Texila International Journal of Academic Research
ISSN: 2520-3088
DOI: 10.21522/TIJAR.2014.11.03.Art014

State of Green Management Practices in Public Sector Institutions in the Bono Region of Ghana

Williams-Ohene Adjei[1*], John Asabi[2], Emmanuel Opoku Marfo[3], Paul Kwakwa[3], Jacob Aaworb-Nang Maabobrkor[4]

[1]*School of Business Management, Texila American University, Guyana*
[2]*Research Department, Holy Family Hospital, Berekum, Bono Region, Ghana*
[3]*School of Arts and Social Sciences, University of Energy and Natural Resources, Ghana*
[4]*Department of Social Science Education, Catholic University of Ghana, Fiapre*

Abstract

This study was conducted to assess the state of green management practices among public sector institutions in Ghana with focus on the Bono region. The descriptive study employed a mixed-method approach to recruit employees of seven public sector institutions in the region for data collection using stratified random sampling method. A five-point Likert scale and a semi-structured interview guide were used to gather quantitative and qualitative data respectively. In all, quantitative data of 228 participants together with qualitative data from 15 respondents were used for the study. The quantitative data was analyzed using SPSS version 23 software while thematic content technique was used to analyze the qualitative data. The results of the quantitative data showed that majority of the study participants took a neutral stance on all the items used to measure the three main constructs: environmental orientation, environmental strategy and environment development in public sector institutions. On the other hand, the qualitative results indicated description of green management, forms of green management practices and measurement of green management practice as sub-themes of state of green management practice in public sector institutions. In conclusion, the mixed findings of the study have shown low level of awareness on green management practice in public institutions and hence serves as basis for attention to create awareness on the practice in the Bono region and Ghana as a whole.

Keywords*: Environmental Development, Environmental Orientation, Environmental Strategy, Green Management, Public Sector Institution.*

Introduction

Background of the Study

Green management practices encompass a range of strategies and actions undertaken to minimize environmental impact while maximizing resource efficiency [1]. In the context of public institutions, green management practices include the implementation of sustainable policies, the adoption of eco-friendly technologies, and the promotion of environmentally conscious behaviour among employees and stakeholders [2].

A significant step towards promoting green management practices in public institutions is the development and implementation of sustainable policies and legislation [3]. Ghana has made notable progress in this regard through the development of the Ghana Environmental Policy Framework which outlines guidelines for environmental planning and sustainable management practices [4]. Additionally, the Public Procurement Authority

Received: 13.05.2024 ***Accepted: 13.07.2024*** ***Published on: 30.07.2024***
****Corresponding Author: oheneadjei.william@gmail.com***

introduced the Green Procurement Policy, which emphasizes the purchase of eco-friendly products and services by public institutions [5].

Empirically, few studies have assessed the state of green management practices in different sectors in Ghana. A study by Ampratwum et al. [6] to propose an implementation framework for green certification of buildings in Ghana found that despite the existence of knowledge on green management practices in Ghana, promotion for implementation of the practice by relevant bodies is lacking in the country. In another study by Li et al. [7], it was found that the environmental policy framework in the mining sector in Ghana is regulated by the state agencies including the Environmental Protection Agency and hence needs a paradigm shift that would contribute to effective implementation. In the hotel industry, Mensah and Blankson [8] conducted a study to assess the attitude of hotel managers towards green management practices in the capital city of Accra and found that there was poor attitude of smaller hotels toward green management practices as compare to larger hotels which were committed with regard to having environmental officers, written environmental policy documents, environmental action plans, history of implementation as well as having environmental certification. Others have also assessed practices relating to waste management and have revealed poor state of sustainability practices in health institutions [9].

Given the account of available studies on green management practices in Ghana, the attention to the state of the practice in public sector institutions is very limited. This gap in literature hinders policymakers and regulatory bodies from evaluating the implementation of green management practices among public institutions for improvement. The conduct of this study provides an opportunity to assess the state of green management practices in the Bono region to serve as foundation for policy direction on environmental sustainability practice in the public sector.

Problem Statement

Despite the role of public sector institutions in the adoption and implementation of government policies in Ghana, the state of green management practices in these institutions are not well documented. This problem makes it unclear about the commitment of public sector institutions in Ghana toward the promotion of environmentally friendly practices as the country is seeking to meet its Sustainable Development Goals (SDGs). This study sought to solve this problem by assessing the state of green management practices among public sector institutions in the Bono region.

Purpose

The main purpose of the study was to assess the state of green management practice in public sector institutions in the Bono region of Ghana. The study specifically assessed environmental orientation, strategy and development in the public sector institutions.

Limitations

A descriptive design was adopted for the study hence the study could not establish relationship between variables. The limited time and resources available for the study affected its scope which has potential to affect the level of representation of the results. Also, the results cannot be generalized as the study focused only on the Bono region.

Schematic Diagram

The study process is as shown in figure 1 below.

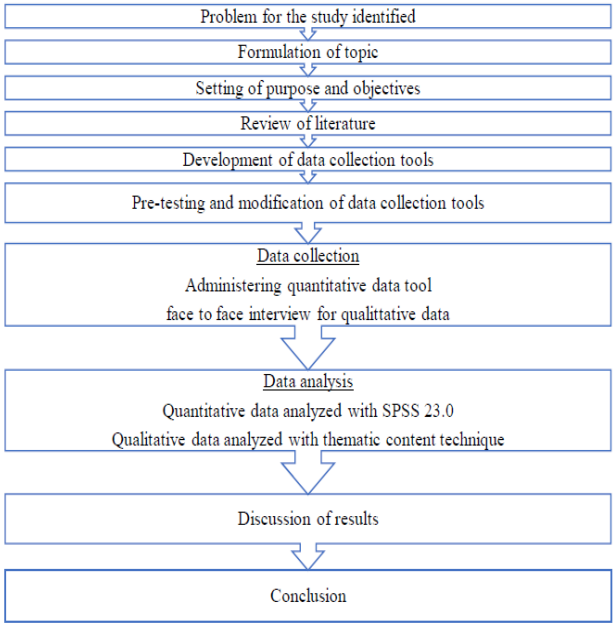

Figure 1. Schematic Diagram Showing the Study Process

Material and Methods

Study Design and Site

The study adopted a descriptive cross-sectional design with a mixed-method approach to assess the state of green management practices among public sector institutions in the Bono region of the republic of Ghana. The region is one of the sixteen administrative regions of Ghana and is located in the middle portion of the country. With Sunyani as the regional capital, the Bono region is made up of 12 Municipal and District Assemblies (MDAs).

According to the 2020 Population and Housing Census conducted by the Ghana Statistical Service (GSS), the population of the region is 1,208,649 consisting of 596,676 males and 611,973 females with 708,481 being urban dwellers and 500,168 as rural population [10].The region covers an area of approximately 9,826 square kilometres (3,790 square miles) and is bordered by six other regions. The region's topography encompasses vast grasslands, forests, rivers, and hilly landscapes, contributing to its ecological diversity [11]. The dominant climate is tropical, characterized by two primary seasons: a wet season (April to October) and a dry season (November to March).

Bono region is endowed with abundant natural resources, including fertile arable land suitable for agriculture, mineral deposits, and rich biodiversity. The region boasts a variety of crops such as cocoa, yam, maize, and oil palm, contributing significantly to Ghana's agricultural output. Additionally, its dense forests support timber and other non-timber forest products, emphasizing the importance of sustainable forest management practices. Public institutions in the Bono Region have the responsibility to lead in the implementation of green management practices to promote sustainability and preserve the region's natural heritage thus making it suitable for the study.

Study Population, Sampling and Sample Size

The population of the study involved 2,147 employees of selected public sector institutions in the Bono region. With stratified random sampling proportionate to size, respondents were proportionally selected from each institution. Employees who were below 18 years old and those on contract or temporary appointments as well as employees who could

not understand Twi or English language were excluded in the study. In all, 337 respondents were estimated using the Yamane formula for collection of quantitative data. Also, 15 respondents were sampled based on data saturation for the collection of qualitative data.

Data Collection Tool and Procedure

Collection of quantitative and qualitative data was done using a 5 point-Likert scale and semi-structured interview guide respectively. While the Likert scale was adopted, the interview guide was developed by the author. The quantitative data tool was pretested with seven respondents where reliability test was conducted to ensure that items with Cronbach alpha values less than 0.7 were dropped before main data collection. Face and content validity of the interview guide was ensured by subjecting it to peer and expert reviews before data collection.

Prior to collection of data, approval was sought from the authorities of the selected institutions. This was followed by a meeting with employees to brief them about the study. After addressing questions and concerns from employees, those who consented to partake in the study were given the questionnaire to complete. In terms of qualitative data collection, face-to-face interviews were held with selected respondents at separate places and times. All interviews were recorded with audiotape recorder while a journal was kept for field notes during the interview session.

Data Analysis

The quantitative data was analysed using SPSS version 23 software. Data from filled questionnaires was entered into the software one after the other. Entered data was screened for errors and omissions after which descriptive analysis was performed. The outcomes of the analysis were presented in tables.

The qualitative data on the other hand was analysed manually using thematic content technique. With this technique, the recorded interviews were transcribed verbatim, and the transcripts were read severally to observed similar patterns. These patterns were organized into themes and sub-themes which were described with support of quotes from the respondents.

Results

Socio-Demographic Characteristics of Participants

The majority of the participants in the study, 221 (57.4%) were male with 107 (32.6%) being females. In terms of age, 33 (10.1%) were 20 to 29 years, 208 (63.4%) were 30 to 39 years, 84 (25.6%) were 40 to 49 years while 3 (0.9%) were 50 years or more. Also, 176 (53.7%) of the participants were married while 152 (46.3%) were single. In addition, majority, 316 (96.3%) were Christians with 12 (3.7%) being Muslims. With regard to educational background, 31 (6.4%) had PhD, 93 (28.4%) had Master's degree, 157 (47.9%) had first degree, 36 (11.0%) had HND and 11 (3.4%) had basic education. Again, 21 (6.4%) of the participants worked with NPRA, 54 (16.5%) worked with GHS, 72 (22,0%) worked at RCC, 54 (16.5%) worked at UNER, 60 (18.3%) worked at GES, 30 (9.1%) worked at the Regional Hospital while 37 (11.3%) worked at GCB bank. The results further showed that 25 (7.6%) of the participants worked at the institution for at most 2 years, 155 (47.3%) had worked for 3 to 5 years at the institution, 77 (23.5%) worked for 6 to 8 years, 14 (4.3%) worked at the institution for 9 to 11 years while 57 (17.4%) worked for 12 years and above at the institution.

Descriptive Statistics

The results from the quantitative data showed that majority of the participants took a neutral stance on the state of green management practice which was measured with three main constructs; environmental orientation, environment strategy and environment development as indicated by the descriptive statistics in Table 1.

Table 1. Descriptive Statistics

Constructs	**Mean**	**Mode**	**Standard deviation**	**Interpretation of results**
Environmental orientation (EO)				
EO1: our institution has a clear policy statement urging environmental awareness in every area	2.95	2	1.30	Neutral
EO2: Environmental preservation is a high priority in our institution	2.96	2	1.31	Neutral
EO3*:* Preserving the environment is a central corporate value in our institution	2.96	2	1.32	Neutral
EO4*:* Environmental preservation is vital to our institution's survival	3.11	2	1.36	Neutral
EO5*:* A concerted effort is made to let every employee understand the importance of environmental preservation	2.92	2	1.26	Neutral
Environmental strategy (ES)				
Our institution has integrated environmental issues into our strategic	2.82	2	1.24	Neutral
ES2: In our institution, 'quality' includes reducing our environmental impact	2.78	2	1.21	Neutral
ES3: Our institution links environmental objectives with other corporate goals	2.92	2	1.27	Neutral
ES4: Environmental issues are always considered when we make operational decisions	2.94	2	1.27	Neutral
ES5: We emphasize the environmental aspect of our services in creating publicity	2.86	2	1.27	Neutral
Environmental development (ED)				
ED1: Our institution reduces energy consumption	3.03	4	1.22	Neutral
ED2: Our institution reduces the impact on animals' species and natural habitats	2.91	2	1.17	Neutral
ED3: Our institution reduces purchases of non-renewable materials and chemicals	2.94	2	1.14	Neutral
ED4: Our institution reduces the use of traditional fuels by substituting less polluting energy sources	2.93	2	1.23	Neutral
ED5: Our institution undertakes voluntary actions for environmental restoration	2.88	2	1.25	Neutral
ED6**:** Our institution undertakes actions for environmental audits and training employees on environmental practices	2.80	2	1.20	Neutral
1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree				

Qualitative Results

State of Green Management Practices

Three themes that emerged after analysis of the qualitative data were description of green management practices, forms of green management practices and measurement of green management practices.

Description of Green Management Practices

In order to obtain participants' understanding of green management practices, the study asked them to describe it in their own words. While some participants described green management practices as adoption of work activities that serve the interest of the environment others understood it as a way of ensuring that the environment is safe.

G3: *"I will say that green management practices are concerned with how we carry out activities that protect the environment and ensure that we the workers are saf".*

G5: *"…if I really understand you, I will describe green management practices as the adoption of non-chemical products or a way of life that promotes the use of things that are of the best interest of the environment. You know that these days, climate change has become a major concern of the world and due to that we are encouraged to protect the environment at all cost. Those things that we need to do to protect the environment as an institution can be described as the green management practice".*

G11*: "Green management practices can be described as ways and means to work without causing harm to the environment by utilizing resources and methods that support the effective functioning of the environment".*

Forms of Green Management Practices

Participants in the study were asked to identify various green management practices that have been adopted and implemented in their institutions of work. Efficient energy practices, waste management and sustainable procurement practices were some of the green management practices indicated by participants. The forms of green management practices were expressed in some of their statements quoted below.

G6: *"In this institution, we don't buy used electrical appliances but only new ones that are energy efficient. Our bulbs are all energy bulbs, and we purchase fridges that are labelled by the Ghana Energy Commission with at least three stars which is believed to consume less energy. In fact, it is our policy to stick to the purchase of more efficient electrical gadgets. That is not all, we discourage the use of plastics and that is why we used water dispenser in the office. In this case, we are able to control the disposable cups compare to a situation where customers and staff come in with sachets and bottles of water which we cannot control how they dispose them".*

G10*: "I am very sure that environmental sustainability is very key in our institution. We actually try our best to purchase products that are eco-friendly so that they will not be harmful to the environment. Again, we are mindful of conserving water at all times. Our maintenance practices include prompt rectification of water leaks. We also comply with the Energy Commission requirements for use of efficient electrical apparatus. For example, this institution does not purchase old fridges; we procure new ones which are certified by the Energy Commission".*

G14: *"One thing I know is that as for this institution, we make sure a product is quality before we buy it for use. When I say quality, I mean it can help both the human being and the environment. We have a practice where we don't allow the use of weedicide on our environment. We have constantly engaged our laborers to avoid the use of any chemical on the environment. We are also strictly using energy bulbs and new fridges in our offices as required by the Energy Commission of Ghana".*

Measurement of Green Management Practices

When participants were asked how they measure the effectiveness and impact of green management practices in their institutions, it was found that they had no standard criteria for assessing the impact of the practice, but they believed green management practices have positive impact on their operations.

G1: "*In fact, we don't really have any laid down formula or standard for measuring the impact of our green practices but we believe that it is a good thing and have several positive impacts. For instance, the use of energy bulbs is contributing to reduce the amount of electricity bills our institution pay. But the truth is that we have not done any research to assess its impact*".

G10: "*I will say that is something we have to think about because as we speak now, there is no method to measure or assess the impact of these green practices on our activities. We only know that if you purchase like new fridge with Energy Commission's label it will consume less energy and consequently our electricity bills will come down. I think going forward, we will have look at how we will scientifically assess the impact of these practices"*.

G14: "*.to the best of my knowledge, I am not aware of how we are really assessing the impact of green practices in this institution. Nonetheless, we know that it has positive benefits on our activities so far as it is the best practice around the world*".

Discussion

The main purpose of the study was to assess the state of green management practice in public sector institutions in the Bono region. The quantitative data was collected using a 5-point Likert scale where the state of green management practice was examined with three main constructs: environmental orientation, environmental strategy and environmental development. The finding of the quantitative data showed that there was not significant state of green management practice in the public sector institutions in the region. The finding was inconsistent with the results of Mensah and Blankson (2014) which found significant commitment to green management practice among hotels in Accra. However, the qualitative data of the study showed that majority of the institutions had efficient energy practices, waste management and green procurement practices. Unlike the finding of Asante, Yanful and Yaokumah (2014) where healthcare facilities were not implementing waste management policies which resulted in poor state of sustainability practices, public sector institutions in the Bono region were found to restrict plastic waste on their environment. In all, the finding of the study implies that there is lack of clear guidelines and awareness on green management practice among public sector institutions. This resulted in the difference between the results of the quantitative and qualitative data. The result is therefore significant as it has brought to light the need to create awareness for public sector institutions to develop clear policy documents on environmental sustainability practices to guide the adoption and implementation of green management practices.

The study also found that public sector institutions did not have criteria for monitoring and evaluating the impact of green management practices. This finding is an indication that there is lack of understanding of the importance of the practice among the institutions. As a result, they don't see green management practice as part of management function that should be measured for improvement. This revelation is a call on management of public sector institution to consider green management as a sustainability practice that should be prioritized with a strategic objective. This result of the study can be described as novel as no study has considered how institution measure the impact of their green management practices. In view of this, further investigation on the best way to measure the impact of green

management practices in organizations would contribute to provide a standard metric for evaluation.

Equations

Sample size estimation using the Yamane formula given by

Sample size (n) $\frac{N}{[1+N(e)\hat{}2}$ (1)

Where, N = Population, e = margin of error at 95% confidence level.

Substituting N = 2147 and e = 5% = 0.05 into equation (1), it implies.

Sample size (n) = $\frac{2147}{[1+2147(0.05)\hat{}2}$ (2)

Sample size = 337

Conclusion

In conclusion, results of the study imply low level of awareness on green management practices among public sector institutions in the Bono region. As a result, the study has contributed to lay the foundation for creating awareness for the adoption and implementation of green management practice in public sector institutions in the region.

Acknowledgement

I would like to sincerely thank all heads of public sector institutions and all respondents who contributed to make this research successful.

Conflict of Interest

There is no conflict of interest as far as the conduct of the study is concerned.

References

[1]. K. Rezaei-Moghaddam, "Green Management of Human Resources in Organizations: An Approach to the Sustainable Environmental Management." *Journal of Agricultural Technology*, 12(3), 509-522, 2016.

[2]. M. A. Id, M. I. Id, M. A. Dalaba, E. Y. Anumu, A. Ofosu, and M. Gyapong, "The Socio-Economic and Health Effects of COVID-19 Among Rural and Urban-Slum Dwellers in Ghana : A Mixed Methods Approach," pp. 1–26, 2022, Doi: 10.1371/journal.pone.0271551.

[3]. T. Bennett, N. J., & Satterfield, "Environmental Governance: A Practical Framework to Guide Design, Evaluation, and Analysis. *Conservation Letters*, 11(6), e12600," 2018.

[4]. J. Fuseini, I., & Kemp, "A Review of Spatial Planning in Ghana's Socio-Economic Development Trajectory: A Sustainable Development Perspective. Land Use Policy, 47, 309-320," 2015.

[5]. R. S. Ahator, "Assessing Public Sector's Implementation of Sustainable Procurement in Ghana (Doctoral Dissertation)," 2021.

[6]. D. Ampratwum, G. Agyekum, K. Adinyira, E. & Duah, "A Framework for the Implementation of Green Certification of Buildings In Ghana." *International Journal of Construction Management*, 21(12), 1263-1277, 2021.

[7]. X. Li, G. Koomson, D. A. Huang, J. Amponsah, E. I. Darkwah, W. K., Miwornunyuie, N. & Dong, "A Review From Environmental Management To Environmental Governance: Paradigm Shift for Sustainable Mining Practice in Ghana. Environment," *Development and Sustainability*, 23, 9710-9724, 2021.

[8]. E. J. Mensah, I., & Blankson, "Commitment to Environmental Management in Hotels in Accra. *International Journal of Hospitality & Tourism Administration*, 15(2), 150-171," 2014.

[9]. B. Asante, B., Yanful, E., & Yaokumah, "Healthcare Waste Management; its Impact: A Case Study of the Greater Accra Region, Ghana." *International Journal of Scientific & Technology Research*, 3(3), 2014.

[10]. GSS, "PHC General Report Volume 3A_Population of Regions And Districts," 2021.

[11]. Wikipedia, "Bono Region," 2023. https://en.wikipedia.org/wiki/Bono_Region (Accessed Oct. 10, 2023).