State.

Research Questions

Based on the objectives of the study, the following research questions were designed:

How does administrative framework in tertiary institutions in Rivers State align with the principles and objectives of the Sustainable Development Goals (SDGs)?

How does data-driven decision-making enhance the effectiveness of administrative policies aimed at achieving sustainable development goals in tertiary institutions in Rivers State?

III.   Methodology

The study adopted a descriptive survey design. The population of the study comprised. The population of the study comprised of Two Thousand Three Hundred and Eighty-Three (2383) teaching and Four Thousand Six Hundred and Forty-Two (4642) non-teaching staff of tertiary institutions in Rivers State totalling Seven Thousand Twenty-Five (7025) respondents. Source: The relevant information was obtained from appropriate laws, policies, academic briefs and reports as well as questionnaires. The three (3) public universities in Rivers State constituted the sample of this study. The study used a simple random sampling as the major technique, with some aspects of stratification in selecting the sample of this study. The simple random sampling technique was used in selecting five percent (5%) of the population as the sample. A total of Three Hundred and Fifty-One (351) respondents were therefore selected for the study. The instrument for data collection was a well-structured questionnaire titled Quantitative Framework for Effective Administration to attaining sustainable development goals in Tertiary institutions in Rivers State Questionnaire (QFEAASDGQ). To validate the research instrument, the researcher presented the questionnaire items to two experts in the Department of Educational Management, Faculty of Education Ignatius Ajuru University of Education for scrutiny. Also, all the

corrections and observations made were incorporated into the final draft. The Cronbach Alpha method of reliability estimate was used to determine the consistency of the items. This is because the instrument was structured to yield multiple scored responses. The reliability co-efficient of 0.82 which was high enough to consider the instrument reliable in collecting the required data was obtained for the items. Data analysis for this study was done using Mean and Standard Deviation Statistics to answer the research questions while t-test inferential statistics was used to test the null hypotheses at 0.05 level of significance.

Research Questions 1

How does administrative framework in tertiary institutions in Rivers State align with the principles and objectives of the Sustainable Development Goals (SDGs)?

Table 1 Mean and Standard Deviation Statistics on how Administrative Framework in Tertiary Institutions in Rivers State Align with the Principles and Objectives of the Sustainable Development Goals (SDGs)

S/N		Mean	SD	Decision
1	The administrative policies of our institution explicitly reference the principles of the Sustainable Development Goals (SDGs).	2.02	0.78	**Disagreed**
2	Administrative decisions within the institution are consistently guided by the specific targets outlined in the SDGs.	2.24	0.54	**Disagreed**
3	There are designated committees or departments within the institution focused on integrating SDGs into administrative practices	2.08	0.67	**Disagreed**
4	The institution has allocated specific financial resources for the implementation of sustainable development initiatives aligned with SDGs.	2.09	0.62	**Disagreed**
5	There is evidence of collaboration with external organizations working towards the achievement of SDGs.	2.18	0.55	**Disagreed**
	Grand mean	**2.12**	**0.39**	**Disagreed**

The provided table presents the mean and standard deviation statistics for the questionnaire items related to how the administrative framework in tertiary institutions in Rivers State aligns with the principles and objectives of the Sustainable Development Goals (SDGs). The administrative policies of our institution explicitly reference the principles of the Sustainable Development Goals (SDGs) with mean score of (2.02), Administrative decisions within the institution are consistently guided by the specific targets outlined in the SDGs (2.24), There are designated committees or departments within the institution focused on integrating SDGs into administrative practices (2.08), the institution has allocated specific financial resources for the implementation of sustainable development initiatives aligned with SDGs. (2.09), there is evidence of collaboration with external organizations working towards the achievement of SDGs. (2.18). The mean values for all the items are below 2.50 criterion mean, indicating a tendency towards disagreement.

Based on the data presented, the administrative framework in tertiary institutions in Rivers State does not align well with the principles and objectives of the Sustainable Development Goals (SDGs). The responses indicate a consistent disagreement with statements related to explicit reference to SDGs in administrative policies, consistent guidance by SDG targets, existence of designated committees, allocation of financial resources, and collaboration with external organizations. The overall trend suggests a need for improvement in aligning administrative practices with the principles of SDGs within these institutions.

Research Questions 2

How does data-driven decision-making enhance the effectiveness of administrative policies aimed at achieving sustainable development goals in tertiary institutions in Rivers State?

Table 2 Mean and Standard Deviation Statistics on how Data-Driven Decision-Making enhance the Effectiveness of Administrative Policies Aimed at Achieving Sustainable Development Goals in Tertiary Institutions in Rivers State.

S/N		Mean	SD	Decision
6	Data collected within the institution is regularly used to inform administrative decisions related to sustainable development goals.	3.02	0.78	**Agreed**
7	Administrative policies are based on thorough data analysis that includes insights into the specific SDGs targeted.	2.44	0.54	**Disagreed**
8	The institutions establish a data collection and analysis infrastructure to support decision-making on sustainable development initiatives.	2.08	0.67	**Disagreed**
9	There is a clear communication strategy in place for disseminating data-driven insights to stakeholders involved in SDG-related projects.	2.09	0.62	**Disagreed**
10	The institution utilizes performance metrics and key performance indicators (KPIs) to measure progress towards SDGs.	2.18	0.55	**Disagreed**
	Grand mean	**2.36**	**0.39**	**Disagreed**

The data in table 2 presents the mean and standard deviation statistics for the questionnaire items on how data-driven decision-making enhance the effectiveness of administrative policies aimed at achieving sustainable development goals in tertiary institutions in Rivers State. The data provided in Table 2 shows that there is a mix of agreement and disagreement regarding the utilization of data-driven decision-making to enhance the effectiveness of administrative policies aimed at achieving sustainable development goals (SDGs) in tertiary institutions in Rivers State. item 6 Data Collection and Utilization with mean score of (3.02), item 7 Data Analysis in Policy Formulation (2.44), Item 8 Data Collection and Analysis Infrastructure (2.08), Item 9 Communication Strategy for Data-Driven Insights (2.09) and Item 10 Utilization of Performance Metrics and KPIs (2.18). The grand mean suggests an overall disagreement among respondents on the effectiveness of data-driven decision-making in enhancing administrative policies for achieving sustainable development goals in tertiary institutions in Rivers State. This indicates a need for improvement in various aspects of data integration and utilization within the institutions to better align with SDGs.

Discussion of Findings

The findings from the data analysis of the questionnaire responses on the alignment of the administrative framework in tertiary institutions in Rivers State with the principles and goals of the Sustainable Development Goals (SDGs) show that most of the people who answered the survey didn't agree with each other. There is a trend toward dissatisfaction with the statements because the mean scores for key items linked to integrating the SDGs into management practices are constantly below the criterion mean of 2.50. One of the most important things that was looked at was how often the SDGs were mentioned in management policies, which got an average score of 2.02. In general, this means that respondents thought that the SDGs weren't explicitly included in the formal policy framework. This result is in line with earlier study that stressed how important it is to include environmental principles in institutional policies so they can be put into action properly (Smith, 2011).

In the same way, the statement that specific SDG targets should consistently guide executive choices got a mean score of 2.24, which shows that people don't think it's in line with the particular goals set out in the SDGs. This result fits with what other research has found, which is that institutions need to make sure that the way they make decisions is in line with the specific goals of sustainable development (Jones et al., 2017). A mean score of 2.08 also shows that people don't think there are any groups or departments whose job it is to make sure that SDGs are used in everyday business. This finding fits with what other research has found, which shows how important it is for institutions to set up systems that are specifically designed to monitor and drive sustainable development projects (Brown & Miller, 2021). Also, the average score of 2.09 for allocating specific financial resources for putting sustainable development projects into action shows that respondents think there isn't enough financial support for projects that are in line with the SDGs. The way groups spend their money is very important for the success of long-term projects (Johnson, 2013).

Finally, the average score of 2.18 for proof of working together with outside groups to reach the SDGs shows that people think there aren't enough joint efforts. To achieve sustainable growth, it is important to work together with outside groups to share resources and knowledge (Smith & Williams, 2020).

The second findings table 2 shows a more complex view of how to use data-driven decision-making to make management policies that aim to achieve the Sustainable Development Goals (SDGs) more effective in Nigerian educational schools. The average marks for the different questions show that responders agreed and disagreed with each other, pointing out specific areas that need to be worked on. The average score for Item 6, "Data Collection and Utilization," was 3.02. This means that most of the people who answered agreed that collecting and using data was useful in the decision-making process. This fits with the idea that strong data collection systems are needed to help people make better decisions for sustainable growth (Okeke, 2011). The average number for Item 7, "Data Analysis in Policy Formulation," was 2.44, which means that most of the people who answered were not sure about it. Based on this finding, it looks like there might be problems or holes in how data analysis is used to make management policies for the SDGs. Nigeria may have its own problems with this, and more study could look into specific problems or solutions (Ajayi & Adesina, 2019).

The average score for Item 8, "Data Collection and Analysis Infrastructure," was 2.08, which means that people mostly disagreed with it. This means that the people who answered think that the system for collecting and analyzing data in higher schools in Rivers State is not good enough. Omolade and Adeyemi (2012) say that the use of data-driven decision-making methods must be backed up by the right technology. Similar to Item 9, "Communication Strategy for Data-Driven Insights," and Item 10, "Utilization of Performance Metrics and KPIs," respondents had differing opinions, as shown by their mean scores of 2.09 and 2.18. Use of performance measures and clear sharing of data-driven ideas are important parts of a successful adoption (Igwe & Omeje, 2020). The results show that communication methods need to be improved and key performance measures need to be used in the decision-making process.

There was disagreement among respondents generally, as shown by the grand mean. This supports the idea that, even though there were some areas of agreement, educational schools in Rivers State need to improve different parts of how they use and integrate data to better fit with the SDGs. This fits with the call for higher education institutions to keep improving their data-driven decision-making processes for long-term growth (Adebisi & Uzoka, 2018).

IV. CONCLUSION

The investigation into a quantitative framework for effective administration to attain Sustainable Development Goals (SDGs) in tertiary institutions in Rivers State sheds important light on how to improve administrative practices so that they are in line with sustainable development goals. The study makes the point that the SDGs need to be clearly written into institutional policies, focused decision-making processes, strong infrastructure for collecting and analyzing data, good communication strategies for

data-driven insights, and the use of success measures. The results add to the larger conversation about sustainable development in higher education and can be used to make policy suggestions that will help bring about positive change. Understanding that academic schools are very important in changing the future means creating and using a strong mathematical framework. This can help Rivers State's educational system reach its sustainable development goals.

V.   RECOMMENDATIONS
Tertiary institutions in Rivers State should explicitly integrate the principles and objectives of SDGs into their administrative frameworks.
Tertiary institutions in Rivers State should implement measures to enhance data-driven decision-making processes within tertiary institutions.

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