Environment Sustainable Practices in Higher Education Institutions in Oman

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ABSTRACT

This research aims at understanding the extent to which HEIs in Oman undertake various initiatives to increase environmental sustainability. In so doing, the research applies survey method to collect data. Survey questionnaires were issued electronically. A total of 105 completed responses have been collected. These data are analyzed applying quantitative research technique to analyze the data. Analysis shows that the respondents are aware about the term 'environmental sustainability'. Moreover, majority of the respondents agree that their HEIs link environmental sustainability to their mission and vision. The respondents have further positively replied that HEIs motivate them to care more about the environment. The survey results further show that students always strive to keep their campus clean through different means such as managing study materials electronically instead of printing. In addition, students tend to conservation energy by avoiding unnecessary use of energy. However, students are of the opinion that they need more opportunities to study courses related to environmental sustainability. Faculties have stated that they spontaneously motivate students to become environmentally friendly. These findings have enormous policy implications for HEIs and regulatory authorities.

Keywords: environment, sustainability, higher education institutions, social responsibility, Oman

INTRODUCTION

The year 2023 has been marked by various undesirable climate effects. According to the World Meteorological Organization (WMO), the year 2023 was the hottest month ever on record in the history. According to the report, the year 2023 was about 1.40 degrees Celsius warmer than the pre-industrial 1850-1900 baseline average temperature. Such a rise of global temperature will wreck a serious havoc on our habitat and human survival. Scientists warn that the severe heatwaves due to high temperature will become more frequent in the coming days and will affect world economy severely. According to International Labor Organization (ILO, 2019), total working hours will decrease by an estimated 2.2% by 2030 due to reduced efficiency or slower work caused by extreme heat. The report further estimates that about 200 million workers worldwide are exposed to extreme heatwaves and the number is predicted to increase eightfold by 2050. In a research paper published by Callahan & Mankin (2022), it has been shown that climate change attributed to human-caused emission resulted in output loss between $5 and $29.3 trillion globally during the period 1992-2013. Considering the recent dramatic climate change, Vetter (2023) refers to a report published by the 12-top scientists worldwide who are quoted saying "as scientists, we are increasingly being asked to tell the public the truth about the crises we face in simple and direct terms. The truth is that we are

shocked by the ferocity of the extreme weather events in 2023". The conclusion of this research forwards the view that environmental sustainability should be the core of economic and social activities.

Sustainability tends to incorporate social, economic, and ecological intricacies, enabling individuals to live with equal rights and duties. Thus, it facilitates the economy to distribute wealth fairly to encompass necessities while optimizing resource requirements and respecting all life forms while conserving biodiversity (Klarin, 2018 b). Sustainable development has touched the realm of education, particularly within universities associated with sustainable development (SD) right from the beginning (Filho et al., 2018). With an increasing awareness globally of economic, environmental, and social issues, higher education institutions (HEIs) are confronted with immense pressure than ever before to be at the forefront in distributing ideas regarding sustainability within mainstream society (Zaki & Snake, 2020; Ashida, 2023). The onus of providing educational programs, developing a change culture, sponsoring research, and stimulating community outreach to handle social, economic, and environmental dimensions of sustainability reply greatly on a higher education institution.

Moreover, HEIs create and disseminate knowledge to the broader society through continuous research. As a result, they can bring the real picture of the climate change and devise ways to reduce its impacts on human livelihood. Berchin et al. (2021) argue that HEIs can promote environmental sustainability by creating knowledge, facilitating its dissemination, enhancing the capability of the society by innovating ways to tackle climate change. Similarly, Ramísio et al. (2019) view that the environmental sustainability should be reflect on the mission and vision of HEIs.

However, HEIs are not always seen to be adhering to this social norm. For instance, in the context of Portuguese HEIs, Aleixo et al. (2018) find that among the sustainability dimensions, environmental dimension appears to be the third most important factors after social and economic dimensions of sustainability. Barros et al. (202) show that Brazilian universities focus on environmentally sustainable issue and undertake various initiatives to make the campus greener. In the context of universities in South Africa, Awuzie & Emuze (2017) find that cost reduction incentive of HEIs underlies the sustainability drive in most African countries. Bautista-Puig & Sanz-Casado (2021) demonstrate that this specific goal of sustainability is yet to be embedded in the overall policies, practices, systems of Spanish universities. Examining data from 16 Malaysian universities, Anthony (2021) finds that the sample HEIs drawn for their study practice green policy as a means of attaining sustainability. Ribeiro et al. (2021) analyze data collected from 1013 respondents document that sustainable development strategies can explain 18% of students' level pro activity, 27.7% of their knowledge and awareness regarding sustainable development. Gilal et al. (2019) show that HEIs can implement green environment agenda through green human resource management practices.

RESEARCH GAP

Despite the availability of international evidence regarding environmentally sustainable initiatives and practices by HEIs in different countries, there is a dearth of evidence about this issue in the context of Oman. Al-Balushi et al. (2022) conduct a study assessing the students' perception about green economy and find that students are highly aware about the green economy which the researchers attribute to higher education. They further find that the level of awareness is greater among the students with college degree. However, their study focuses only on one higher education institution. Cazacova (2017) examines the level of courses embedded with HEIs curriculum in Oman that achieve sustainability goals and finds that the course 'Special Topic in Architecture' provides students with the learning experience that assists them implement sustainability goal in the real-word project. This study also focusses on one higher education institution in Oman. Moreover, an integrated approach – in which students, educators, and administrators' opinions are reflected – to assess the environmentally sustainable practices of HEIs in Oman is absent in the

existing literature. Hence, this study aims to fill his research gap.

RESEARCH OBJECTIVES

Given the above-mentioned research gap in the existing literature, and the socio-economic backdrop of HEIs, this research aims achieve the following objectives.

- Identifies the general perception about the environmentally sustainable practices adopted by higher education institutions in Oman.
- Understands students' level of awareness, self-motivated environment behavior, and the degree of institutional input received from the respective HEIs that encourage environmental sustainability practices.
- Assesses the degree of faculty's teaching, research, curriculum development, and advising activities that are directed toward environmentally sustainable practices.
- Points out the degree of pro-environmental practices reflected in administrative activities of HEIs in Oman
- Recommends strategies to encourage environmentally sustainable practices at HEIs in Oman.

LITERATURE REVIEW

To maintain health and welfare, environmental sustainability is the responsible component that strives to conserve the world's ecosystem and preserve natural resources (Perdan, 2004). Organizations that uphold environmental sustainability assess and monitor carbon emissions throughout their entire operation, as well as reduce resource utilization and waste (Gupta, 1995). They also take appropriate measures to expand efficiency. In the context of global education, sustainability has grown in importance. This idea has been incorporated into the tenets and practices of several higher educational institutions. Through their outreach and cooperation, social, educational, research, and campus operations, they incorporate as much as they can. Universities are already making far greater efforts to create sustainable campuses by utilizing eco-friendly landscaping, keeping carbon emissions below reasonable limits etc. (Fu, 2023).

The notion of environmental sustainability refers to the natural environment and the way in which it continues to be resilient and productive for supporting human life. Environmental sustainability pertains to integrity within the ecosystem while executing the capability of the natural environment (Dong, 2015). Numerous pieces of data demonstrate how concerns about environmental sustainability are growing (Ekins & Zenghelis, 2021). The effects of climate change, biodiversity loss, and rising sea levels, among other factors, highlight how crucial environmental sustainability is. And this goes beyond the sectoral boundaries.

Higher education institutions are one of the main social entities in charge of developing future leaders with the knowledge and skills necessary to address societal issues (Menon, et al. 2022). In a global level, sustainability techniques are currently being gradually incorporated into higher education institutions by many universities. As a result, more and more of these institutions are realizing that it is their duty to include environmental sustainability into their daily operations and procedures (Bautista-Puig, et al., 2020). Filho et al (2022) assess the degree of sustainability practices adopted by HEIs in Asia. They find that far eastern nations like Indonesia, Malaysia, and Thailand have shown greater sustainable practices.

The achievement of environmental sustainability in higher education institutions is influenced by a variety of factors. According to James et al. (2012), green campus operating metrics, teaching, research, and service play a crucial role. They find that while environmental sustainability is becoming increasingly popular in

academic settings, it remains a contentious and difficult concept to define. Similarly, Christie et al. (2013) demonstrate that academics prefer and make use of tutorials, talks, critical thinking, and lectures in their instruction to provide students adequate understanding about the environmental behavior. In the Portuguese scenario, Aleixo et al. (2018) indicate that higher education institutions in Portugal primarily focus on the social side of sustainability. Environmental is the very last and least important category, followed by economic and institutional factors.

The GCC pictures are comparatively similar to those of global and regional scenarios. With over 59 million people living in the six GCC nations, each country has an urbanization rate of more than 80%. Thus, the necessity of environmental sustainability is becoming far more crucial than even before. Higher education institutions are taking more action to control the problem. The study of Shishakly et al. (2024) show that students are very conscious of the impact of curriculum and course offerings, as well as technology-driven features like green campus efforts, smart education techniques, and smart campus infrastructures. The identical issue was brought up by Abubakar et al (2020) in their study. An institution can support public rules and policies to address local, regional, and global sustainability concerns in addition to fostering stronger relationships with decision-makers and social stakeholders. It can also support outreach and awareness initiatives, university-community partnerships, and public regulations. Similarly, Alkhayyal et al. (2019) conduct research about sustainability practices by using survey technique to the subject of private non-profit universities in Riyadh. They argue that academics may include environmental sustainability into their lectures to assist increased awareness about climate change.

Although environmental sustainability is becoming more and more popular, every region is trying to give this issue greater attention. Gardanova et al. (2021) contend that the rapidly developing oil-producing and emerging nations in the Middle East and North Africa (MENA) are placing a strong focus on renewable energy sources and sustainable education. Their study indicates that local authorities and higher education institutions might collaborate to direct them toward a more environmentally friendly growth trajectory. Al-Mahameed et al. (2023) show that environmental sustainability was ingrained in a story that was repeated in practice, serving as their goal for several smaller jobs and initiatives.

RESEARCH METHODOLOGY

This study intends to investigate how students, faculty, and administrative staffs in Oman's higher education institutions perceive environmental sustainability, the degree of their pro-green behavior, the role of higher education institutions in fostering sustainable development through incorporating sustainable related programs, courses and topics, and the challenges, barriers, and impediments that stand in the way of implementing sustainable initiatives in higher educational institutions in Oman. To achieve these objectives, this study uses a quantitative research approach. This method made the results context-dependent and gave educators and academic leaders from various universities a better understanding of how they perceive sustainability activities (Cohen et al., 2013).

After designing the questionnaires, a pilot test has been performed to assess if the questionnaire fits the practical scenario and answers the question this research aims to answer. After collecting repones from 8 respondents, the questionnaire is found to be a valid instrument for the research. The questionnaire then was circulated electronically to all the HEIs in Oman through official emails and personal links. Moreover, some questionnaire surveys were conducted face-to-face with the presence of the researcher. The target respondents were the students, faculty, and administrative staffs currently involved with different HEIs in Oman. A total of 105 completed responses have been collected and analyzed.

DATA ANALYSIS

6.1 General perception about environmental sustainability of the respondents

A total of 10 questions were asked to all participants to capture their perception about environmental sustainability practiced in HEIs. More than 68% of participants either agree or strongly agree with the fact that they are aware about the term 'environmental sustainability'. However, 32% of the respondents are found to not familiar with the term 'environmental sustainability'. This is indeed a large number considering that the participants are from HEIs. The general perception is that those who are involved with HEIs should primarily be aware about 'environmental sustainability' because they are presumed to be the most aware people in the society. More than 52% of the respondents either agree or strongly agree with the statement that their institution's mission and vision are linked to the Sustainability Development Goals (SDG). However, about 31% of the respondents are not sure if their institutions' mission and vision reflect on the SDG, although 5% of the respondents disagree or strongly disagree that their institutions' mission and vision are linked to SDG.

Another notable finding is that about 63% of the respondents either agree or strongly agree with the statement that their respective institutions motivate them to care more about the environment. This is indeed an important finding. However, the alarming fact is that more than one third (37%) of the respondents either agree, strongly agree, or remain neutral on the statement that their education institutions motivate them to care more about the environment. This must be reversed for the greater sustainability of the environment. This statement links to the next finding that majority (76%) of the respondents either agree or strongly agree with the statement that their respective institutions should do more for the environment.

In addition, there is a less agreement concerning the understanding of the SDG targets, the institution's intention to go paperless, and the awareness initiatives undertaken by the respective institutions. A total of 52.7% of the respondents either agree or strongly agree with the statement that they are aware about the SDG whereas 31% of the respondents are neutral and 16% are not aware about the SDG. Similarly, 51% of the respondents either agree or strongly agree that their respective HEIs undertake various initiatives to function 'paperless' whereas 32% are neutral and 17% do not know if their respective HEIs undertake initiatives to be 'paperless'. Although it is highly appreciable that HEIs in Oman strive to be environmentally friendly by being paperless, still a large chunk of the respondents don't know about various initiatives undertaken by their respective HEIs. This implies that it is not enough that HEIs organize various initiatives to be pro-environmental, it is equally important that HEIs disseminate these initiatives in the community by continuous communications so that an increased number of people are inspired and take part in those initiatives.

However, the respondents are not spontaneous in actively taking part in various programs organized by their respective HEIs. For instance, 40% of the respondents remain neutral as to whether they like to willingly take part in the pro-environmental campaign organized by their HEIs, whereas 20% of the respondents are not willing to take part in such initiatives at all. This goes against an all-out effort of HEIs to be environmentally sustainable. Almost the similar number of respondents remain neutral (39%) to the statement that the respective higher education institution encourages sustainable transportation program including car-pooling, the use of public transportation etc. Like before, 19% respondents do not believe that their HEIs encourage them to exercise such environmental practices. On the other hand, less than half (46%) of the respondents either agree or strongly agree with the statement that the HEI they belong to publish sustainability reports periodically. However, 33% respondents remain neutral to the statement that HEIs publish sustainability reports periodically whereas 20% of them either disagree or strongly disagree that their respective HEIs publish sustainability reports periodically. It means the publication of institutional sustainability reports is not widely exercised by HEIs in Oman. Moreover, it is an indication that HEIs should not only prepare and publish their sustainability report at a regular interval, but they should also

involve various stakeholders in preparing and disseminating this information. These results also suggest that respondents are still not actively participating in environmental sustainability initiatives at the same pace.

Table III: General perception about environmental sustainability of the respondents

Questions		SD (%)	D (%)	Neutral (%)	A (%)	SA (%)	Rating
a.	I am aware about the term 'environment sustainability'	6.5	3.7	22.2	40.7	26.9	++
b.	I am aware about the Sustainability Development Goals (SDG)	8.3	7.4	31.5	33.3	19.4	+
c.	Sustainability is part of the mission and vision of my Institution	3	2	30.6	45.4	19.4	++
d.	My institution has undertaken initiatives to go 'paperless'	5.6	12	31.5	40.7	10.2	+
e.	My institution motivates me to care more about the environment	3.7	10.2	23.1	46.3	16.7	++
f.	My institution organizes various programs for creating environmental awareness	5.6	8.3	29.6	42.6	13.9	+
g.	I actively take part in various programs organized by my institution for environmental awareness	4.6	15.7	39.8	25.9	13.9	
h.	My institution encourages sustainable transportation program (such as carpooling, use of public transport etc.)	6.5	14.8	38.9	25.9	13.9	
i.	My institution periodically publishes sustainability reports	6.5	13.9	33.3	36.1	10.2	
j.	My institution should do more for the environment	1.9	2.8	19.4	46.3	29.6	++

Note: SD, D, N, A, and SA indicate strongly disagree, disagree, neutral, agree and strongly agree respectively.

Students' activities and institutional inputs about environmental sustainability

The major respondents of this survey come from students' community. For instance, more than half (55%) of the respondents are students. This part of the survey aims to capture the students' initiatives and the institutional input they receive from their respective HEIs regarding environmental sustainability. Like the general perception described in table III, this part (part three) of the questionnaire was designed with 10 questions to understand students' pro-environmental initiatives and the input they receive from HEIs. Its goal was to find out what their role in environmental sustainability was and how they were doing for achieving it. The results are reported in table IV.

Questions addressing students' willingness and excitement for a clean campus, paperless study materials, excessive use of energy consumption needlessly, and willingness to take more courses on this topic appear to be at the top of the student's interest. For instance, about 80% of students either agree or strongly agree to the statement that asks if students strive to keep their campus clean. The statement that students make efforts to maintain a clean campus was strongly agreed upon by 47.3% of the responding students. Similarly, more than 62% of the responding students emphasize on practicing to be paperless by replacing printing materials with electronic devices. Similarly, 63% of the responding students are keen to avoid unnecessary use of energy. This suggests that students are pro-active in conserving energy in the campus, which indicates a positive aspect of students' pro-environmental behavior in the campus.

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The student section of questionnaire also seeks to investigate if HEIs in Oman provide enough environmental input for students. Although there is a considerable attention whether higher educational institutions can assist students to become more environmentally responsible through offering degrees specializing in environmental sustainability, offering more course and topics on environmental sustainability, and faculty frequently relating contents to environmental sustainability, the results are not as rosy as students' activities toward environmental awareness. For instance, only half of the responding students think (either agree or strongly agree) that their institutions help them to become more environment friendly. This is barely the minimum, considering the sacred responsibility of HEIs worldwide. Similarly, 58% of the responding students either agree or strongly agree with the statement that the faculty members of their departments motivate them to behave environmentally. Understandably, the respective figures should have been much higher than they appear now, suggesting that HEIs have a lot to do in this regard.

Table IV: Students' activities and institutional inputs about environmental sustainability.

For Students only							
	Questions	SD (%)	D (%)	Neutral (%)	A (%)	SA (%)	Rating
a.	I always strive to keep my campus clean	5.4	–	14.9	32.4	47.3	+++
b.	I use tabs/laptops to store my study materials instead of printing them	6.8	12.2	18.9	32.4	29.7	++
c.	I do no overuse or unnecessarily use energy in the campus	4.1	5.5	27.4	35.6	27.4	++
d.	I have studied courses on environmental sustainability	11.0	27.4	23.3	26.0	12.3	
e.	I have studied courses which address topics related to environmental sustainability	9.6	16.4	26	31.5	16.4	
f.	Sustainability is a focus integrated into my degree of study	8.2	16.4	31.5	31.5	12.3	
g.	My institution helps me become more environment friendly	4.1	9.5	36.5	33.8	16.2	+
h.	Faculties of my department motivates me to behave environmentally	5.4	5.4	31.1	45.9	12.2	+
i.	The courses currently offered by my department on sustainability is enough	5.6	15.3	40.3	27.8	11.1	
j.	My department should offer more courses related to environmental sustainability	2.7	2.7	27	41.9	25.7	++

Note: SD, D, N, A, and SA indicate strongly disagree, disagree, neutral, agree and strongly agree respectively.

However, students' response about whether they agree or strongly agree with the statement that their HEIs offer relevant courses, topics, lectures etc. about environmental sustainability is low. For instance, only 36% responding students either agree or strongly agree with the statement that they have studied courses on environmental sustainability. The respective percentage of responding students who either disagree or strongly disagree is more (38%) than those who either agree or strongly agree. The similar scenario is observed with the statement that the responding students have studied courses which address topics related to environmental sustainability. The respective percentage of responding students who either disagree or

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strongly disagree to the above statement (they have studied courses which address topics related to environmental sustainability) is 26% where students who either agree or strongly agree with the statement is 48%.

On the other hand, 44% of the responding students either agree or strongly agree with the statement that sustainability focus is integrated into their degree of study, whereas the percentage of students who either disagree or strongly disagree is 25% for the same statement. Similarly, only 40% of the responding students believe (either agree or strongly agree) that the courses currently offered by their department or college on sustainability are enough, whereas 60% are either neutral, disagree, or strongly disagree to the statement. As a result, most (68%) of the student respondents want (either agree or strongly agree) that their department should offer more courses related to environmental sustainability. This really suggests that the curriculum must be expanded by the educational institution to include more courses. For students to practice and understand more about environment, the higher education institutions are required to address these issues.

faculty activities and inputs about environmental sustainability

Like the above case, a total of 10 questions were created especially for faculty members. Questions concerning their teaching style and the function of their department were also addressed in this section. The results are presented in table V. Results show that teachers' approach to motivating the pupils and their delivery of the material received the best responses. These academics have a stronger interest in teaching environmental sustainability in their relevant courses. For instance, more than 60% of the responding faculty either agree or strongly agree with the statement that they teach topics related to environmental sustainability in their lecture although 17% of the responding faculty don't do so. This shows that the instructors are acting as a conduit for the knowledge to teach the pupils. They also strive to inspire pupils about the subject. Their attention on these issues in a favorable way simply indicates that these faculties are becoming more and more engaged in these topics (environment and sustainability). This is reflected on the fact that 69% responding faculty either agree or strongly agree with the statement that they personally advise/motivate their students to become environmentally friendly. This is praiseworthy given the fact that students are highly motivated by their HEIs in general and faculty members in particular to behave environmentally.

Table V: faculty activities and inputs about environmental sustainability

For Faculties							
	Questions	SD (%)	D (%)	Neutral (%)	A (%)	SA (%)	Rating
a.	My department/college has major/minor in environmental sustainability	5.6	5.6	37	40.7	11.1	+
b.	The department curricular are designed placing required emphasis on environmental sustainability	5.6	5.6	38.9	40.7	9.3	+
c.	I teach course/courses related to environmental sustainability	11.1	14.8	31.5	33.3	9.3	
d.	I teach topics related to environmental sustainability in my lecture	7.5	9.4	22.6	45.3	15.1	++
e.	Some of my research and projects focus on environmental sustainability	7.4	3.7	29.6	35.2	24.1	+
f.	I personally advise/motivate my students to become environmentally friendly	7.4	1.9	22.2	35.2	33.3	++

g.	My department offers enough courses on environmental sustainability	7.4	11.1	40.7	27.8	13	
h.	My department should offer more courses on environmental sustainability	3.8	7.5	30.2	37.7	20.8	+
i.	My institution provides funds for research on environmental sustainability	3.7	5.6	33.3	42.6	14.8	+
j.	My institution appreciates/encourages proposal/suggestions from various stakeholders to make the campus more environmentally sustainable	7.4	1.9	31.5	42.6	16.7	+

Note: SD, D, N, A, and SA indicate strongly disagree, disagree, neutral, agree and strongly agree respectively.

Furthermore, the responding faculty's respective department's major or minor pertaining to environmental sustainability, the department's curriculum indented to emphasis on environmental sustainability, the faculty and department's initiatives toward research and projects on the subject, the number of courses departments offer on environmental sustainability, the funding the HEIs provide for environmental sustainability research, and the department's encouragement of stakeholders to adopt a greener lifestyle all have small but a noticeable impact. For example, 52% of the responding faculty positively responded that their departments/colleges currently offer major/minor in environmental sustainability. In a similar fashion, exactly half of the responding faculty either agree or strongly agree with the statement that their department curricular are designed placing required emphasis on environmental sustainability. It is to be observed that although colleges and department may not have major/minor in environmental sustainability, they should at least link their department curricular placing required emphasis on environmental sustainability because only half of the responding faculty's departments/colleges do so at present. Little more than half of the faculties responded positively that some of their research and projects focus on environmental sustainability. Although this deserves a compliment, the rest half should attempt to contribute toward environment through their research.

However, a much less attention has been placed on how much the respective departments or institutions – aside from individuals – need to get more involved with this issue. Just little more than 40% of the faculty teach course/courses related to environmental sustainability. This can be attributed to the fact that department/colleges do not offer enough courses on environmental sustainability. Only 41% of the responding faculty either agree or strongly agree with the statement that their department offers enough courses on environmental sustainability. As a result, about 60% of the responding faculty either agree or strongly agree with the statement that their department should offer more courses on environmental sustainability. Moreover, 57% the responding faculty think that their institutions provide funds for research on environmental sustainability. A positive note is that about 60% of responding faculty believe that their institution appreciates/encourages proposal/suggestions from various stakeholders to make the campus more environmentally sustainable. Although this is praiseworthy, 40% of the respondents still not sure if their institutions would appreciate/encourage proposal/suggestions from them. This issue has an enormous area for future improvement as far as environmental sustainability is concerned.

administrative staffs' activities and inputs about environmental sustainability

Like the faculty and students, this research seeks to investigate administrative staffs' activities and inputs for environmental sustainability. Like in other categories, a total of ten questions were posed for administrators. Unlike students and faculties who were asked academic related questions, questions for administrative staffs are basically non-academics, and directed to capture their efforts toward environmental sustainability reflected on procurements and designing of various infrastructure facilities including constructions of

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buildings. The results are presented in table VI.

With one exception – the HEIs have a program to identify people or groups as champions for their efforts on environmental sustainability – most of the questions have lower percentages. In general, 51.4% of respondents agree with the statement that their HEIs have a program to identify people or groups as champions for their efforts on environmental sustainability and 17% strongly agree, summing up a total of 69%. This shows that the institutions have a program in place to honor those who work hard on environmental purpose.

Table VI: administrative staffs' activities and inputs about environmental sustainability

For Administrators							
	Questions	SD (%)	D (%)	Neutral (%)	A (%)	SA (%)	Rating
a.	My institution has an environment sustainability center	5.6	19.4	41.7	25.0	8.3	
b.	My institutions' infrastructures are constructed maintaining environmental code	5.7	11.4	40	37.1	5.7	
c.	The institution has taken measures to pursue sustainability in procurement	5.6	2.8	47.2	36.1	8.3	
d.	My institution manages solid waste in the campus properly	5.4	5.4	31.1	43.2	10.8	+
e.	The institution participates in Green/Sustainability rankings	5.4	5.4	37.8	43.2	8.1	+
f.	My institution nurtures a culture of environmental sustainability	5.4	2.7	43.2	43.2	5.4	
g.	My institution is open to receive suggestions from stakeholders to make the campus more sustainable	5.6	–	41.7	33.3	19.4	+
h.	My institution has a committee to monitor environmental sustainability efforts in the campus	2.8	2.8	47.2	38.9	8.3	
i.	My institution undertakes various programs to create awareness among external community about environment	8.3	8.3	44.4	30.6	8.3	
j.	My institution has a program to recognize individuals/groups as champions for their effort on environment sustainability	8.6	8.6	14.3	51.4	17.1	++

Note: SD, D, N, A, and SA indicate strongly disagree, disagree, neutral, agree and strongly agree respectively.

Aside from this, issues like the institution's solid waste management, its participation in sustainability rankings, and its willingness to consider suggestions from stakeholders on sustainability are given somewhat more favorable weight. For example, 54% of the responding administrative staffs positively respond that their HEIs manage solid waste in the campus properly. This genuinely demonstrates as to how the institutions are handling solid waste in an environmentally friendly manner. Similarly, 51% of the responding administrators either agree or strongly agree with the statement that HEIs participate in Green/Sustainability rankings project. Their efforts to participate in the sustainability ranking are likewise very intense. The most encouraging aspect is that they are highly receptive to recommendations from stakeholders for a more sustainable campus. Policymakers will be inspired to take greater effort in the

direction of a greener future.

However, the questions that are not enthusiastically agreed upon are those that deal with the institutions having a sustainability center, building, and constructing infrastructure maintaining environmental code, pursuing sustainability in procurement, institutionally fostering sustainability culture, existing of specific committee responsible for overseeing this issue, and outreach programs aiming to outside community. It suggests that institutions lack a suitable monitoring committee, a designated sustainability center, and a sustainability culture. Environmental sustainability would have increased if these actions were existed. Additionally, if HEIs run initiatives to raise awareness among the public, this will significantly increase awareness of the issue. The university should design its campus with more environmentally friendly features, as seen by the decreased focus on infrastructure maintained by environmental codes.

CONCLUSION

7.1. Major findings

The major findings of the research are as follows:

(a) The survey respondents are aware about the term ‘environmental sustainability’. Moreover, majority of the respondents agree that their HEIs link the sustainability to their mission and vision. This will eventually pave the way for achieving broader sustainability goal of the country. The respondents further positively replied that HEIs motivate them to care more about the environment.

(b) The second major findings are related to student respondents who constitute the major portion of the sample. The survey results show that students always strive to keep their campus clean through different means such as managing study materials electronically instead of printing them. In addition, students avoid the use of energy unnecessary. Another major finding is that faculties and the department motive students to behave environmentally.

(c) The third important finding of the research is related to responding faculties. Most of the surveyed faculties have stated that they spontaneously advise or motivate their students to become environmentally friendly.

(d) The fourth important finding of this research is related to the administrative staffs of the HEIs in Oman. It has been found that HEIs have a program to recognize individuals/groups as champions for their effort on environmental sustainability. Hence, like other sectors, the HEIs in Oman should recognize their environmental champions.

7.2 Policy recommendations

(a) Although it has been found through the survey of this study that stakeholders related to HEIs in Oman are aware about the term ‘environmental sustainability’ there is little consensus that these stakeholders are ready to take part in various programs organized by the HEIs for environmental awareness. There is a lot of works to be done in this respect by higher education institutions in Oman. Various initiatives need to be put in place for students, faculties, and administrative staffs to motivate them to be involved more with environmental related campaigns and programs organized by HEIs. Besides awareness creation, some tangible policies can click as well.

(b) Our second recommendations are based on the student population who do not positively state that they have studied courses on environmental sustainability because majority of the students are of the opinion that the courses currently offered by their department on sustainability are not enough. Moreover, students are

not sure if their institutions put sustainability as a focus and integrate into their degree of study. The HEIs can scrutinize the need for including programs and courses that focus on environmental sustainability.

(c) Like the student population, faculties also believe that their departments do not offer enough courses on environmental sustainability. Hence, they do not have enough courses related to environmental sustainability to teach, despite they are interested. Moreover, the faculty respondents do not agree or strongly agree that their department curricular are designed placing required emphasis on environmental sustainability. Thus, HEIs in Oman can conduct a feasibility study as to whether they need more programs/courses on environmental sustainability.

(d) Most of the responding administrators are of the opinion that they do not have an environment sustainability center. The future of the planet critically depends on how effectively we can tackle climate change problem. In this regard HEIs can show the path of environmental citizenship by introducing an environment sustainability center. Specially, universities in Oman are large enough to accommodate an environment sustainability center. This center can be used in multiple beneficial ways.

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