A Proposed Framework for Sustainable and Impactful Higher Education Institutions

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Abstract
High-quality education is necessary to create a more sustainable world. Higher Education Institutions (HEI) significantly influence future global leaders. Sustainable development has become even more important as the environmental impact on individuals and organizations has become a growing issue. A sustainability framework is a road map that outlines the paths of transformation appropriate for the given context and expresses the strategic direction of an institution. The research aims to: (1) define sustainability by reflecting the institution's and its stakeholders' cultures and values; (2) suggest possible programs universities can implement to ensure its sustainability; and (3) establish indicators for assessing the performance of an HEI focusing on sustainable development. A mixed methodology study following a sequential explanatory design strategy was conducted in one of the HEI in Manila, Philippines. The researchers first devised a survey to collect and analyze quantitative data. Qualitative data were then gathered and assessed through a focus group discussion, further clarifying the quantitative results. The research results show that an HEI significantly influences the management, engagement, and development of strategies for sustainable development issues. Data treatment and analyses show that by aligning current university efforts and identifying strategic interventions, the HEI goals may further advance by understanding how change occurs and being a catalyst for sustainability.

Keywords: Social Impact, Sustainability, Higher Education

1. Introduction

Growing concern about people and organizations' impact on the environment prompted an emphasis on sustainable development. In 1987, the United Nations' World Commission for Environment and Development, chaired by former Norwegian Prime Minister Gro Harlem Brundtland and known as the Brundtland Commission, released the study "Our Common Future," commonly known as the "Brundtland Report" (Brundtland, 1987). The report's release is regarded as a pivotal point in raising international awareness and debate on the relevance of global sustainable development. While development is required to meet human needs and increase the quality of life, it must be done without eroding the natural environment's capacity to meet current and future requirements, according to this definition.

Sustainable Development has gradually grown from an ambiguous definition to a global action with greater practical wisdom. From standard goals concentrating on ecological sustainability to Millennium development goals and United nations sustainable development goals today, the goal of sustainable development has become more inclusive and universal. There is still a lack of sustainability and a desire for short-term intra-generational equity. Furthermore, taking into account local cultural aspects, enhancing governance capacity, and focusing more on life support systems are all key components in promoting long-term growth (Shi et al., 2019).

Not only is the Philippines the world's tenth most populated country, but with over 30% of the population under the age of 15, it is expected to have the fastest rise in its university-aged population among ASEAN countries. With a 40% increase in higher education enrolments over the last ten years, demand for higher education is continuously increasing and is being supported by national policy (The Quality Assurance Agency for Higher Education, 2018). Whereas HEIs have been implementing Sustainable Development relatively extensively, their efforts have tended to be segmented and focused on internal processes. It is becoming increasingly important for HEIs to take a more holistic approach to their system aspects and impacts to increase their contribution to SD. Creating novel impact assessment methodologies and updating existing indicator-based Sustainability Assessment Tools (SATs) can aid HEIs in this attempt (Findler et al., 2018).

Sustainability reporting has also been upgraded as a requirement for HEIs to submit to various government agencies in order to ensure that organizations analyze their impacts on sustainability concerns and are transparent about the risks and possibilities they face. Only 32% of companies reported having sustainability governance in place in a recent study, which is unsurprising given that sustainability reporting is still relatively new in the country (Villacorte, 2021). Nevertheless, as sustainability challenges become more prominent in the development of corporate strategy, business leaders should consider appointing a member of management to lead the organization's sustainability efforts.

1.1 Research Questions

This research proposes a framework that serves as a roadmap that identifies contextually appropriate transformation routes while articulating a university's strategic direction. By mapping understanding of how change occurs, existing activities can be brought together and identifying strategic interventions would help the researchers get closer to the goals. This study aims to conduct a thorough evaluation of the available literature on higher education

impacts to establish an integrative perspective of HEIs' influence on sustainable development. This project seeks to answer the following questions:

1. How does a university define sustainability reflective of the institution's culture and values and its stakeholders?
2. What programs should a university employ to ensure its sustainability following the United Nations Sustainable Development Goals?
3. What indicators should be employed in the institution's performance evaluation to ensure that a higher education institution aligns with sustainable development goals?

It is right that universities will integrate sustainability into the institutions' mission and planning, curricula, research, student life, operations, and community outreach. This paper, concerning the issues mentioned above, will explain the importance of creating sustainable campuses. The study produced findings that are vital to all stakeholders in higher education i.e. students, university staff, faculty, administrators, and also to future researchers.

2. Sustainability Development in Higher Education

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity (*Sustainable Development Goals*, 2021).

HEIs are now regarded as "small cities" because of their substantial size, massive population, and complex undertakings on campuses which in turn have serious effects on the environment whether it be direct or indirect impacts (Alshuwaikhat & Abubakar, 2008). Therefore, there is no doubt about how much impact HEIs can make to pay it forward by involving themselves in the furtherance and implementation of sustainability.

Other campus sustainability initiatives specifically across USA and Canada have developed concepts that point out that faculty and staff are shown to be "intrapreneurs" of universities who work for social and ecological good from within large organizations (Brinkhurst et al., 2011). This then makes HEI Stakeholders possible counterparts of Corporate Social Responsibility (CSR) to what is now called University Social Responsibility (USR). The USR concept was adapted from CSR and changed the stakeholders from corporates to HEIs instead wherein people from the university such as the administrators, faculty members, and students engage with a chosen community like a cooperative company with its goal to help communities rather than for employee coordination or promotion (Malit & Tsai, 2020).

2.1 The United Nations Environment Programme Sustainable University Framework

Within the United Nations system, the United Nations Environment Programme (UNEP) coordinates responses to environmental challenges. The UNEP is the UN system's principal environmental authority. UNEP's expertise strengthens environmental standards and practices while also implementing environmental duties at the national, regional, and international levels. UNEP's objective is to lead and encourage collaboration in environmental protection by motivating, informing, and empowering nations and peoples to improve their quality of life without jeopardizing future generations' quality of life.

On July 8, 2021, the United Nations Environment Programme started a new project to define what it means to be a sustainable university and urged more universities to do so. Because of this, UNEP created the UNEP's Sustainable University Framework, which aims to define what it means to be a sustainable university and give out a roadmap on how to become one (Patton, 2021).

The framework shown in Figure 1 enables the university to develop its sustainable course that uses an empowering, collaborative, and global definition of what constitutes a sustainable institution and a framework to become one. The collective framework intends to coordinate, aggregate, and amplify the efforts of existing Higher Education sustainability tools. The framework takes a whole-institution approach to ensure that sustainability is integrated across all aspects of the organization, reflecting the holistic approach of the UN Sustainable Development Goals and most sustainability network accreditations. Recognizing the many different contexts and possibilities worldwide, the UN Sustainable University Framework embraces the common elements of existing Frameworks and assessment tools developed by existing universities.

Figure 1: UNEP Sustainable University Framework (Source: UNEP)

A university has four Core Areas using a quadruple bottom line strategy across the entire institution to include in its planning and activity. The UNEP provided some quick wins that universities may consider in each core area which are as follows.

- Teaching and Research - focuses on student engagement while they are still in the formative stage of their lives and utilize the curriculum for shaping them into sustainability-minded people.
- Environment and Climate - for determining outstanding climate impact for a university using the Carbon Management Hierarchy.
- People and Society - exerts efforts in initiating and implementing actions for a just, resilient, and sustainable communities.
- Administration and Governance - is a fundamental prerequisite that involves a strategic commitment to move forward to sustainability expected from all levels within the university.

To evaluate Teaching and Research, sustainability in curriculum, research, promotion & awareness, and student organization activities were asked during the survey and discussed in the focused group discussions.

Environment and climate were focused on determining status in terms of the use of water, protection of biodiversity, waste management, travel options, use of electricity, and adherence to building standards.

For People and Society, impact on community and society, supplier performance, purchase of goods & services, and partnership on sustainable initiatives were discussed.

Lastly, Administration and Governance helped to ascertain the promotion of social mobility, equality and collaboration at work, reward and recognition for leading sustainability initiatives and support the wellbeing of employees.

2.2 Commission on Higher Education Support on Sustainable Development Goals

The Commission on Higher Education (CHED) was established on May 18, 1994, when Republic Act No. 7722, also known as the Higher Education Act of 1994, was passed. CHED, an administratively affiliated agency to the Office of the President, is led by a chairperson and four commissioners, each of whom has a four-year tenure. In defining goals, policies, and strategies relating to higher education and the operation of CHED, the Commission En Banc acts as a collegial body.

The Commission is devoted to promoting excellence, relevant, and responsive HEI and programs, with the SDG on Education as the overarching framework, strategies, and principles aligned with Ambisyon 2040 (Commission on Higher Education, 2020). To ensure a highly employable and skilled Filipino workforce, the Commission will align with international standards, national priorities, and local needs.

According to Prospero De Vera, chairman of CHED, the increase in the number of Philippine universities helping to achieve the SDGs is a sign of HEIs' growing internationalization campaigns and their desire to compare themselves to and compete against the best universities in the world (Yang, 2022).

2.3 Global Metric for Sustainability Assessment

The Times Higher Education (THE) Impact Rankings are the only international performance tables that evaluate universities in relation to the Sustainable Development Goals established by the United Nations SDGs (Times Higher Education, 2022). More than 1406 universities now worldwide have received recognition for their efforts in addressing the most pressing global concerns through THE (2020) University Impact Rankings, which were launched in 2019 to quantify institutions' social and economic impact.

15 universities in the Philippines are included in the recently released Impact Ranking 2022. According to CHED (2020) figures as of 2020, excluding satellite campuses of state universities and colleges, there were 1,975 HEIs in the country. Only 1% of the Philippines' total HEI population measures their broader influence on society using indicators that have been rigorously calibrated to allow for thorough and fair comparisons across four major categories: research, stewardship, outreach, and teaching, on which THE is focusing. There

are even more universities around the globe that have the potential to contribute more to sustainable development, but they are not recognized in the Impact Rankings.

Of the 15 universities in the Philippines that made it in the list of HEI Impact ranking, the four Sustainable Development Goals (SDG) 4 Quality Education, SDG 5 Gender Equality, SDG 3 Good Health and Well-Being, and SDG 13 Peace, Justice, and Strong Institutions, are highlighted to have received the highest marks. The result of this research will show what are the top SDGs at the university being studied and whether they are the same as those at the other institutions stated in table 2 or whether they are distinct SDGs that the university being studied stakeholders consider being more critical.

There is a huge opportunity for more universities to be included in the ranking of Times Higher Education by reviewing and acknowledging the gaps in the planning and execution.

2.4 Conceptual Framework

Show in Figure 2 is the framework for acquiring the current status of sustainability efforts within a university and its stakeholders to come up with recommendations that would further efforts in pursuing long-term sustainability.

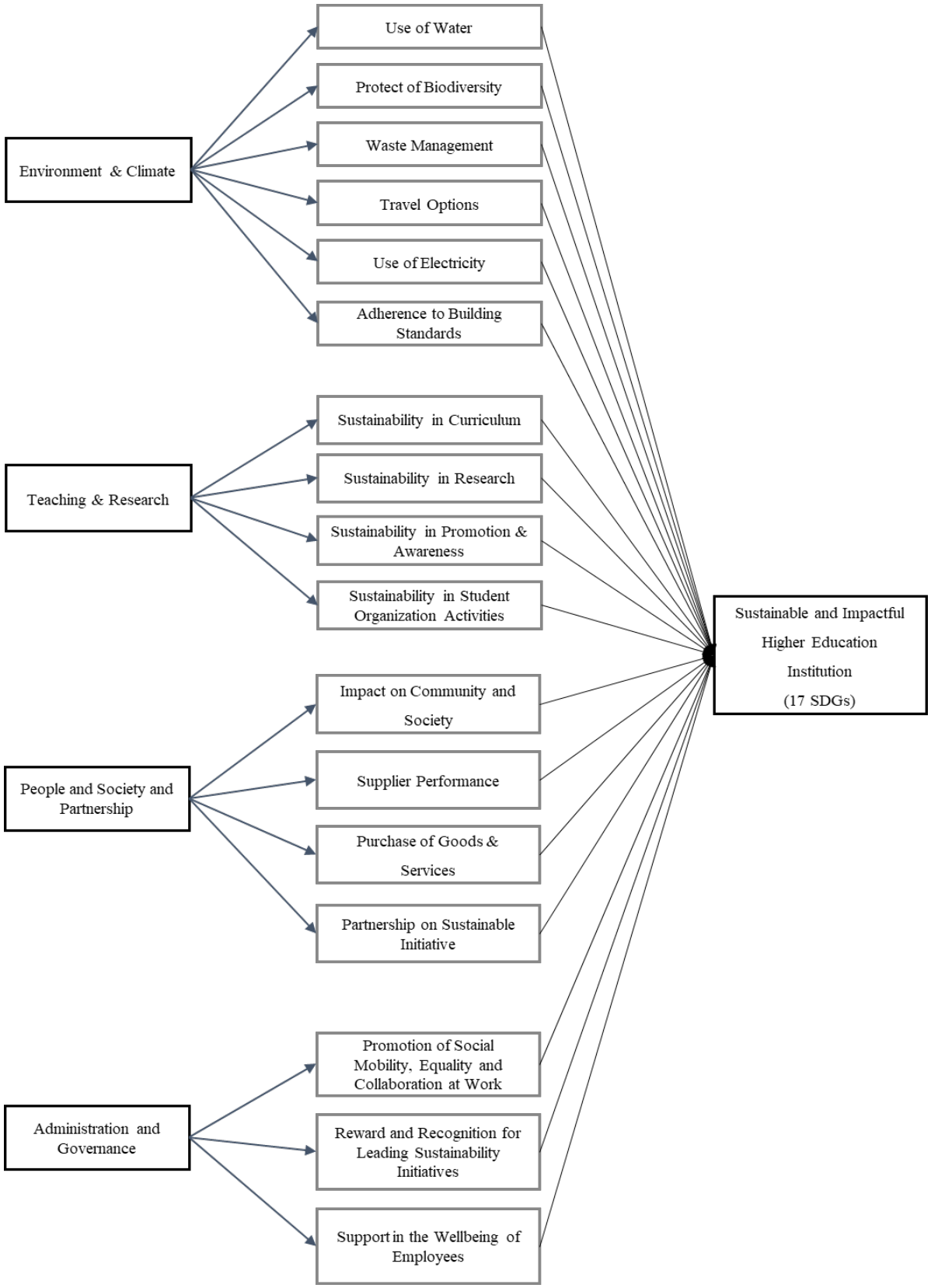

Figure 2: Conceptual Framework

3. Methods

The researchers chose to use mixed methods research following a sequential explanatory design approach as shown in Figure 3 (Creswell, Plano Clark, et al., 2003). The collection

and analysis of quantitative data is the foundation or the first phase of this design. The next step is to collect and analyze qualitative data after the first phase. The study's second qualitative phase planned to build on (or connect with) the findings of the first quantitative phase.

A mixed-method approach was used for this study using Survey and Focus Group Discussions (FGD) whose respondents all came from Adamson University. Data gathering took most of the time as it started with how questions should be formulated and composed in a way that will maximize the data to be extracted.

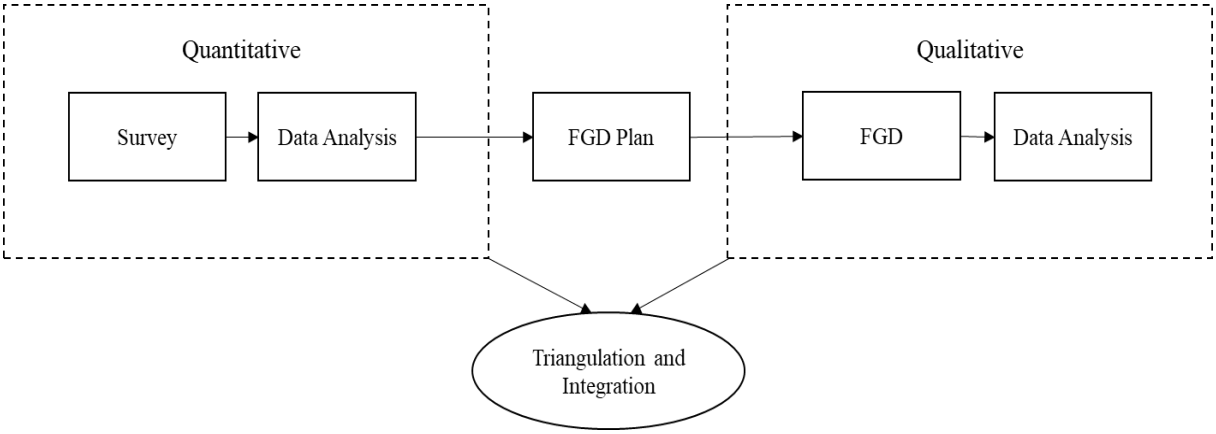

Figure 3: Sequential Explanatory Mixed Method

3.1 Survey

The survey was made in Typeform platform shown in Figure 3 composed of questions divided into 3 parts which are as follows:

- Personal Information (to easily identify the source of the response)
- Perception, Awareness, and Behavior on Sustainability (to determine current efforts and willingness for active participation)
- Other information (relevant questions that would garner more data)

The survey contains 35 questions that take not more than 15 minutes to answer. The survey instrument had undergone review by the Data Privacy Office of the university. A signed formal letter from the researcher was released through electronic email informing target respondents to access the survey link. The letter also provided reassurance to respondents that all data collected will be kept confidential and will not use the respondents' names in any report.

Survey questions were mainly determining the level of perception of each respondent and how willing they are to be involved with promulgating and applying sustainability. Since the institution has a population of 13,000 and 700 dates enrolled students and active employees respectively, a representative sample of 2,500 was the total number of initial target respondents. The survey link was distributed using the institution's e-learning platform, and institutional e-mails to ensure that only officially enrolled students and employees would be able to respond.

The Human Resources Department provided the population of employees upon request of the research team, and the population of college students was acquired from the university's Record Management System (RMS) based on enrollment records for the second semester of the school year 2021–2022. A total of 1830 were the verified respondents after examining the submissions. Excluded are duplicate submissions, incomplete submissions, and respondents not using official university email.

Stakeholders	**Frequency**	**% to Subtotal**	**% to Total**
Students			
1st Year	481	28.0	26.3
2nd Year	238	13.9	13.0
3rd Year	554	32.3	30.3
4th Year - 5th Year	442	25.8	24.2
Subtotal	1,715	100.0	93.7
Academic Employee			
Less than a year	2	3.3	0.1
1 year to less than 3 years	17	28.3	0.9
3 to 5 years	6	10.0	0.3
6 to 10 years	15	25.0	0.8
11 to 20 years	10	16.7	0.5
More than 20 years	10	16.7	0.5
Subtotal	60	100.0	3.3
Office Staff			
Less than a year	3	10.3	0.2
1 year to less than 3 years	8	27.6	0.4
3 to 5 years	3	10.3	0.2
6 to 10 years	3	10.3	0.2
11 to 20 years	3	10.3	0.2
More than 20 years	9	31.0	0.5
Subtotal	29	100.0	1.6
Administrators			
Less than a year	0	0.0	0.0
1 year to less than 3 years	1	3.8	0.1
3 to 5 years	0	0.0	0.0
6 to 10 years	6	23.1	0.3
11 to 20 years	7	26.9	0.4
More than 20 years	12	46.2	0.7
Subtotal	26	100.0	1.4
Total	**1,830**	**100.0**	**100.0**

Table 1: Demographic Profile of Survey Respondents

Table 1 shows that 94% of the survey respondents are students and 6% are employees from the university composed of faculty, office staff, and administrators. The number of students who took and completed the survey is 1715 where 481 comes from the first year, 238 from the 2nd year, 554 from the 3rd year, and 442 from the fourth and fifth years. The total number of employees who participated in the survey is 115 with 60 faculties, 29 office staff, and 26 administrators.

3.2 Focus Group Discussion

The Focus Group Discussions proceeds after the survey was conducted. This allows the authors to explore a qualitative research method that would encourage representatives from corresponding stakeholder groups to discuss in-depth issues regarding sustainability within the institution and at the same time be regulated by selected moderators.

Data gathered has been analyzed and interpreted by a matrix which will be used for the framework development. The framework development will then be finalized to come up with an HEI sustainability assessment tool that can be used not only by Adamson University but also by other HEIs.

The researchers obtain and analyze quantitative data initially in this design. The qualitative data is collected and evaluated in the second phase and used to explain or expand on the quantitative results gained in the first phase. This strategy justified that quantitative data and subsequent analysis provide a broad grasp of the research subject. The qualitative data and analysis clarify and explain the statistical results by delving deeper into the perspectives of the participants (Rossman & Wilson, 1985; Tashakkori & Teddlie, 1998; Creswell, 2003).
The researchers utilized a Participant Selection Model, one of the types of Explanatory Model, since it requires quantitative data to identify and select participants for a follow-up, in-depth qualitative investigation.

After examining the submissions, the final verified number was 1829 out of a total of 2284 responses received. Using "Purposive" or "convenience" sampling, the researchers selected participants for the focus group. The researcher chose members of the Adamson community who will be the best sources of information. The chosen participants were among those who had taken part in the recent research survey. Out of the 13,380 HEI stakeholders, they have been grouped into four i.e. college students, academic employees, office staff, and administrators.

The set of questions to be asked was discussed between the researchers and counselor to avoid biased outcomes or answers. The number of questions was limited to six and is expected for elaboration during the discussion. Due to the ongoing Covid-19 pandemic, FGD was conducted online through the Zoom platform. A total of 5 Focus groups were established with four to five participants each. Categories were students (varying courses and year levels), Academic Employees, Office staff, and Administrators. Two guidance counselors from the Guidance Counseling Department were assigned for each group to serve as FGD moderators and enjoined with a technical assistant in case difficulty in operating the application arises. A mock FGD was done in one of the student FGD groups to check the viability of the questions and to serve as an example for other moderators and technical assistants involved. All the other FGDs were conducted on the same day simultaneously by using Breakout rooms in zoom. Each group discussion spanned from ten to fifteen minutes. All FGD were video recorded and moderators' notes were transcribed.

3.3 Rigor of the Study

Survey Questionnaire Section		Cronbach's Alpha	No. of Items
a.	Stakeholders' Personal Efforts on Sustainability	.81	10
b.	Stakeholders' Perception on University Efforts towards Sustainability	.96	16

Table 2: Reliability Test

4. Results and Discussion

This chapter provides an overview of the results and a discussion of the data gathered from the instrument used. Shown in Table 4 are the hypothesis statements that the researchers wanted to answer with the collected data from the research instrument. To analyze the result, the researchers used both SPSS and Graphing Tool.

Research Question	**H_1**	**H_0**
1. How does a university define sustainability reflective of the institution's culture and values and its stakeholders?	There is a definition of sustainability reflective of the institution's culture and values and its stakeholders.	There is no definition of sustainability reflective of the institution's culture and values and its stakeholders.
2. What programs should a university employ to ensure its sustainability following the United Nations Sustainable Development Goals?	There are significant programs a university should employ to ensure its sustainability following the United Nations Sustainable Development Goals.	There are no significant programs a university should employ to ensure its sustainability following the United Nations Sustainable Development Goals.
3. What indicators should be employed in the institution's performance evaluation to ensure that a higher education aligns with sustainable development goals?	There are indicators that can be employed in the institution's performance evaluation to ensure that a higher education aligns with sustainable development goals.	There are indicators that cannot be employed in the institution's performance evaluation to ensure that a higher education aligns with sustainable development goals.

Table 3: Hypotheses Statement

4.1 Quantitative Results

The various programs the university should support according to respondents, as shown in Figure 10, are SDG Topics in SDG 4 "Quality Education", SDG 3 "Good Health and Well-Being" and SDG 8 "Decent Work and Economic Growth".

As for the world problems, stakeholders show interest in solving Climate Change and Destruction of Natural Resources show in Figure 4. When asked on what is the most difficulty to do, stakeholders had answered "Choosing a Diet on Sustainability" ($\mu = 5.8$) and "Engaging in Sustainability-related Activities" ($\mu = 6.7$) as shown in Figure 5.

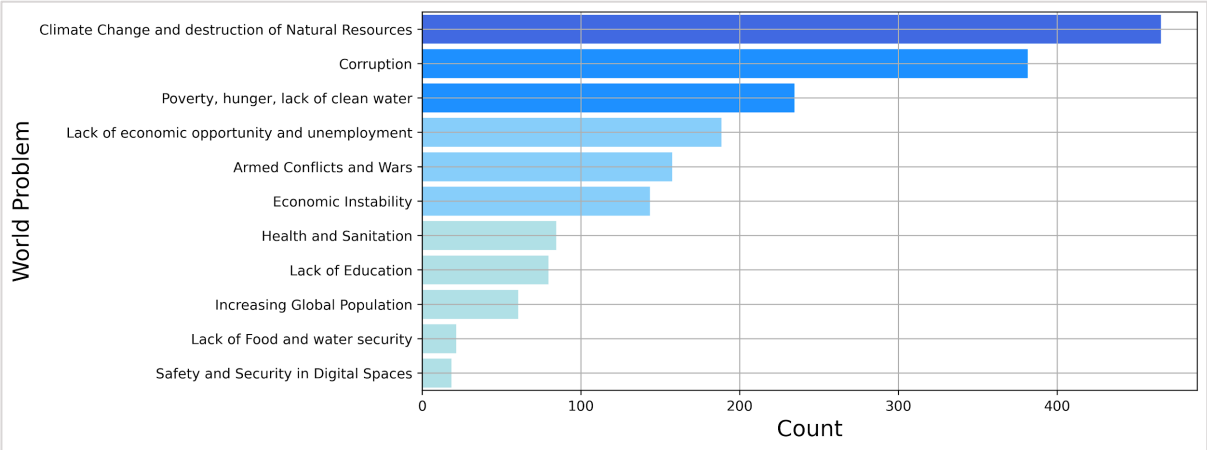

Figure 4: Survey participants' response on "Which of the following do you consider the single most serious problem facing the world today?"

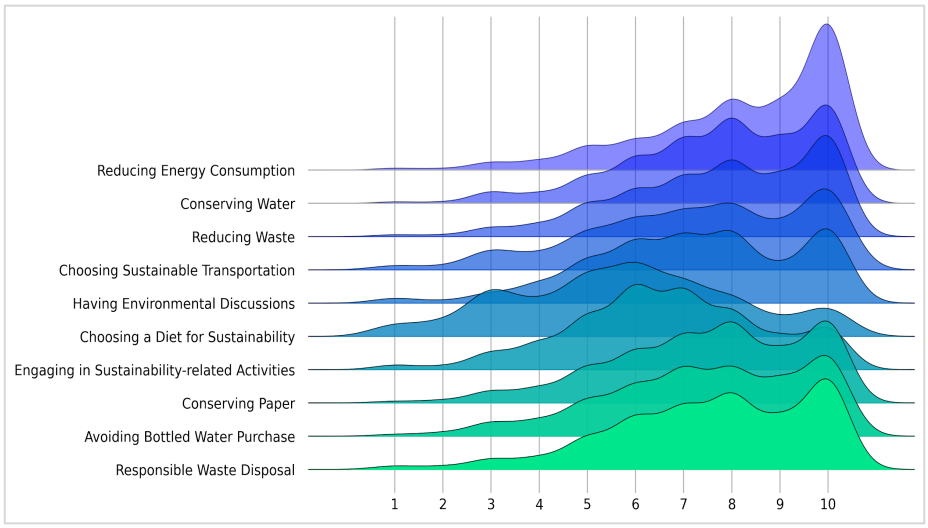

Figure 5: Survey participants' responses on "To what extent do you believe it is difficult or easy for you to do the following?"

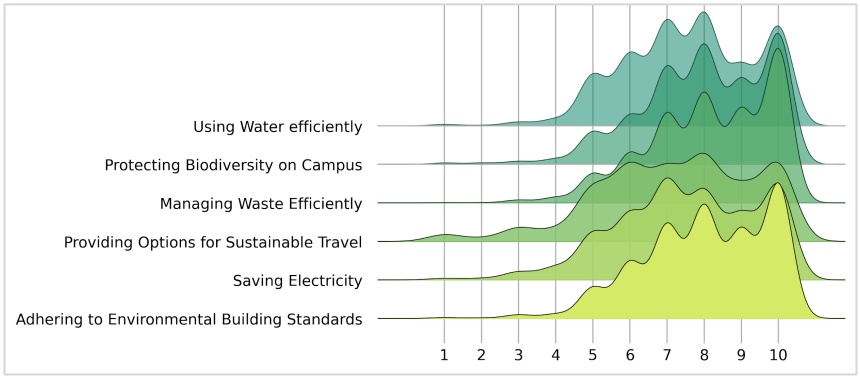

Figure 6: Survey participants' response to "I believe that our university is …": Environment and Climate Change

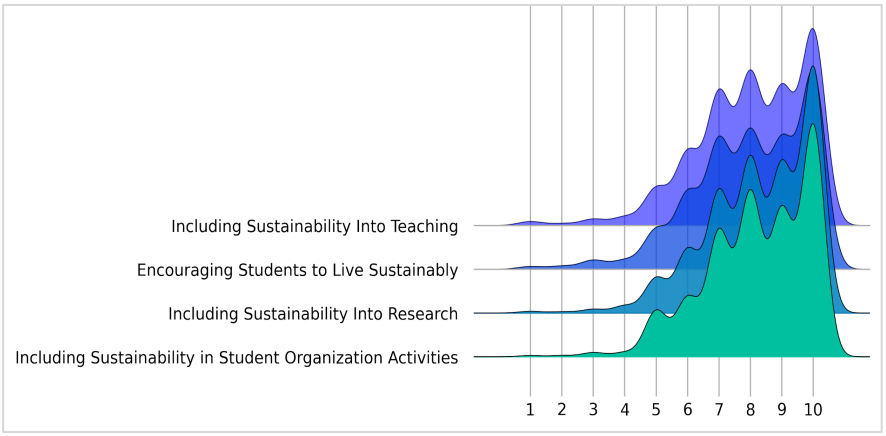

Figure 7: Survey participants' response to "I believe that our university is …": Teaching and Research

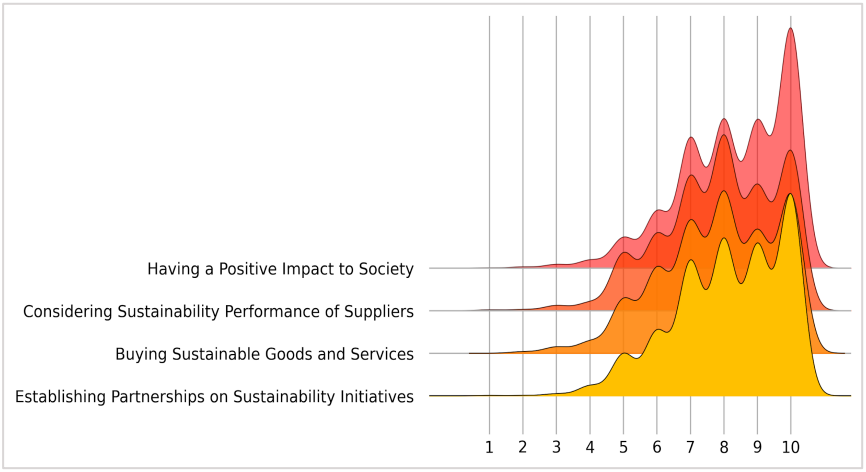

Figure 8: Survey participants' response to "I believe that our university is …": People, Society, and Partnership

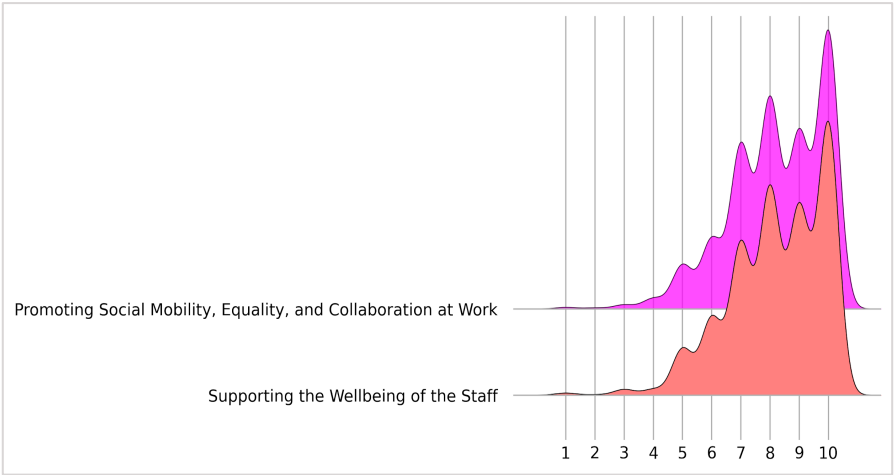

Figure 9: Survey participants' response to "I believe that our university is …": Administration and Governance

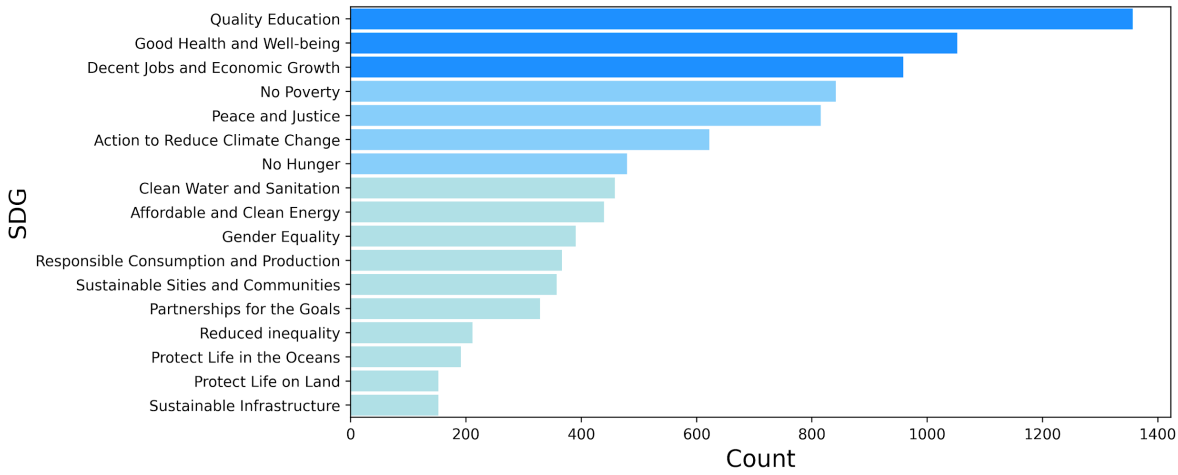

Figure 10: Survey participants' response to "Top SDGs that are most important to you"

When participants were asked the difficulty or easiness to do the mentioned sustainability activities, as shown in Figure 5, easiest for them are the following with p value < .001 i.e. "Act to reduce waste (carry a reusable shopping bag, decline single-use bags/utensils/straws, take a reusable to-go container)" and "Talk with your friends or colleagues about problems related to the environment."

Based on the graphs most of the respondents gave a score (somewhat/strongly agree) in the areas of "Having a positive impact to society" shown in Figure 8 and "Including sustainability in research" shown in Figure 7, these two indicators have the highest mean. Taking note that during the FGD the participants mostly answered their familiarity with Integrated Community Extension Services or outreach department and the Research, where both of it are part of the student's curriculum. The 4 indicators "Using water efficiently", "Providing options for Sustainable travel", "Saving electricity" shown in Figure 6 and "Considering Sustainability performance of suppliers" and Buying sustainable goods and services" shown in Figure 8 got the lowest mean or with mean neither agree nor disagree.

4.2 Qualitative Results

FGD Questions	Theme
1. What is your personal understanding of sustainability?	Resources, Availability and Allocation, Continuity, Development, Goals and Plans, Improvement, Problem-solving, Value Maintenance, Stability
2. What are the existing sustainability programs or activities in AdU that you are aware of?	Aiming for zero-waste, Outreach Programs, Research Proposals until Commercialization, Partnerships, Assistance for continuing Education, Efforts toward Good-health and well-being
3. Do you see the alignment of AdU initiatives, student organizations, and classroom activities with the UNSDGs? How significant are those to you?	Yes, Quality Education, Health and Well-being, Zero hunger, Raising awareness, Research initiatives, Values promotion, - Partnerships, Accreditations, Sustainable Communities

4. In your opinion, which among the SDG Goals would AdU need to focus on? Why?	SDG 9 Industry, innovation and infrastructure (Mention 5 times), SDG 4 Quality Education and SDG 13 Climate Action (Mention 4 times), SDG 3, Good Health and Well Being, SDG 11 Sustainable Cities and Communities and SDG 17 Partnership for the Goals (Mention 3 times)
5. What will motivate you to participate in a sustainability event or activity? Why?	Advocacy, Establish relationships, Support Sustainability, - Help and encouragement, Taking actions, Responsibility, Setting an example, - Show commitment, Sense of fulfillment
6. If you will be participating in a sustainability activity, what are your expectations or expected outcome?	Furtherance of knowledge, Enlightenment, Self-development, Broader perspective, Actions and interactions, Encourage, Advocacy

Table 4: Hypotheses Statement

5. Conclusion

Sustainability has been understood well and internal stakeholders were all aware based on what they have learned and experienced at the university. Based on the study's theoretical framework and data gathered, a concentration and emphasis on Teaching and Research are noticed to be dominant as compared to the other 3 components which are concerned about Admin and governance, environment and climate, and people and society.

Stakeholders' perceptions of the most important issues to concentrate on, such as the SDGs, global issues, and individual hurdles in adopting sustainability, can be used to develop sustainability initiatives.

For the last point, sustainability is heavily emphasized in research-related projects and initiatives as well as outreach and community programs; however, other departments and areas of the university are considered to be undertaking less impactful initiatives to integrate sustainability. It has been significant since it is easier indeed to teach and learn but definitely harder to put them into practice.

This study concludes by making stakeholders realize which areas are we lacking effort in, which areas need to improve, and which areas we can be helpful with based on our expertise and interests. They will therefore be urged to put whatever learnings and experience they had into application.

Evaluations are almost always done by third-party accreditors. However, this study considered internal stakeholders using random sampling of participants. This study almost acts as a mirror for self-reflection, having a look from different perspectives, points of view, and from the standing point of each different individual involved representing most of their population and having their say in establishing a policy, making them feel very much involved, that they were really a part of it and were all subjectively considered in it.

It is advisable to establish possible Green or Sustainability office governance which can be an effective tool in supporting the implementation of sustainability initiatives on campuses, and

in fostering awareness among students and staff on matters related to sustainable development.

Another recommendation is that the university must offer the knowledge and skills necessary for continuous development so that all its branches can achieve sustainability goals.

And for the last point, it is vital to know that Adamson university is a part of the so-called "University belt". U-belt refers to the area where there is a high concentration of colleges and universities in the capital city of the Philippines, Manila. This study may also pave way for HEIs to collaborate with Sustainable initiatives and actions in the future.

The authors recommend that this study continues by applying the same framework to other U-belt universities to determine the overall status of local HEIs. This could lead to determining the lacking of each HEI and what they could still work out. Leading to future partnerships and collaborations to fill in the gaps.

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