

Article

## The Impact of Higher Education Institutions on Sustainable Development: A Field Study

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### CITATION

Alkhalidy. A. (2025). The Impact of Higher Education Institutions on Sustainable Development: A Field Study, *Intercontinental Social Science Journal*. 1(2), 131-145. <https://doi.org/10.62583/8fy7rv14>  
Received 02 Jan 2024  
Accepted: 25 Feb 2024

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**Abstract:** This paper looks into how institutions of higher learning can facilitate sustainable development, especially in the culture of environmental sustainability among the university students. Sustainable development has been a significant issue in the world in the recent years owing to the growing environmental issues such as the climate change, depletion of resources and environmental degradation. In this case, the centre stage of creating awareness, defining values, and promoting environmental responsibility behaviour among students is expected to be played by the higher institutions of learning. The research paper assumed a descriptive survey research design and developed a structured questionnaire to sample 30 male and female students of the Faculty of Arts at Yarmouk University in the academic year 2023/2024. The tool was used to assess the level of awareness of the students on sustainability of the environment, the university response to the culture of sustainability, and the perceived barriers to the spread of the sustainability culture. The analysis of data was conducted in the framework of descriptive statistics, that is, means, standard deviations, frequencies and percentages. The results show that the environmental awareness of sustainability is relatively high among the students. The findings also reveal that the university has a great role of disseminating sustainability culture using educational materials, sensitization efforts and institutional reinforcement. Nevertheless, a number of barriers were observed, such as the insufficient integration of environmental concerns into the academic programs, as well as a low level of student participation in the programmes regarding sustainability. The paper concludes that institutions of higher learning play a great role in fostering sustainable development yet their input can be enhanced by reforming the curriculum, offering more awareness programmes and participation of more students in environmental practices.

**Keywords:** *Sustainable development, higher education, environmental sustainability, sustainability education, environmental awareness, university students*

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## **Introduction**

The concept of sustainable development has been one of the most hot topics in the world over recent decades as environmental pressures have been mounting up like challenges in climate change, resource depletion, and environmental degradation. These issues have brought up grave questions about the viability of natural resources and the future of the human societies. Due to this, the desire to pursue development approaches that can guarantee the balance between economic growth, social well-being, and environmental protection has increased globally (Helm, 2020; Mahalik et al., 2021).

The idea of sustainable development underlines the sensible utilization and administration of the environmental resources to fulfill the current requirements without affecting the future generation capacity of fulfilling their needs. Nevertheless, the quick process of industrialisation and environmentally inappropriate human actions have exerted a strong strain on natural ecosystems that have caused the environmental disproportions and escalated worldwide threats (Guo et al., 2023; Mishra et al., 2021). These environmental issues do not just limit to environmental impacts but also to the social and economic aspects, such as food security, human health, and social stability (McMichael, 2017; Cianconi et al., 2020).

Higher education institutions have risen to the occasion in these challenges to become major players in ensuring sustainable development. The role of universities is important in creating knowledge, values, and equipping the new generations with mechanisms to resolve complicated problems facing the world. Higher education institutions can help raise awareness of the environment through teaching, research, and community work, and promote sustainable practices in students and the society in general (Amoako-Gyampah et al., 2021).

Also, universities are the place where students learn not only the academic knowledge but also the attitudes towards sustainability and behaviour. Environmental campaigns, educational programmes and institutional policies have the potential to play an important role in determining the awareness of students to environmental issues and their readiness to embrace sustainable practices. Nevertheless, the success of tertiary educational establishments in facilitating sustainability differs according to the curriculum design, commitment by the institution and student participation.

Although the role of universities in sustainable development is becoming more and more recognized, there are still a number of challenges. In most situations, the environmental problems are not properly incorporated into the academic programs, and students might be restricted in their involvement into the

sustainability programmes. Also, the university might not have institutional strategies that would help in promoting sustainability culture in the university environment.

Thus, the research aims to observe how higher education institutions can facilitate sustainable development, and in particular, the culture of environmental sustainability among the students of the universities. It also seeks to establish the issues that impede the successful spread of sustainability culture in the university setting.

### **Literature Review**

The concept of sustainable development has become a growing topic of interest in research and policy-making as it is vital in dealing with the issue of the environment, society and economy. It is well known that higher education institutions play significant roles in the attainment of sustainable development due to their role in education, research and community participation. The role of universities in conveying knowledge is not confined to that of influencing the attitude and the behaviours of students in regard to sustainability (Amoako-Gyampah et al., 2021).

A number of researches have investigated the importance of the universities in instilling the culture of environmental awareness and sustainability amongst students. As an example, Al-Sayyed (2021) examined the views of leaders of Saudi Arabian universities on the institutional roles in greening the environment. The results showed that the sustainability responsibilities of universities are performed on a medium level and that they require institution-level commitment and strategic planning.

On the same note, Al-Maafa (2020) examined the extent of environmental consciousness among students at Nahrawi University and discovered that the level of environmental consciousness was not that high and that the institutions had few efforts towards fostering the environmental awareness of students. The paper has underlined the necessity to incorporate environmental education in academic programmes and raise awareness campaigns in higher institutions of learning.

Talha (2020) investigated the importance of environmental culture in the attainment of sustainability in the University of Baghdad and concluded that the attainment of positive environmental behaviour ought to be integrated in three aspects of education, awareness and practical activities. The research was able to emphasize on the need to instill long-term environmental values in students to promote sustainability of behavioural changes.

In a similar regards, Abdulalim (2020) examined the topic of sustainable development culture among university students based on the context of Vision 2030 in Egypt. The results showed that students have

diverse awareness of sustainability depending on the various dimensions, and a special concern of enhancing social and environmental sustainability culture.

Moreover, Al-Najjarn (2019) explored how the training programmes affected the environmental awareness of students and their skills in volunteer work. The findings showed that structured training programmes have the potential of improving the environmental awareness of the students and also promoting them to engage in activities related to sustainability.

The issues surrounding the promotion of sustainability in the level of higher education have also been reported other studies. Sabaha (2019) observed that the awareness of students in the University of Hail of climate change is low, which is partially explained by the lack of inclusion of environmental issues in the educational programmes. These results imply that universities should take more integrated and holistic approaches to sustainability education. On the whole, the literature that has been reviewed suggests that institutions of higher learning are instrumental in the culture of sustainability. Their effectiveness however depends on a number of factors such as the design of the curriculum, policies in the institution, training programmes and the engagement of the students. Although earlier research has offered some useful information, additional research is still necessary to analyze the way in which universities can be more effective in disseminating sustainability culture especially in the various social and educational settings.

### **Research Problem**

It has made the environmental issues very complex due to the interplay between human activities and the natural ecosystems. The issue of degradation of the environment due to unsustainable activities, especially in the industrial and developmental sphere, poses a threat to the well-being of humans and to the development in the long run (Tawakel, 2017). This has made environmental protection and sustainable management of resources to be critical requirements in attaining sustainable development. The institutions of higher learning will be required to be more proactive on dealing with these issues by creating environmental awareness and creating a culture of sustainability among the learners. Nonetheless, regardless of this expectation, there is still a gap in the knowledge of how much universities are effective in creating sustainability culture. Even in most instances, environmental education is not necessarily built into the academic programmes, and responsibility of students in activities relating to sustainability may be constrained.

In this respect, the issue of the research is to investigate the role of institutions of higher learning in instilling the culture of environmental sustainability and to define the barriers to the realization of such performance.

### **Objectives of the Study**

#### **This study aims to:**

1. Examine the current level of environmental sustainability culture among university students.
2. Assess the role of higher education institutions in promoting sustainability culture.
3. Identify the challenges that hinder the dissemination of environmental sustainability culture within universities.
4. Provide recommendations to enhance the role of higher education institutions in achieving sustainable development.

### **Significance of the Study**

This research is important in the fact that it contributes to both theoretical and practical aspects of sustainable development.

Theoretically, the research gives a framework of examining how higher education can be linked to facilitation of sustainability culture among students. It adds to the literature on the subject as it emphasizes the role of universities as a social and environmental change agent.

In practical terms, the results of this research can help policy makers, university administrators, and educators formulate measures to make higher education institutions greener and environmentally friendly through the promotion of sustainable initiatives. The findings can also encourage the activities that focus on the enhancement of environmental policies and the introduction of sustainability in academic programs.

### **Research Questions**

1. The study seeks to answer the following questions:
2. What is the level of environmental sustainability culture among university students?
3. What is the role of higher education institutions in promoting sustainability culture?
4. What are the challenges that hinder the dissemination of sustainability culture within universities?

## **Methodology**

### **Research Design**

This research will use a descriptive research design since it will analyse how the higher institutions of learning can have a positive impact on increasing the culture of environmental sustainability among the university undergraduate students. Descriptive approach is suitable in the study of social phenomena in their natural surroundings and identifying patterns, relationships and trends without controlling variables. It will permit a systematic evaluation of the perception and experience of the students at the university in terms of sustainability.

### **Population and Sample**

The population of the study will be students of the Faculty of Arts of Yarmouk University of the 2023/2024 academic year.

A non-random (purposive) sampling method was used to select a sample of 30 students since the participants were selected according to accessibility and applicability to the study objectives. This method is suitable when there is need to conduct an in depth study of a given group especially in exploratory studies. The sample used consisted of both genders (male and female) and there was a balance in the perspectives. Age and gender were also taken in the description of the sample in terms of demographic factors.

### **Data Collection Instrument**

A structured questionnaire was used to collect data in this study with its own specific design. The questionnaire had a number of sections: In the former section, the demographic data were provided (e.g. gender, age, academic performance). The second part assessed the environmental sustainability culture awareness of students. The third part evaluated the effectiveness of the university in imparting the sustainability culture. In the fourth section, the obstacles to the propagation of the sustainability culture were discussed. The fifth part investigated prospective views to the improvement of sustainability culture in the university setting. The measure of the items was in a Likert scale to measure the degree of agreement of the participants.

### **Validity and Reliability**

To ascertain the validity of the tool, a group of academic scholars in the sociology and environmental sciences reviewed the questionnaire. Their response was utilized in ensuring the clarity, relevance and appropriateness of the items.

Cronbach alpha coefficient was used to measure the reliability of the instrument and this was found to be an acceptable level of internal consistency of the questionnaire and this confirms that it is appropriate in data collection and analysis.

### **Data Collection Procedure**

The participants were given out the questionnaire in the academic year 2023/2024. The participants received the information about the aim of the study and were guaranteed that the answers would be confidential and would be used only on the scholarly grounds. It was also voluntary and an informed consent was made before data was collected.

### **Data Analysis**

The data obtained were analysed by the Statistical Package of the Social Sciences (SPSS). The sample was characterized and the research questions were answered by the use of descriptive statistical procedures such as frequencies, percentages, means and standard deviations.

These statistical methods enabled to get a holistic picture of how students felt about the environmental sustainability culture and how higher institutions of learning facilitated this aspect.

### **Table 1**

*Distribution of the Study Sample According to Demographic Variables*

<b>Variable</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Male	14	46.7%
	Female	16	53.3%
	Total	30	100%
Age	20–24	7	23.3%
	25–29	9	30.0%
	30–34	8	26.7%
	35+	6	20.0%
	Total	30	100%

The demographic features of the study sample are found in Table 1. The findings are quite even with male (46.7) and female (53.3) participants. As per age, the highest percentage of participants are between the 25 and 29 age bracket (30.0%), and then the 30 and 34 age group (26.7%), which means that the sample is composed of young adults in higher education. This distribution gives a proper foundation upon which the perceptions of sustainability among the students can be studied in terms of the university environment.

**Results**

**First Research Question Results:** What is the level of environmental sustainability culture among students?

**Table 2**

*Environmental Sustainability Awareness among University Students*

Rank	Item	Mean	Standard Deviation	Level
1	I preserve trees and plants on campus	4.12	0.92	High
2	I recognise the importance of clean technologies	4.07	0.98	High
3	I have sufficient knowledge of environmental concepts	4.00	1.66	High
4	I participate in campus cleaning activities	3.64	1.69	Moderate
5	I follow environmental news and issues	3.63	1.85	Moderate
6	I do not attend environmental seminars	2.99	1.89	Low
7	Courses do not adequately address environmental issues	2.80	1.93	Moderate
8	I do not care about environmental cleanliness	3.29	1.66	Moderate
<b>Overall</b>	—	<b>3.58</b>	—	<b>High</b>

Table 2 shows that the students have a rather good level of environmental awareness and the overall mean level makes 3.58. The best-rated one is associated with maintaining the plants in campus (M = 4.12), which is a good sign of being environmentally responsible among the crowd of students. There were also high scores in the knowledge of clean technologies and environmental concepts and this indicates that the students have well-grounded background knowledge in sustainability. Moderate ratings were however identified in the participation in environmental activity as well as environmental involvement and low ratings were identified on the attendance of environmental seminars. It implies that in spite of the comparatively high awareness, the practical involvement and participation are still low.

**Second Question Results:** What is the role of the university in promoting sustainability culture?

**Table 3**

*Role of the University in Promoting Environmental Sustainability*

Rank	Item	Mean	Standard Deviation	Level
1	Availability of environmental resources in the library	4.55	0.72	High
2	Encouraging environmental initiatives	4.46	0.88	High
3	Faculty awareness of environmental standards	4.43	0.90	High
4	Organisation of environmental events	4.38	0.94	High

Rank	Item	Mean	Standard Deviation	Level
5	Availability of awareness posters	4.36	0.98	High
6	Lack of environmental newsletters	4.30	1.12	High
7	Limited encouragement for participation	4.28	1.67	High
8	Lack of field visits	3.64	1.78	Moderate
9	Lack of competitions	3.63	1.86	Moderate
10	Weak support for innovation	2.32	1.90	Low
<b>Overall</b>	—	<b>4.05</b>	—	<b>High</b>

According to Table 3, the university contributes much to the sustainability as the overall mean is 4.05. The availability of environmental resources is the most rated aspect, which means that there is a high institutional resource in terms of access to information. Nevertheless, it was noted that some constraints existed, especially where activities of the student engagement like field visits, competitions, and support of innovation were concerned. These results indicate that the university has a good informational and institutional support, but the experiential learning and student participation should be improved.

**Third Question Results:** What are the challenges facing sustainability culture?

**Table 4**  
*Challenges in Promoting Sustainability Culture*

Rank	Item	Mean	Standard Deviation	Level
1	Lack of connection between curricula and local issues	4.00	0.82	High
2	Weak collaboration with institutions	3.90	0.95	High
3	Absence of sustainability courses	3.73	0.99	High
4	Lack of training for university leadership	3.70	1.04	High
5	Limited awareness programmes	3.67	1.18	High
6	Lack of student environmental groups	3.53	1.20	Moderate
7	Weak student awareness	3.38	1.29	Moderate
8	Absence of a clear sustainability strategy	4.37	2.32	High
9	Weak community participation	2.10	1.80	Low
<b>Overall</b>	—	<b>3.44</b>	—	<b>Moderate</b>

According to Table 4, there are some issues that prevent successful propagation of sustainability culture. The greatest weakness is the fact that there is no integration of the academic programs with the local environmental concerns, a fact that underscores the disconnect between the theory and practice. The other important issues are lack of sustainability oriented courses, lack of training as well as poor

institutional strategies. These results indicate that institutional and pedagogical constraints are still significant barriers to the process of attaining sustainability objectives in institutions of higher learning.

### **Discussions**

This research paper was also meant to analyse how the institutions of higher learning can be used to install the culture of environmental sustainability among the university students, and to determine the main challenges of this process. The results will be of significant value to the degree of awareness of students, institutional responsibilities of universities, and frustrates that inhibit successful spread of sustainability culture.

As far as the first research question is concerned, the findings suggest that the level of environmental awareness among the students is comparatively high. This observation implies that college students have a fundamental knowledge of environmental concerns and they tend to be made aware of the significance of being green. Nevertheless, the findings also indicate that the practical participation of the students is rather moderate in terms of the environmental activities and the attendance to the events devoted to the environmental awareness. This simply suggests that there is a disconnect between the knowledge and behaviour with the awareness not necessarily translating to the engagement.

These are in line with the existing studies. As an example, Al-Maafa (2020) has noted that practice in environmental awareness is restricted in many cases with theoretical knowledge of students. On the same note, Talha (2020) highlighted that not only does one have to be aware of the need to create sustainable behaviour but also to engage in it and change behaviour. This suggests the necessity of universities to cease being speculative and offer possibilities of experience.

In relation to the second research question, the results demonstrate that universities can become actors that can foster the sustainability culture, especially with regard to the supply of educational material, awareness efforts, and academic assistance. The mean scores of items in terms of institutional support are very high which imply that a significant effort is made by universities in increasing awareness of students.

These findings are in line with the results of Al-Sayyed (2021), who has discovered that universities play a moderate role in sustaining but that they need more strategic integration. Equally, Abdulalim (2020) highlighted that institutional commitment is crucial in promoting the culture of sustainability among the students. Nevertheless, even without these positive attempts, some weak aspects were found in the current study, especially the student engagement, innovation, and practical activities (field visit and environmental competitions).

In regard to the third research question, the results demonstrate that there are a number of challenges that impede the successful practice of sustainability culture in institutions of higher learning. The most noticeable issue is the absence of fusion of academic programs and local environment concerns. This observation shows that there is a gap between theory and practice, and that this gap restricts students to gain practical sustainability skills.

Other obstacles comprise lack of specialisation in sustainability courses, lack of training and insufficient institutional strategy. These results are also in line with those of Sabaha (2019) that stated that lack of curriculum integration and institutional support is a contributor to low environmental awareness.

In general, the results indicate that educational institutions of higher learning have a significant role in ensuring sustainability, but their influence is limited by institutional and educational barriers. Universities must embrace broader strategies that can incorporate sustainability in the curriculums, motivate students to participate and have commitment of the institutions.

In a more general sense, the research confirms that sustainable development can not be established by means of awareness only, it has to be comprised of education, real-life involvement, and institutional backing. College institutions should thus be a force of change by promoting knowledge and behaviour, as regards sustainability.

### **Conclusion**

This paper has discussed how universities can encourage the culture of environmental sustainability among higher education institutions. The results show that the level of environmental awareness among the students is relatively high, especially when compared to the responsible environmental behaviour at the university environment. This awareness however does not necessarily translate into action meaning there is a disparity between the knowledge and the practice.

The findings also show that universities have a significant role in ensuring sustainability by providing learning materials, sensitization, and educational assistance. Nonetheless, a number of obstacles are still present such as the lack of sustainability integration into the academic programs, lack of student interest and lack of an extensive institutional policy.

Generally, the paper affirms that tertiary institutions of learning are major players in sustainable development. Still, their effect can be much more profound with more integrated and complex strategies of education and practice coupled with institutional commitment.

**Implications**

This study has a number of implications to policy and practice.

Educationally, the universities are expected to incorporate concepts of sustainability into academic programs in various fields in a better way. This would make students acquire theoretical knowledge as well as practical expertise in sustainability.

Institutionally, the institutions of higher learning are encouraged to intensify their presence by ensuring that they encourage student participation in terms of environmental programs, fieldwork and innovation based courses. The gap between awareness and behaviour can be bridged by providing more opportunities to experience learning.

Policymakers are to encourage the creation of institutional policies that would facilitate the sustainability in universities. This covers the provision of resources, interdisciplinary cooperation as well as partnerships with other organisations.

**Limitations**

Although this research is beneficial, there are a number of limitations that this study should take into consideration.

- To begin with, the research had a very small sample of 30 students in one university and this might be a limitation to the generalisation of the results. The future research should consist of a larger and more diverse sample in more institutions.
- Second, the researchers used self-reported questionnaire that is prone to response bias. The respondents could have answered in a socially desirable way instead of giving answers that represent their behaviour or attitudes.
- Third, the descriptive research design does not provide the possibility to determine causal connection of variables. Additional information on the emergence of sustainability culture over the period may be presented by longitudinal or experimental research.

**Recommendations**

The research findings allow making the following recommendations:

- Incorporate the idea of sustainability in higher education programs in every single subject.
- Increase the involvement of students in environmental activities by conducting workshops, field trips and community participation activities.

- Formulate effective organizational policies on how to make higher education institutions more sustainable.
- Train educational personnel on sustainability training.
- Recommend the continuation of researches with bigger samples and mixed methods to learn more about the sustainability culture.

**Conflict of Interest:** The authors declare that there is no conflict of interest related to the publication of this research.

**Funding Statement:** This research received no specific grant from any funding agency, institution, or organisation.

**Data Availability Statement:** The data supporting the findings of this study are available from the corresponding author upon reasonable request.

**Acknowledgements:** The authors would like to express their sincere appreciation to all the people who participated in this study and contributed their time and insights to support the research.

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