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Research Article

Green Accounting Practices in Philippine Higher Education: A Mixed-Method Case Study of Institutional Readiness at a Local Government College

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ABSTRACT

Green Accounting promotes environmental accountability; however, there is a lack of empirical evidence on the application of Green Accounting in higher education institutions in developing economies, particularly in the Philippines. This study aimed to find out the level of preparedness of the institution for Green Accounting by examining their operational practices, stakeholder awareness, and the factors that affect the institution. The researchers used a convergent mixed-method for this study that combined quantitative and qualitative data. A checklist was distributed and answered by 102 respondents to gather quantitative data and 55 students and staff were interviewed to gather qualitative data using purposive sampling to have a diverse group of respondents to collect their perspectives on sustainability regarding their own awareness, perceptions, and experiences. The results show that Green Accounting implementation is still in its early stage or just getting started on its implementation. Numerous environmental practices remain in the "In-Progress" category. Waste reduction and management rank highest, followed by energy efficiency and water conservation. The implementation results range from 2.12 and 2.14. Most of the actions do not require large funding and depend on people's behavior. However, activities that require significant financial investment, such as renewable energy, are still in the "Not Yet Started" stage due to financial and facility constraints. Despite positive developments like low or no-cost sustainability practices, the institution lacks data tracking and does not have the procedures needed for effective Green Accounting. Interviews indicate that the perceived technical difficulty of formal Green Accounting discourages its implementation. This perception leads to adoption deficiencies and a lack of perceived significance, which impacts the overall sustainability efforts.

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Introduction

Currently, environmental problems like degradation, climate change, and resource depletion are compelling institutions worldwide to take responsibility and pursue sustainability. The United Nations Sustainable Development Goals (SDGs) highlight that organizations and institutions significantly influence sustainable development. SDG 12 emphasizes the need for efficient resource use and monitoring their impact, while SDG 13 stresses the importance of systematic measures to reduce climate change risks. Higher education institutions (HEIs) have an important role in these efforts (United Nations Environment Programme [UNEP], 2015). They use a large amount of resources and serve more than just a learning center for students, as their daily activities have huge impacts on energy use, water consumption, and waste generation.

In the Philippines, the responsibility of HEIs to contribute to sustainable development is mandated by national policy frameworks, specifically the Republic Act No. 9512, also known as the Environmental Awareness and Education Act of 2008, according to section 3 of the Republic Act No. 9512 which defines the scope of environmental education, it mandates the integration of environmental education in the curricula at all levels, whether public or private institutions. The provision defines the environmental education to be integrated to encompass environmental concepts and principles, and practices that contribute to the conservation, protection and rehabilitation of natural resources in the context of sustainable development. While this law emphasizes environmental education, Sections 6 and 7 of the Republic Act No. 9512 mandates that HEIs seek consultation and coordinate with experts in the implementation and development of sustainable practices as a multi-sectoral effort together with other government agencies. Despite existing policies and alignment of global sustainability goals and initiatives, many colleges and universities in the Philippines continue to operate

without a systematic approach to measure, monitor and report their environmental resource use and operational costs.

While 'Green Accounting' and 'Environmental Accounting' are used interchangeably (Lestari et al., 2023), this study defines Green Accounting as a systematic approach that integrates environmental costs into institutional operations and global development goals. This framework entails identifying environmental costs, tracking resource flows like energy and waste, and working those insights directly into accounting and management decisions. (International Federation of Accountants [IFAC], 2005; Schaltegger & Burritt, 2017). Green Accounting differs from traditional environmental management approaches because it emphasizes systematic measurement and accountability rather than just behavioral or operational improvements. As a result, it allows an institution to evaluate operating costs and environmental impacts.

Previous studies argue that green accounting improves resource use, reduces costs, and increases transparency. Publicly funded institutions, due to their limited resources, must effectively manage and allocate funds, which is crucial for their ongoing operations. This lack of adoption among higher education institutions makes green accounting especially beneficial. According to Ceulemans and Lozano (2014) and Kurniawan (2020), common challenges include low administrative staffing, inadequate technical knowledge, lack of awareness, and budget constraints. Developing countries often face more significant problems since sustainability initiatives are not integrated into their accounting practices, even though they have been recognized and formalized.

Thus, both institutional theory and diffusion of innovation theory can explain the substantial gap between sustainability activities and formal green accounting regulations in higher education institutions.

Institutional theory states that organizations would rather focus on reacting to outside

forces, such as coercive, normative, and mimetic ones, than genuinely efficient factors (DiMaggio and Powell, 1983). In the Philippine higher education sector, institutions are expected to comply with policy-related requirements, including Republic Act No. 9512; the international long-term prospects of sustainability; however, institutional responses are mainly oriented towards the promotion programs, instead of accountability systems that thoroughly concentrate on the environmental accounting. Green accounting within public HEIs has been subjected to weak procedural pressure by the accounting profession and the fact is that mimetic pressure is limited by the lack of local similar organizations that have successfully institutionalized sustainability accounting practices. Sustainability efforts are therefore often initiated informally and in a non-systematic and disjointed manner thus leading to unfinished and haphazard implementation.

The Diffusion of Innovation Theory further explains the process of the adoption of Green Accounting as an innovation under which organizations evaluate the variables which include the complexity, compatibility and observability (Rogers, 2003). The study highlights the barriers in promoting sustainability development using creative methods and that a specific sector may find success in the implementation of sustainable practices but in relation to their study, an application of such practices in a multi-sector level poses risks and impractical implementation since it involves higher costs, decrease in efficiency and lack of availability in the decision-making process of various sectors, the same applies to HEIs that are limited in funding and are primarily funded through public funding, government aid, and lack of resources to thoroughly implement practices that promote sustainability. As such Green Accounting is often viewed in the local government college sector as an expensive and complicated program compared to cheaper, behavioral, programs like energy conservation programs or garbage separation programs. Limiting financial resources, technical expertise are limited, and skepticism over the proven return value of advanced sustainability technologies, all hinder the rate of adoption. As a

result, institutions will resort to easily quantifiable sustainability actions, and delay the adoption of the accounting, monitoring and reporting systems.

Green Accounting and Environmental Accounting are common studies, yet the studies have mostly focused on large commercial bodies, manufacturing companies, private universities, and well-off institutions in developed economies (Burritt et al. 2002; Schaltegger and Burritt, 2017; Kurniawan, 2020). These organizations have the capability to apply environmental accounting frameworks via sustainability units, highly developed systems, and budget allocations. In contrast, Philippine local government colleges operate under substantially different conditions. They rely heavily on government subsidies, heavily constrained in their budget and procurement rules and regulations and emphasize practicality and by using cost-cutting methods in teaching and business more than costly green projects. Unlike large institutions and universities operated privately, local government colleges rarely have dedicated personnel or formally established systems for sustainability management and environmental accounting.

The current research data on higher education in the Philippines is limited only to the applications of Green Accounting in other countries, and we have yet to formalize Green Accounting, particularly in connection on the adoption of sustainability practices, the concern for stakeholder awareness, and the institutional enablers to monitor and record environmental costs in the Philippines. The general environmental approaches are only concerned with the prevailing existing literature, thereby ignoring the willingness to adopt Green Accounting in HEIs due to limited financial capacities. Currently there is lack of importance for understanding the underlying issue of how sustainability practices are embraced, the difficulties encountered, and how the sustainability practices can become the standard practice in local government colleges.

In response to these gaps, this study examines institutional readiness for Green Accounting implementation in a Philippine local government college by assessing sustainability practices, staff and student awareness and

institutional mechanisms related to energy efficiency, water conservation, and waste reduction and management. This study combines theory and evidence from higher education to show how isolated sustainability is changing into organized Green Accounting systems that comply with national law and international standards.

Purpose of the Study

To address this matter, the researchers looked into the preparedness of the institution for Green Accounting implementation in a local government college in the Philippines. It looks into staff and students' understanding, existing sustainability practices, and how the college manages energy consumption, water conservation, and waste. By focusing on a public higher education institution, this study provides empirical evidence for resource constrained educational settings, as well as practical insights for administrators and policymakers looking to align institutional operations with national sustainability mandates and global development goals

Methods

Research Design and Respondents

This study used a convergent mixed method for the data collection, wherein both quantitative and qualitative data were collected simultaneously, focusing on the implementation of Green Accounting practices at Gordon College. The combination of the details emerged while interpreting the data, where quantitative checklist results (Energy Efficiency, Waste Management, Water Conservation) were compared and linked with qualitative interview themes (awareness, practices, challenges, benefits) to identify convergent, divergent, and complementary aspects. The convergent mixed design enables researchers to evaluate institutional practices comprehensively, resulting in stronger research findings. The institution was chosen for its medium size, active environmental programs, and location in a region demonstrating increased sustainability efforts (Creswell, 2014).

Purposive sampling was used to select respondents from Gordon College based on their active involvement in sustainability initiatives

and operations. The study required active participation in the institution's administrative or facilities management work regarding resource use, waste management, and environmental management. The quantitative phase included 102 respondents, composed of faculty, administrative personnel, and students, all familiar with school operations and facilities, which was sufficient for descriptive analysis.

In the qualitative phase, 55 individuals participated in semi-structured interviews. All study participants provided informed consent, including students, maintenance staff, faculty, and administrative staff involved in operations who met the requirements for sustainability practices. Researchers gathered qualitative data through in-person interviews, allowing them to ask additional questions during the process. Since responses were consistent and coherent until saturation was reached, the sample size proved adequate for collecting qualitative data.

Research Instruments

1. Quantitative Instrument (Checklist)

The researchers distributed an observation checklist to gather numerical information about Green Accounting practices. This measured how resources were used for energy, water, and waste management activities. The checklist criteria were based on established and existing sustainability standards and environmental management frameworks, including indicators discussed by Alshuwaikhat and Abubakar 2008 and Lozano et al. 2015 and the UNEP Environmental Management Accounting recommendations. The adaptation process for each item needed the researchers to change both the use of words and measurement tools that will match the operational activities, administrative system and resource management practices of Philippine public higher education institutions. The checklist serves as a diagnostic tool that helps institutions evaluate their current stage of Green Accounting implementation.

The researchers calculated Cronbach's alpha coefficients to assess the reliability of the instrument across three areas: Energy Efficiency and Conservation, Waste Reduction and

Management, and Water Conservation. The results were $\alpha = 0.73$, $\alpha = 0.70$, and $\alpha = 0.78$, indicating acceptable internal consistency according to Nunnally (1994). Experts evaluated the content for validity based on their knowledge in accounting and sustainability, while researchers made minor adjustments for clarity, relevance, and alignment with local practices. The study showed their progress through three distinct stages which included Not Yet Started, In-Progress, and Implementing as their three-point scale (1–3) response options.

2. Qualitative Instrument (Interview Guide)

Semi-structured interviews explored participants' awareness, understanding, experiences, and perceptions of Green Accounting. The interview guide helped researchers examine study backgrounds and operational methods, leading to qualitative findings that enriched the understanding and supported the quantitative checklist results.

Data Collection Procedure

The researchers collected quantitative measurements through Google Forms checklists after obtaining set electronic informed consent. Researchers conducted in-person interviews over a period of one to two months to collect qualitative data, which enabled them to conduct follow-up questions while obtaining enough data from both quantitative and qualitative research methods.

Data Analysis Procedure

The researchers applied descriptive statistics in analyzing the quantitative data obtained from the checklists using mean scores and composite means in order to know how extensively Green Accounting had been implemented in

connection to three different environmental domains. Braun and Clarke applied a six-stage thematic analysis in analyzing the qualitative data obtained from the interviews. The stages included initial assessment, development of codes, creation of themes, evaluation of themes, explanation of themes, and documentation. Researchers applied a comparison of themes in analyzing their data in relation to the quantitative data in order to validate their methodological approach through triangulation.

Ethical Considerations

The ethical principles were adhered to in the conduct of the research to protect the participants. The participants of the study were made known of the purpose of the research, and consent was sought from the participants to research them. The participants were also assured of the voluntary nature of the research, confidentiality, and the option to withdraw from the research at any stage. The researchers used data minimization techniques to obtain information that supported their research goals. The study maintained autonomous procedures while researchers showed respect for all participants, particularly those who faced special challenges during the research.

Results and Discussion

Results

This section presents the empirical findings of the study derived from both quantitative and qualitative data. The results are organized according to the three environmental domains assessed, energy efficiency and conservation, water conservation, and waste reduction and management, followed by qualitative themes that emerged from the interviews.

1. Quantitative Results

1.1 Energy Efficiency and Conservation

Table 1. Mean and Descriptive Interpretation of Green Accounting Implementation in terms of Energy Efficiency and Conservation

A. Energy Efficiency and Conservation	Mean	Standard Deviation	Descriptive Interpretation
1. Conduct regular energy audits for all campus facilities.	2.17	0.66	In-Progress
2. Replace incandescent and fluorescent bulbs with LED lighting and maximize the use of natural lighting to reduce cost of energy consumption.	2.02	0.73	In-Progress

A. Energy Efficiency and Conservation	Mean	Standard Deviation	Descriptive Interpretation
3. Use occupancy sensors to automatically control lighting and HVAC (Heating, Ventilation, and Air Conditioning) systems.	1.57	0.70	Not Yet Started
4. Implement protocols for turning off computers and monitors when not in use.	2.60	0.65	Implemented
5. Establish and implement formal policies for reducing electricity consumption.	2.47	0.59	Implemented
6. Promote energy conservation campaigns (e.g., 'Turn it Off' initiatives).	2.57	0.67	Implemented
7. Celebrate sustainability events (e.g., Earth Day, Zero Waste Week).	2.13	0.77	In-Progress
8. Invest in renewable energy sources (e.g., solar panels, geothermal, wind).	1.66	0.80	Not Yet Started
9. Purchase Energy Star-rated equipment and appliances.	1.90	0.78	In-Progress
Composite Mean	2.12	0.70	In-Progress

The combined score for energy efficiency and conservation was 2.12, which is "In-Progress". High values were noticed for practices based only on people's behavior like turning off unused equipment (M = 2.60) and energy conservation campaigns (M = 2.57). On the other hand, practices that needed funds,

technology and facilities, like the use of occupancy sensors (M = 1.57) and investments in renewable energy sources (M = 1.66), recorded the lowest scores. Standard deviations are in between 0.59 to 0.80, showing a moderate level of consistency in respondent perceptions across campus units.

1.2 Water Conservation

Table 2. Mean and Descriptive Interpretation of Green Accounting Implementation in terms of Water Conservation

B. Water Conservation	Mean	Standard Deviation	Descriptive Interpretation
1. Install low-flow faucets and toilets in campus buildings.	2.06	0.76	In-Progress
2. Use drought-tolerant native plants in landscaping.	1.74	0.77	In-Progress
3. Implement rainwater harvesting systems and greywater reuse.	1.53	0.69	Not Yet Started
4. Educate students/staff on water conservation practices.	2.25	0.75	In-Progress
5. Conduct regular maintenance to detect and fix leaks.	2.50	0.56	Implemented
Composite Mean	2.02	0.70	In-Progress

Water conservation practices have a combined score of 2.02 which is "In-Progress". The highest level of implementation is regular maintenance for leak detection and repair (M = 2.50), showing this as daily operational practices. On the other hand rainwater harvesting

and greywater reuse systems have the lowest score (M = 1.53), showing that it is not yet implemented. The standard deviation scores ranging from 0.56–0.77 show that the responses of the participants are quite consistent.

1.3 Waste Reduction and Management

Table 3. Mean and Descriptive Interpretation of Green Accounting Implementation in terms of Waste Reduction and Management

C. Waste Reduction and Management	Mean	Standard Deviation	Descriptive Interpretation
1. Implement comprehensive recycling programs (paper, plastic, metal, e-waste).	2.48	0.63	Implemented
2. Provide labeled and strategically placed waste sorting bins.	2.40	0.73	Implemented
3. Use compostable food packaging in campus dining facilities	2.21	0.80	In-Progress
4. Launch composting initiatives for food and organic waste.	1.92	0.74	In-Progress
5. Conduct waste audits to monitor and reduce overall waste generation.	1.94	0.78	In-Progress
6. Encourage paperless processes (e.g., digital assignments, online forms).	2.18	0.74	In-Progress
7. Encourage and facilitate double-sided printing and copying.	2.11	0.74	In-Progress
8. Reduce use of single-use plastics campus-wide.	2.13	0.80	In-Progress
9. Sharps are immediately disposed of in designated, puncture-proof containers, filled only to $\frac{3}{4}$ capacity.	1.95	0.75	In-Progress
10. Use recyclable or sustainably sourced plastic chairs in classrooms	2.08	0.84	In-Progress
Composite Mean	2.14	0.76	In-Progress

Waste reduction and management recorded the highest score among the three domains ($M = 2.14$), although it is still in the “*In-Progress*” category. Recycling programs ($M = 2.48$) and the provision of labeled waste segregation bins ($M = 2.40$) were the practices that are implemented the most. Low scores were noticed for waste audits ($M = 1.94$) and composting initiatives ($M = 1.92$), showing limited organized monitoring of waste flows. Standard deviations are in between 0.63 to 0.84, showing moderate differences in understanding in this aspect.

The quantitative results specify that practices related to green accounting are partially implemented, giving more importance on visible, low-cost, and behavior-driven practices than on practices that have intensive need on measurement and technology (Lozano et al., 2015; Ceulemans & Lozano, 2014).

2. Qualitative Results

The qualitative data collected from the interviews were examined using thematic analysis following Braun and Clarke (2006). Actual responses were kept to maintain meanings of the participants and enhance credibility and confirmability. This is consistent with

qualitative reporting standards in mixed-method research (Creswell, 2014; Miles et al., 2014). Five major themes come out showing awareness, practices, monitoring, constraints, and institutional readiness for Green Accounting.

2.1 Limited Awareness and Conceptual Understanding of Green Accounting

It showed that the participants have limited awareness of Green Accounting as an official accounting system. Many of them clearly stated that they are unfamiliar with the concept, while others associated the term only with general environmental concern. The usual responses are: “*No but I think it is about including environmental concerns in accounting, like tracking costs or savings from eco-friendly practices,*” and “*Not really, but I assume it deals with including environmental costs in accounting decisions.*” Other participants say that they are only slightly familiar with it, stating, “*I have heard of it, but I do not know much, maybe it is about eco-conscious financial planning.*” These responses show that Green Accounting is usually known only as environmental care and not as a structured accounting and reporting framework. Many other misconceptions have

been reported in other studies, wherein environmental accounting is often combined with general sustainability practices (Schaltegger & Burritt, 2010; Bebbington et al., 2014).

2.2 Presence of Informal Sustainability Practices

Although participants have limited conceptual understanding, they can identify sustainability practices existing within the college. These practices were not formal and more likely due to individuals' behavior. Respondents mentioned waste segregation, CLAYGO policies, and energy-saving reminders, like "Every room has trash bins and reminders to turn off unused lights or appliances," and "We practice CLAYGO and proper waste segregation here at Gordon College." Others mentioned some environmental activities, stating, "Students and faculty are participating in coastal clean-up drives and tree planting activities." Regardless of this, participants still mentioned that these practices were not part of the system. This finding supports earlier research showing that higher education institutions implemented sustainability practices but did not make it as a part of formal accounting or performance measurement frameworks (Gray, 2006; Burritt et al., 2011).

2.3 Limited Monitoring and Transparency of Resource Use

Participants were uncertain about how environmental data were monitored and utilized. The use of utility data goes beyond billing. However, transparency and application for sustainability remain limited. One respondent said, "Yes, monthly bills are recorded by the administration, but I do not know how the data are used." Another said, "Participants indicated they track it, but the data is not shared with students." Essentially, data were collected, but there's no systematic analysis and reporting for decision-making. The environmental management accounting literature argues that collecting data alone is not enough without analysis, reporting, and feedback loops (Jasch, 2003; Schaltegger et al., 2013).

2.4 Financial and Infrastructural Constraints

Participants identified financial and infrastructure issues as barriers to implementing

green accounting. Many noted that they had limited budgets and lacked adequate resources to introduce new sustainable practices. Common statements included "The main factor is probably the limited budget," and "Installing solar panels would really help, but participants indicated the college does not have enough funds yet". Others pointed to procurement and infrastructure issues, stating that "green accounting needs systems and equipment that require investment." This study aligns with others that have highlighted how financial and structural issues continue to limit the growth and adoption of environmental accounting within both public and educational sectors (Burritt & Schaltegger, 2010; Ferreira et al., 2010).

2.5 Need for Institutional Support and Capacity Building

Participants indicated that strong institutional commitment is essential for improving green accounting. This support could come through education, seminars, or developing new policies. One respondent stated, "Maybe more seminars or information drives could help increase awareness," while another suggested, "Introducing green accounting through workshops and official policies would help faculty and staff understand it better." Several respondents also noted that an institutional commitment from leadership was required in order to formalize, and to include, sustainable activities within an institution's planning processes. This further emphasizes previous research that has found that the commitment of leadership, and building institutional capacity are two of the most important enablers for successful green accounting implementations (Adams, 2002; Bebbington & Larrinaga, 2014).

Discussion

The integration of quantitative and qualitative data reveals that while the college has developed a foundation of behavioral sustainability, the college lacks the formal Environmental Management Accounting (EMA) structures necessary to achieve true institutional readiness. The triangulation of data indicates that there is a strong degree of agreement in the level of implementation of practices based on participant's perception of the level of

implementation as well as their perceived barriers and facilitators to implementation as defined by Creswell (2014). The integrated interpretation of quantitative and qualitative data allows researchers to examine how sustainability practices implemented by the college in the domains of Energy, Water, and Waste, may be impacted by both the college's institutional readiness to implement these practices, as well as potential implementation constraints.

To better understand the significance of the current findings, the outcomes of this study

were analyzed in conjunction with previous studies on sustainability practices and environmental accounting within Higher Education Institutions. By comparing these studies together, we may have a greater understanding of how the current study relates to other sustainability frameworks. The data found in Table 4 provide a comparison of this study's main findings as they relate to those studies conducted by Lozano et al. (2015), and Schaltegger & Burritt (2017).

Table 4. Comparison of Present Study Findings with Selected Sustainability Literature

Dimension	Present Study Findings	Lozano et al. (2015)	Schaltegger & Burritt (2017)
Energy efficiency	Behavior-based and low-cost practices show higher implementation; advanced technologies remain limited	Sustainability adoption in higher education is largely incremental	Energy efficiency is often adopted due to cost-saving potential
Water conservation	Rainwater harvesting shows limited implementation because of financial constraints	Infrastructure limitations limits the adoption in developing plan	Water-related sustainability measures need large capital as investment
Monitoring technologies	Occupancy sensors and automated systems are not yet implemented	Smart sustainability technologies spread slowly	Environmental accounting tools need technical capacity and institutional support
Strategic orientation	Sustainability practices remain informal and weakly combined into accounting systems	Advocates integrated sustainability frameworks	Give importance to governance and accounting integration

The comparison indicates that the sustainability practices observed in this study are consistent with patterns reported in earlier research, where institutions demonstrate operational environmental actions but lack formal integration into accounting and governance systems.

Quantitative results for the three environmental domains of energy efficiency, water conservation, and waste reduction and management across all three environmental domains show that Green Accounting practices have reached an In-Progress stage. The qualitative evidence also supports this finding in that while there are many sustainability initiatives underway, they are predominantly behaviorally driven and operational, with few formalized through structured sustainability

reporting or performance measurement mechanisms. Many organizations provide support to their employees with respect to practices such as waste segregation, CLAYGO policies, energy-saving reminders, and routine maintenance; however, these practices are not formally documented through accounting records or monitored by formal measurement systems, which are critical requirements for formal Environmental Management Accounting (EMA) systems as defined by Schaltegger and Burritt (2017) and the International Federation of Accountants (2005). Schaltegger and Burritt's (2017) alignment confirms that while cost-saving creates the initial drive for interest, the technical capacity for full Green Accounting is a major barrier in resource-constrained settings.

Such pre-eminence of the implementations as In-Progress can be attributed to the Institutional Theory and three types of institutional pressure: coercive, normative and mimetic which generate organizational behaviour (DiMaggio and Powell, 1983). The reaction of the institution towards the national sustainability law, Republic Act No. 9512 provides indications of coercive pressure because the law focused more on environmental awareness and environmental education without stipulating a formal environmental accounting system or sustainability reporting mechanism (Republic of the Philippines, 2008). Consequently, the organization has implemented visible, behavior-focused sustainability initiatives like waste separation, eco-friendly projects, and routine maintenance, even as the necessary accounting systems for monitoring and reporting environmental costs are still being developed.

The local government college seems to experience little normative constraint. Based on the interviews and observations, green accounting is perceived more as a broad environmental issue rather than a structured accounting procedure. In contrast to being a systematic method of monitoring environmental costs, sustainability is seen as an issue of environmental responsibility. As a result, the institution applies only a portion of the established rules and professional practices for environmental accounting. Although some sustainable methods exist, financial systems have not yet fully integrated them.

Furthermore, financial and technological constraints limit the influence of mimetic forces on adopting such methods. Techniques like using sensors or rainwater collection, installing renewable energy sources, and conducting energy audits are not common due to high costs. There is also no comparable college where municipalities can learn about green accounting. In this regard, the college is operating partially ready, using the lowest-cost-known sustainability practices and avoiding the more expensive accounting and monitoring practices that would put them in line with the green accounting principles (DiMaggio and Powell, 1983).

Quantitative analysis helps explain the difference between operations and sustainability

projects that focus on economic and behavioral aspects. It also shows which projects require physical or technological infrastructure and investment. Energy-saving initiatives, conservation campaigns, and solid waste separation scored well. In contrast, projects that need significant funding, like renewable energy development, rainwater harvesting, occupancy-sensing technology, and environmental audits scored lower. These results match qualitative research, which shows that institutions tend to rely on simple, low-cost sustainability measures.

Green accounting is not just a tool for public institutions to support sustainable development. It is a complex system that will require substantial time, money, and expertise to fully build. Several factors will influence whether this kind of green accounting is adopted, including complexity, compatibility, and observability (Rogers, 2003). Complexity arises from the requirement for new technology, processes, and skilled workers who can monitor environmental costs beyond standard usage. As already shown by prior studies, public universities are not equipped financially or technologically to implement and support the development of such systems (Schaltegger et al., 2013), and even the nature of such systems is potentially a deterrent to their implementation in poorer public universities (Ferreira et al., 2010).

The concept of compatibility also has a significant impact on the results of the adoption processes. Despite the harmonious relationship between the environmental values with the institutional cultural set up, reflected in the positive attitudes and actions towards sustainability endeavors, the financial set ups necessary to implement the Green Accounting still do not fit in with the existing budget processing options, resources, and procurement processes of the Local Government Units. As a result of this, sustainability initiatives secured in line with the current operational practices are implemented, but innovations concerning accounting practices are postponed (Burritt, 2010, 2020; Kurniawan, 2020).

Observability explains how the use of low-cost initiatives became very common. Energy saving campaigns and special waste disposal

containers are strategies that can produce felt and immediate benefits therefore making the implementation and continued usage of these strategies easy. On the other hand, activities like rainwater harvesting systems, occupancy detectors, purchases of renewable energy can be considered as relatively less visible benefits are manifested in the short term, and they require increased spending, which is why it is classified as "Not Yet Started" even though it has the potential to be long-lasting (Rogers, 2003; Lozano et al., 2015).

Interview data provided further insight into these limitations. Several participants mentioned financial constraints, indicating that "the main factor is probably the limited budget," while others pointed out that "green accounting needs systems and equipment that require investment." Challenges related to infrastructure were also emphasized, particularly concerning advanced technologies, with one participant stating that "installing systems like solar panels or sensors would really help, but the college does not have enough funds yet." These responses illustrate that the barriers to implementation are predominantly structural rather than attitudinal.

The understanding and awareness of the respondents on Green Accounting is shown to be limited in both datasets. Respondents stated concern about the environment but sustainability was not considered something that should be specifically recognized in accounting. Green accounting was frequently interchanged with other corporate environmental activities instead of being used as a strategic tool to manage sustainability costs and resources. This lack of alignment explains why many sustainability activities are put into action but not effectively monitored or reported in accounting. Similar results in previous research suggest that knowing sustainability concerns does not necessarily mean following environmental accounting norms (Bebbington et al., 2014; Kurniawan, 2020).

There is also a lack of transparency and monitoring. Environmental audits and waste and energy tracking have low scores since they were mostly only conducted for billing purposes. The information was rarely given importance and connected with planning and

decision-making units. According to Jasch (2003) and Schaltegger et al. (2013), the sustainability performance of institutions is difficult to measure and report. This is a usual problem in environmental management accounting.

To know why implementation success has been limited, the study examined sustainable measures that have not yet been put into action. The practices are classified as "Not Yet Started." These methods included collecting rainwater to lower water use, switching to alternative energy sources with solar panels, and using sensors to monitor energy. The answers provided during the extensive interviews supported the trends found in the questionnaire data. The respondents highlighted the issues that come with carrying out tasks associated with sustainable practices. Financial constraints continue to be the main problem to sustainable solutions like solar power generation and rainwater collection. All responses pointed out the importance of learning the infeasibility of the practice because it requires a huge initial commitment. Given that this industry represents the highest level of environmental conservation, the respondents' evaluation was true. The respondents seemed to be far more doubtful about occupancy sensors. This is proven by the answers they provided on the operation and the energy-saving savings they want to achieve in order to pay for the startup expenses for the sensor installation.

"Not Yet Started" has shown that financial and technical challenges are the most important reasons for not having started, not only because of a lack of support for sustainability. Removing these obstacles and creating awareness of technology for sustainability could require the development of systematic investment strategies, additional funding sources, and developing and improving skills and knowledge.

Green Accounting implementation at the institution wasn't effectively implemented. There are examples of how they promote sustainability and show desire for a positive attitude, but there isn't an official policy and procedure to ensure the changes from the current informal environmental programs to implementing Green Accounting. Study shows (Adams, 2002; Burritt and Schaltegger, 2010) that Green

Accounting in post-secondary institutions need commitment from both the administration and the technical capability in order to successfully combine into the fundamental accounting and governance structure of the organization.

Conclusion

This study probed how prepared an institution with a local government college is to adopt Green Accounting processes. Using a mixed method in data collection and analysis, the findings show that Green Accounting continues to need higher levels of development in some areas, such as energy conservation, water and waste management practices. However, there do exist observable practices that appear to have some level of connection to sustainability projects, although they appear to be largely intuitive in nature and not significantly connected to the institution's traditional accounting system(s). Thus far, we have converging evidence that environmental practices exist, but they are not being systematically documented or reported in accordance with the principles of Green Accounting that have been established. The study illustrates that due to limited awareness of Green Accounting and lack of adequate infrastructure to support its use, these factors act as two of the major impediments to the adoption of Green Accounting in local government colleges despite the availability of administrative/VMS and waste data as well as through the provision of the technical/financial resources needed to perform a proper analysis, which leads to the absence of transparency in helping establish a sustainable planning process for the local community and effective use of all available resources. The institutional policy is currently more aligned with general environmental management practices than comprehensive Green Accounting. The research results indicate that there are expected trends in favor of the development of Green Accounting. In some institutions they have developed some basic sustainability practices and have attempted to fight environmentally harmful mindsets. More steps are needed to be taken in developing policies, making commitments, building capacity, and developing organisational systems for monitoring and reporting. In the current year, Green Accounting research in

terms of institutions of higher education supported by the public funds within developing countries and small towns has been very little. This research will also help policymakers in utilizing their current informal structures regarding sustainability into Green Accounting systems.

Limitations and Future Research

In this study, there are limitations in the interpretation of results since there is a different governance, funding, and independence that institutions of higher learning have. There are many things to be considered in making decisions and it can affect every part of its implementation. The concepts related to sustainability and environmental disclosure in higher education are focusing primarily on administrative resources and systems. (Lozano et al., 2015; Schaltegger & Burritt, 2017).

The study's findings are also connected to the reliance on self-reported data, and as such this can be considered an influence of the social desirability bias. Some individuals may feel pressured to embellish the efforts made towards achieving the institution's sustainability goals (those that have not been fully implemented) in order to provide a good image of their organisation or meet the expectations of people who have a particular view on the environment. In addition, when information relating to sustainability and environmental accounting is based on people's perceptions, as studied by Bebbington et al. (2014) and Ceulemans and Lozano (2014), the same risks exist from social desirability pressures. The triangulation that was reached through the use of interviews helps in putting the quantitative data into context, and when considering the quantitative results, it is important that these represent the readiness of the institution for implementing Green Accounting.

One of the reasons that local government colleges have institutional structures that can't facilitate the adoption of Green Accounting is because of the complexity and limitations of government bureaucracy and the budget process. Local government colleges depend on the local government unit for budget approval and there is a lengthy process needed which effectively affects the ability of local government to

spend its budget on projects or programs that are environmentally sustainable, like renewable energy, monitoring devices, and environmental information systems, these creates another blockage on the implementing environmental-based projects. Burritt & Schaltegger (2010) have identified systems inside the organisations who have committed to supporting environmental sustainability as an impediment to achieving that goal.

Beyond these limitations, no other investigation was conducted. Long term study should be included in future research to learn the actual costs and benefits of changes made by colleges to improve their environmental performance that include behavioural sustainability efforts that leads to the implementation of formal Green Accounting practices, such as environmental management accounting (Jasch, 2003; Schaltegger et al., 2013). Future research should also find out the differences between Colleges and other Government Entities when it comes to the factors regarding an organisation's spending behaviour and governance. This is in order to help organisations in understanding these differences. Lastly, the collection of complete financial and environmental data related to the use of resources of an organization like water, waste, and costs will strengthen the case for the promotion of Green Accounting within Public Higher Education Institutions.

Recommendations

A recommendation that came out from this research is that local government colleges should make green accounting part of their institutional development plan, rather than developing as policy of its own. This can be done by including the indicators of Green Accounting (i.e., energy, water and waste costs) in the Institutional Development Plan. Local Government Units can also incorporate their sustainability goals into their annual planning and budget development process. Prior studies emphasize that sustainability initiatives are more likely to be implemented and sustained when incorporated into formal strategic planning and governance structures rather than treated as voluntary or peripheral programs (Lozano et al. 2015; Schaltegger & Burritt, 2017). This

approach turns informal sustainability practices into required institutional duties.

Additionally, environmental data should serve more than just billing. The accounting office needs include Environmental Cost Centers in its system. Dividing environmental costs into specific centers for electricity, water, waste, and sustainability allows for focused analysis of expenses. Effective reporting depends on breaking down environmental costs and directly linking them to operations and decisions, as highlighted in environmental management accounting literature (Jasch, 2003; Schaltegger et al. 2013). Current systems can therefore lower costs and technical burdens.

Moreover, the college should adopt a phased technology investment strategy based on a savings-led reinvestment model due to budget limitations. Cost savings verified from low-cost behaviour-driven initiatives, such as energy conservation campaigns or waste reduction efforts, should be clearly set aside for future investments in sustainability technologies. These could include LED lighting upgrades, water-efficient fixtures, or occupancy sensors. This gradual method aligns public-sector sustainability literature that emphasizes slow implementation and internal reinvestment for resource-constrained institutions (Burritt & Schaltegger, 2010; Ferreira et al. 2010).

Additionally, to strengthen accountability, a formal Green Accounting Committee is needed. This committee should include the College Accountant, the General Services Officer, and BS Accountancy representatives. They will coordinate sustainability data, conduct internal audits of waste and energy, and review environmental cost information for reporting and planning. Environmental management accounting relies on coordination across departments, especially when sustainability responsibilities are spread out (Adams, 2002; Bebbington & Larrinaga, 2014).

Another important aspect is enhancing capacity-building efforts through curriculum-led integration. The College of Business and Accountancy should add Green Accounting or Environmental Management Accounting modules to its undergraduate accounting courses. Students involved in the coursework can improve

environmental data collection, analysis, and reporting, creating a sustainable model that addresses noted gaps in technical skills and specialized staff. It is widely recommended to incorporate sustainability accounting into accounting education to train future professionals who can support organizational sustainability goals (IFAC, 2005; Bebbington et al. 2014).

Producing a localized sustainability report, the annual "Environmental Accountability Report," is essential for the institution. This report clearly summarizes resource use, environmental costs, and savings from sustainability initiatives. Increased transparency supports internal decision-making and might inspire other local colleges to adopt similar Green Accounting practices, fostering wider acceptance across public higher education institutions (DiMaggio & Powell, 1983; Ceulemans & Lozano, 2014).

These recommendations highlight practical, low-risk strategies that embed Green Accounting into existing planning, accounting, and educational structures. Local government colleges can transform informal sustainability into formal, accountable Green Accounting systems by focusing on gradual steps, teamwork, and tailored training.

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