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Students' Opinions About the Requirements for Najran University to Become a Green University

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Abstract

The purpose of this research report was to find out what the students thought about the conditions for making Najran University a green university. In order to accomplish the study's objective, 570 male and female students were administered a questionnaire that was created using the descriptive technique. The investigation produced a number of findings, the most significant of which are: Students' replies to the study sample about what would be needed to make Najran University a green university yielded an agreement score of (3.83). With the exception of the first axis and the questionnaire as a whole, there are statistically significant differences in the replies provided by the students based on the gender variable (males and females). Regarding all axes of the questionnaire, there are statistically significant differences between students' responses according to the academic level variable (first - third / fourth - sixth / more than sixth) in all axes of the questionnaire except for the questionnaire as a whole. There are statistically significant differences between student responses according to the college specialization variable (theory - practical).

Keywords: Green University, Requirements, Students.

INTRODUCTION

Education represents the decisive factor in achieving sustainable development and is no longer a formal matter. Developed and developing countries realize the real role of education in bringing about development, and awareness of the importance of sustainable development, and universities in order to bring about development. There is an urgent need for real, comprehensive reforms in order to prepare individuals with high university qualifications to be able to achieve sustainable development. Efficiently and producing effective scientific research in a way that contributes to solving society's problems and advancing it towards sustainable development, as well as spreading awareness among members of society to contribute to meeting the requirements of sustainable development, (Ahmed, 2022, 491) The importance of universities shifting to sustainable development is highlighted, and green universities are directed to raise awareness of the role Green economy in bringing about development in societies.

There are many studies that addressed students and their opinions about transforming their universities into green universities, and these studies include the following:

Al-Saikhan, 2022: A study The purpose of the study was to determine the sustainability perceptions of Saudi university students as well as the degree to which the average responses of study participants regarding the actual level of sustainability knowledge among students varied statistically significantly based on the specialization and university variables. As the study demonstrated, it employed the descriptive method. The findings demonstrated that Saudi university students' perceived level of sustainability understanding was moderate. The findings also demonstrated that the average replies of the students in the study sample differed in a statistically significant way. Additionally, they demonstrated that there were no statistically significant variations in the sample of students' responses with varying specializations.

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(2022) S. Rakhmetullina et al. The overuse of all natural resources, environmental deterioration, water and food security, climate change and energy security, and other urgent environmental issues are some of the environmental difficulties we face today. The foundation for D.Serikbayev EKTU's strategic strategy to preserve the campus's environmental sustainability is its participation in the Green Metric global ranking. In addition to earning EKTU a respectable ranking of 123rd out of nearly 1000 universities worldwide, methodical efforts to enhance the Green Metric questionnaire's indicators also made it possible to raise the percentage of buildings that use "green" and "smart" campus technologies, which lowers energy and resource consumption. The outcomes in the areas of energy and climate change demonstrate that deliberate efforts to raise the rating's indicators can result in the sustainability and environmental friendliness that are sought after. Keywords: Green Office, Green Metrics questionnaire, Energy conservation, and strategy.

Al-Balushi and others, 2022 Concerns about risks and threats are still present, but environmental issues are of great concern to people worldwide. Environmental issues have gained increased national and international attention in recent decades. Of particular interest is the green economy, a branch of environmental consciousness that seeks to promote sustainable development without endangering the environment by lowering ecological hazards and scarcity. In order to evaluate students' knowledge, attitudes, and practices regarding the green economy, the current study examined green economy awareness among higher education students in Oman in general and Sultan Qaboos University (SQU) in particular. All nine university institutions' students were given a standardized questionnaire, which was used to gather data. The majority of respondents were aware of the notion of the "green economy," according to the descriptive data analysis. Although the notion was generally well-understood and understood, there were still some misunderstandings and gaps in understanding regarding certain other subjects. The Chi-square test, WAS, and factor analysis were among the statistical tools employed to examine potential disparities in the perceptions of male and female participants, as well as their academic backgrounds and majors.

The Study Problem

From the above, the problem of the study becomes clear to us in the following main question:

What are the opinions of the study sample of students about the requirements for Najran University to become a green university?

The following sub-questions branch out from it:

- What are the opinions of the study sample of students about the requirements for Najran University to become a green university?
- Are there statistically significant differences between the study sample members according to the variables (gender - college major - academic level)?
- What are the most important results of the study on the requirements for Najran University to transform into a green university?

The Importance of Studying

The importance of the study stems from the following:

A- Theoretical importance: Through this study, the most important opinions of the study sample of students about the requirements for transforming Najran University into a green university are identified, as well as studying the most important obstacles to transforming Najran University into a green university.

B- Practical importance: Through this study, a set of recommendations and proposals are reached that help develop a proposed vision for transforming Najran University into a green university.

Objectives Of the Study

- This study aims to achieve the following:

1-Getting to know the opinions of the study sample of students about the requirements for Najran University to become a green university.

2- Coming up with a set of results that would help develop a proposed vision for transforming Najran University into a green university.

STUDY METHODOLOGY

The study employs a descriptive technique that is appropriate for the subject matter given its goals. A survey instrument was developed to gather information regarding the viewpoints of the student study group regarding the prerequisites for Najran University to become a green university.

The Limits of The Study

Objective limits: The study addressed the opinions of the study sample of students about the requirements for Najran University to become a green university.

Human Limits: The study tool was applied to a sample of students at Najran University.

Time limits: In the first semester of 1445 AH, the field study was conducted.

Spatial boundaries: The field study was applied to students at Najran University.

Field Study

-Aim of the study:

The field study aims to reveal:

- Getting to know students' opinions about the requirements for Najran University to become a green university.

- Through the results, Najran University will transform into a green university.

The Study Sample

The study tool (questionnaire) was applied to a random, representative sample of students at Najran University, where the original population of the sample reached (23,233) students. The link to the questionnaire was distributed electronically and made available for application for 30 days during the first semester of the academic year 1445 AH. Responses reached 570 students at a rate of 2.45% of the original community. This number represents the original study population (Krejcie, R & Morgan, D, 1970).

Study Tool

The study tool was a questionnaire addressed to students at Najran University, and it contained (45) statements. The statements were distributed into six axes as shown in the following table:

Table (1) Distribution of questionnaire statements

Phrase numbers	Number of phrases	Study topics	No
1 - 16	16	Infrastructure requirements	1
23 – 17	7	Educational requirements	2
27 – 24	4	Community service required	3
32 – 28	5	Energy saving requirements	4
40 -33	8	Obstacles to implementing the green university	5
	40		

It is clear from Table (1) that there is no balance between the number of statements in each axis, as imposed by the questionnaire axes.

Honesty of Arbitrators

In order to get feedback on the study questionnaire's usefulness for students and how well the phrases depict each of the axes, the researcher gave it to a panel of education academics who served as arbitrators. The percentage of agreement of the judges on the extent of representation of those expressions was calculated, so that the expressions that obtained a percentage were retained. Agreement of 87% or more, and some statements were modified according to what was suggested by the arbitrators. In its final form, the questionnaire reached (40) statements.

Calculate the Stability Factor

Reliability was calculated using Cronbach's alpha equation and is shown in the following table:

Table (2) Reliability value with Cronbach's alpha reliability coefficient for the questionnaire and its axes

Stability value	Study topics	No
0.929	Infrastructure requirements	1
0.954	Educational requirements	2
0.944	Community service required	3
0.810	Energy saving requirements	4
0.828	Obstacles to implementing the green university	5
0.964		

It is clear from Table (2) that the reliability value is based on the Cronbach's alpha reliability coefficient for the questionnaire as a whole (0.964), which is a high reliability coefficient that can be relied upon in applying the study tool.

Table no (3) Divide into Likert scale categories Pentagram (limits of average responses)

Category boundaries		Category	No
To	from		
1.80	1.00	Very disagree	1
2.60	1.81	not agree	2
3.40	2.61	Neutral	3
4.20	3.41	Agree	4
5.00	4.21	Very agree	5

The length of the range was used to obtain an objective judgment on the average responses of the study sample items, after processing them statistically.

Field Study Results and Their Interpretation

First: To answer the first question of the field study, which is: What are the opinions of the study sample of students about the requirements for Najran University to become a green university? This is shown by the following:

1- The first axis: Table (4) shows the responses of the study sample of students regarding the first axis

Table (4): Responses of the study sample regarding the first axis

No	Ferries	Responses					Relative weight	Approval level	Ranking
		Very agree	agree	neutral	not agree	Very disagree			
1	You go to university in a private car	262	200	50	42	16	4.14	Agree	1
2	The university administration applies environmental rules and laws to ensure environmental sustainability and green transformation .	152	262	70	70	16	3.81	Agree	6

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3	The university provides training programs on environmental sustainability and green transformation .	138	216	84	114	18	3.60	Agree	10
4	All university facilities provide the environment and support green transformation	118	262	66	92	32	3.60	Agree	10
5	The university provides energy-efficient mass transportation .	132	264	80	24	70	3.63	Agree	9
6	The distances between the university facilities are close and support movement without transportation	112	150	88	92	128	3.04	Neutral	12
7	The university provides energy-efficient buses	132	190	96	114	38	3.46	Agree	11
8	All university transactions do not need to be relocated to the university administration .	174	178	148	40	30	3.74	Agree	7
9	The university provides large green spaces	168	202	96	70	34	3.70	Agree	8
10	There are garbage sorting bins in all university facilities (jugs - glass -.....)	288	148	50	18	66	4.00	Agree	2
11	There are tools in the restrooms that support water saving .	226	182	82	80	0	3.97	Agree	3
12	When constructing buildings, the university takes into account compliance with environmental sustainability and green transformation standards .	188	224	66	90	2	3.97	Agree	3
13	The university is keen to transfer successful global experiences and expertise in the field of environmental sustainability and green transformation .	154	256	90	70	0	3.86	Agree	5
14	The university implements training programs for faculty members on environmental sustainability and the green university	166	274	34	94	2	3.89	Agree	4
15	The university holds introductory meetings in the field	182	242	34	112	0	3.86	Agree	5

	of environmental sustainability and green transformation .								
16	University buildings take into account people with special needs .	222	220	68	26	34	4.00	Agree	2
							3.76	Agree	

It is clear from Table (4) that the average responses of the study sample on the first axis came with a score of (3.76) (Agree), and the phrase (you go to university in a private car) came as the highest response with a score of (4.14) (Agree). This indicates that most students use their cars. Especially for going to university, which increases the cost of energy used in transportation, and the phrase (the distances between university facilities are close and supports transportation without means of transportation) was the least responsive with a score of (3.04) (Neutral), which makes it difficult to save the energy used for transportation within the university, and the university does not provide means Frequency transmission saves energy, which represents one of the requirements for transitioning to a green university.

2- The second axis: Table (5) shows the following:

It is clear from Table (5) the responses of the study sample of students regarding the second axis:

Table (5): Responses of the study sample regarding the second axis

No	ferries	Responses					Relative weight	Approval level	Ranking
		Very agree	agree	neutral	not agree	Very disagree			
17	I studied courses related to environmental education and green transformation .	144	200	50	126	50	3.45	Agree	7
18	The devices used in teaching activities are energy efficient	116	284	68	102	0	3.72	Agree	3
19	The university is committed to periodically reviewing educational programs to ensure environmental sustainability and green transformation	100	314	64	92	0	3.74	Agree	2
20	The university encourages the development of new compulsory courses that support environmental sustainability and green transformation .	150	250	78	92	0	3.80	Agree	1
21	The university supports teaching activities to implement environmental sustainability and green transformation .	120	294	64	92	0	3.77	Agree	4
22	The university supports extracurricular activities to implement environmental sustainability and green transformation .	104	288	70	106	2	3.67	Agree	6
23	The university links students' graduation projects to environmental sustainability and green transformation .	104	294	66	106	0	3.69	Agree	5
							3.69	Agree	

It is clear from Table (5) that the average responses of the study sample regarding the second axis came with a score of (3.69) (Agree), and the phrase (the university encourages the creation of new compulsory courses that support environmental sustainability and green transformation) came as the highest response with a score of (3.804) (Agree), which indicates that The university follows a good pattern in transforming into a green university and sustainable development through education by providing courses for students to study that revolve around the development and protection of the environment, and the phrase (I studied courses related to environmental education and green transformation) is the lowest response with a score of (3.45) (Agree). This confirms the necessity of providing academic courses. Which supports environmental education and green transformation and is one of the university's requirements courses.

3-The third axis: Table (6) shows the following:

Table (6) shows the responses of the study sample of students regarding the third axis

Table (6): Responses of the study sample regarding the third axis

No	Ferries	Responses					Relative weight	Approval level	Ranking
		Very agree	agree	neutral	not agree	Very disagree			
24	The university holds research partnerships with sectors of society in the field of environmental sustainability and green transformation .	158	218	146	46	2	3.84	Agree	1
25	The university provides various cultural activities to raise community awareness about environmental sustainability and green transformation .	132	256	76	104	2	3.72	Agree	3
26	The university is keen to link the objectives of the strategic plan with the development goals of environmental sustainability and green transformation .	132	252	126	42	18	3.76	Agree	2
27	The university provides community service caravans to raise awareness of environmental sustainability and green transformation .	132	262	84	74	18	3.72	Agree	3
							3.76	Agree	

It is clear from Table (6) that the average responses of the study sample regarding the third axis came with a score of (3.76) (Agree), and the phrase (the university holds research partnerships with sectors of society in the field of environmental sustainability and green transformation) came as the highest response with a score of (3.84) (Agree). This indicates This is the importance of establishing partnerships with community institutions on environmental sustainability and green transformation, and the two phrases (the university provides various cultural activities to raise community awareness of environmental sustainability and green transformation, and the university provides community service convoys to raise awareness of environmental sustainability and green transformation) were the least responsive with a score of (3.72) (Agree), and this confirms the The necessity of holding cultural activities with community service institutions, as well as providing community convoys that support the university's community role in contributing to the process of sustainable development.

4- Fourth axis: Table (7) shows the following:

Table (7) shows the responses of the study sample of students regarding the fourth axis:

Table (7): Responses of the study sample regarding the fourth axis

No	Ferries	Responses					Relative weight	Approval level	Ranking
		Very agree	agree	neutral	not agree	Very disagree			
28	The university administration supports rational energy consumption systems .	132	292	124	20	2	3.93	Agree	3
29	Classrooms have external windows	254	212	86	0	18	4.20	Agree	1
30	The lighting systems used in university facilities are energy efficient .	202	278	60	28	2	4.14	Agree	2
31	The university plans to rationalize energy consumption .	134	240	120	42	34	3.69	Agree	5
32	There are regulations governing the use of clean energy	200	254	86	26	4	3.80	Agree	4
							3.95	Agree	

It is clear from Table (7) that the average responses of the study sample regarding the fourth axis came with a score of (3.95) (Agree), and the phrase (teaching halls have external windows) came as the highest response with a score of (4.20) (Agree). This indicates that the design of the halls at the university has Windows, which supports saving energy used in lighting and ventilation, and the phrase (the university plans to rationalize energy consumption) was the least responsive with a score of (3.69) (Agree), as most students feel the university's few efforts in providing devices that rationalize energy consumption, which represents one of the requirements for becoming a green university.

5-Fifth axis: Table (8) shows the following:

Table (8) shows the responses of the study sample of students regarding the fifth axis:

Table (8): Responses of the study sample regarding the fifth axis

No	Ferries	Responses					Relative weight	Approval level	Ranking
		Very agree	agree	neutral	not agree	Very disagree			
33	Lack of projects included in the strategic plan based on the principles of sustainability and green transformation .	200	254	86	26	4	4.08	Agree	2
34	Lack of faculty member participation in decision-making related to environmental sustainability	204	224	108	30	4	4.04	Agree	4
35	The difficulty of transforming university buildings to achieve the requirements of environmental sustainability and green transformation .	140	214	142	68	6	3.72	Agree	8

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36	Lack of budget allocated to support research projects that include environmental sustainability and green transformation .	182	214	144	28	2	3.95	Agree	7
37	Wide distances between university facilities	172	280	64	52	2	3.99	Agree	5
38	The distance of the university city from the city of Najran and the main roads	242	198	100	30	0	4.14	Agree	1
39	Using devices that consume high energy, which is difficult to replace .	196	208	122	44	0	3.97	Agree	6
40	Weak culture of relying on public transportation to reach university	254	248	112	56	0	4.05	Agree	3
							3.99	Agree	

It is clear from Table (8) that the average responses of the study sample on the fifth axis came with a score of (3.99) (Agree), and the phrase (distance of the university city from the city of Najran and the main roads) came as the highest response with a score of (4.14) (Agree). This indicates the distance of the university city About the city of Najran and the main roads, it represents one of the most important obstacles to saving energy and transforming into a green university, and the phrase (lack of budget allocated to support research projects that include environmental sustainability and green transformation) is the lowest response with a score of (3.95) (Agree), which confirms the necessity of directing part of the research projects budget to research Environmental sustainability and green transformation, and most importantly, supporting student participation in this research, which supports Najran University's transformation into a green university.

By presenting the results of the study on the responses of the study sample of students regarding the opinions of the study sample of students about the requirements for transforming Najran University into a green university, the score came with a score of (3.83) (Agree), and this indicates agreement in the opinions of the study sample of students on most of the questionnaire statements.

Second: To answer the second question of the field study, which is: Are there statistically significant differences in the responses of the study sample of students regarding the students' opinions about the requirements for transforming Najran University into a green university? According to the following variables:

- Gender (male - female)
- College (theory - practical)
- Academic level (from 1 – 3) – (from 4 – 6) – (more than 6)

This is evident by conducting an analysis of variance of the study sample's responses on the following study variables:

1- Are there statistically significant differences in the responses of the study sample of students regarding the opinions of the study sample of students regarding the requirements for transforming Najran University into a green university according to gender (male - female)? This is evident by conducting a t-test for the responses of the study sample, as stated in Table (9).

Table (9) Arithmetic mean, standard deviation, “t” value, and their significance for the questionnaire axes according to the gender variable (male - female)

Study topics	Males		Females		T value	Significance level
	Average	standard deviation	Average	standard deviation		
Infrastructure requirements	59.506	15.72	61.014	8.40	1.417 -	Non-functional
Educational requirements	32.486	5.39	30.374	4.35	5.125	0.001
Community service required	14.657	4.75	15.503	2.02	2.739-	0.01
Energy saving requirements	12.698	2.41	11.827	1.72	4.931	0.001
Obstacles to implementing the green university	32.486	5.39	30.374	4.35	5.125	0.001
The questionnaire as a whole	151.835	29.40	149.093	16.80	1.358	Non-functional

Table (9) makes it evident that, with the exception of the first axis and the questionnaire as a whole, there are statistically significant variations in the students' replies based on the gender variable (males and females). This suggests that there was disagreement among the male and female study population over the questionnaire's second, third, fourth, and fifth axis. It attests to the variations in the study sample's opinions across the majority of the questionnaire's axes.

2- Regarding the perspectives of the study sample of students about what is needed to turn Najran University into a green university based on college specialization (theory - practical), are there statistically significant differences in their responses? This is demonstrated by doing a t-test on the study sample's replies, as shown in Table (10):

Table (10) Arithmetic mean, standard deviation, “t” value, and their significance for the questionnaire axes according to the college specialization variable (theory - practical)

Study topics	theory		practical		T value	Significance level
	Average	standard deviation	Average	standard deviation		
Infrastructure requirements	59.637	12.60	63.229	12.84	2.5-	0.05
Educational requirements	31.194	4.35	32.750	7.41	2.7-	0.05
Community service required	14.675	3.605	17.020	3.604	5.8-	0.001
Energy saving requirements	12.164	1.96	12.812	2.84	2.7-	0.05
Obstacles to implementing the green university	31.194	4.35	32.750	7.41	2.7 -	0.05
The questionnaire as a whole	148.865	22.06	158.562	31.30	3.6 -	0.01

Table (10) makes it evident that, with regard to every axis of the questionnaire, there are statistically significant differences between the students' replies based on the college specialization variable (theoretical - practical). This suggests that there was disagreement among the study sample of students on some of the questionnaire's dimensions.

3- Regarding the requirements for turning Najran University into a green university, are there statistically significant differences in the responses of the study sample of students based on the academic level variable (first - third / fourth - sixth / more than sixth)? As shown in Table (11) this is clear via a one-way analysis of variance (ANOVA) to show the differences between groups:

Table (11) One-way analysis of variance (ANOVA) for the significance of differences between groups of the student sample according to the academic level variable (first - third / fourth - sixth / more than sixth)

Significance level	F" " value	Mean squares	Degrees of freedom	Sum of squares	Source of variance	Study topics
0.001	8.188	1289.133	2	2578.266	Between groups	Infrastructure requirements
		157.436	567	89266.324	Within groups	
			569	91844.589	Total contrast	
0.001	39.338	875.696	2	1751.393	Between groups	Educational requirements
		22.261	567	12622.011	Within groups	
			569	14373.404	Total contrast	
0.001	5.808	78.501	2	157.003	Between groups	Community service required
		13.517	567	7664.190	Within groups	
			569	7821.193	Total contrast	
0.001	11.189	49.990	2	99.980	Between groups	Energy saving requirements
		4.468	567	2533.325	Within groups	
			569	2633.305	Total contrast	
0.001	39.338	875.696	2	1751.393	Between groups	Obstacles to implementing the green university
		22.261	567	12622.011	Within groups	
			569	14373.404	Total contrast	
Non-functional	2.896	1673.406	2	3346.811	Between groups	The questionnaire as a whole
		577.798	567	327611.687	Within groups	
			569	330958.498	Total contrast	

Table (11) makes it evident that, with the exception of the questionnaire as a whole, there are statistically significant differences in the responses provided by students based on the academic level variable (first through third, fourth through sixth, or more than sixth). This suggests that there is a lack of agreement among the study sample of students. The Scheffé equation is used to indicate the differences' direction.

Table (12) Direction of the significance of the differences between groups of the sample of faculty members according to the academic level variable (first - third / fourth - sixth / more than sixth) using the (Schiffé) equation

Direction of comparisons			Averages	Academic level	Study topics
more than sixth	fourth - sixth	first - third			
			62.7143	first - third	Infrastructure requirements
		*4.62	58.0889	fourth - sixth	
	2.84	1.78	60.9333	more than sixth	
			29.9429	first - third	Educational requirements
		*3.35	33.2963	fourth - sixth	
	*3.82	0.47	29.4667	more than sixth	
			15.2190	first - third	Community service required
		0.13	15.3556	fourth - sixth	
	1.48	*1.35	13.8667	more than sixth	
			11.7619	first - third	Energy saving requirements
		*0.91	12.6815	fourth - sixth	
	0.43	0.48	12.2444	more than sixth	
			29.9429	first - third	

		3.13	33.2963	fourth - sixth	Obstacles to implementing the green university
	6.74	3.60	29.4667	more than sixth	

Table (12) presents the direction of the significant differences among the study sample members based on their academic level. The results indicated that there were differences between the first and third levels and between the fourth and sixth levels, with the first level being more favorable. Additionally, it demonstrated the existence of discrepancies favoring level (first–third) over level (greater than sixth).

RESULTS OF THE FIELD STUDY

The results of the field study were as follows:

- A score of (3.83) (Agree) was obtained from the study sample of students in response to their comments regarding the requirements for turning Najran University into a green university.
- Regarding all save the first axis and the questionnaire overall, there are statistically significant disparities in the replies provided by students based on their gender (males and females).
- On all survey axes, there are statistically significant disparities in the replies from students about the college specialization variable (theoretical - practical).
- With the exception of the questionnaire as a whole, there are statistically significant differences in the students' responses based on the academic level variable (first through third, fourth through sixth, or more than sixth), which suggests that there is disagreement among the study sample of students.

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