



Analysis of Sustainability Practices at University Campuses



D 1.3.1: Sustainability at Malaysian HEI campuses



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Consortium



Authoring information	
Project	MYSUN – “Malaysia Sustainable University Campus Network”
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Document authors	Tan Kim Geok, Multimedia University Chan Kar Hoong, Multimedia University

MYSUN Contact information

Universiti Putra Malaysia
e-mail: mysun@mmu.edu.my
MYSUN: www.mysuncampus.eu

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The MYSUN project is co-funded by the Erasmus+ Programme of the European Union (reference # 09969-EPP-1-2019-1-MY-EPPKA2-CBHE-SP).

Definition of Acronyms

EU | European Union

HEI | Higher Education Institution

IBM SPSS Amos | Structural Equation Modeling (SEM) software

KOM | Kick-Off Meeting

NGO | Non-Governmental Organisation

MYSUN | Malaysia Sustainable University Campus Network

MOOC | Massive Open Online Course

PC | Partner Country

SDGs | Sustainable Development Goals

WP | Work Package

Abstract

Sustainability embodies the societal evolution to achieve the balance among economics, society, and the environment. To promote a sustainable lifestyle in the community, universities can be the effective change agent to structurally improve society towards sustainability. This is mainly due to the role of the university to educate and produce future professionals and leaders. The MYSUN project WP1 aimed to study the sustainability situation among Malaysian Higher Education Institutions, to identify, share and recommend the training needs and good practices at the national level. Besides that this study also aimed to support the development and quality of training among the MYSUN partners to replicate in their institutions (WP2), to pilot the Massive Open Online Course (WP3), to strengthen the institutions (WP4), and to create a network through national workshops (WP5). This study employed the two-stage procedure methodology to develop and measure the validity of the dimensions among the Malaysian Higher Education Institutions. Before the mass survey was carried out, the pre-test survey was performed and the reliability test from the pre-test survey had shown a satisfactory level. Therefore, the mass survey was carried out to better understand the dimensions, namely, government, budget, awareness, motivation and design. Eight higher education institutions from partner countries contributed to the distribution of online surveys.

This report presents the analysis and discussions arising from the data collected through the mass survey. The findings highlight the major concerns, the strengths and weaknesses of the current sustainability situation of Malaysian higher education institutions. The report ends with recommendations and a conclusion.

Table of contents

1.0	Introduction	6
1.1	Organisation of Report	7
2.0	Survey Objectives	8
3.0	Methodology	10
3.1	Survey Methodology	10
3.2	Survey Questionnaires	13
3.3	Data Collection Methodology	14
3.4	Pre-Test Survey	17
4.0	Mass Survey Analysis	19
4.1	Students	19
4.1.1	Governance	19
4.1.2	Budget	20
4.1.3	Awareness, Motivation and Design	21
4.2	Staff	24
4.2.1	Governance	24
4.2.2	Budget	26
4.2.3	Awareness, Motivation and Design	28
5.0	Discussion of Findings	32
5.1	Discussion of Governance and Budget Dimension on Campus Sustainability	32
5.2	Discussion of Awareness Dimension on Campus Sustainability	33
5.3	Discussion of Motivation Dimension on Campus Sustainability	33
5.4	Discussion of Design Dimension on Campus Sustainability	34
6.0	Recommendations	36
7.0	Implication and Conclusion	38
8.0	References	39
	Appendices	40
	Appendix 1 Survey and Analysis Methodology	
	Appendix 2.1 Survey Questionnaire_Staff	
	Appendix 2.2 Survey Questionnaire_Students	
	Appendix 3 Pre-Test Survey Analysis Report	
	Appendix 4.1 Student Respondent Summary 20 October 2020	
	Appendix 4.2 Analysis Report_Students	
	Appendix 4.3 Staff Respondent Summary 20 October 2020	
	Appendix 4.4 Analysis Report_Staff	

1.0 Introduction

Sustainability, energy efficiency and climate change are among the global priority issues. There have been increased awareness of sustainability issues at all levels of society, and an increase in governmental measures to lead nations towards a more energy-efficient and sustainable future.

The Malaysia Sustainable University Campus Network (MYSUN) project is an EU funded Erasmus+ project MYSUN (Contract #609969-EPP-1-2019-1-MY-EPPKA2-CBHE-SP), aims to support Malaysia to address the challenges facing by their higher education institutions and system in the area of management and operations of sustainable university campuses, in promoting people to people contacts, intercultural awareness and understanding, and a national-level collaboration through a sustainable platform, the MYSUN Network.

The MYSUN project recognises that one of the keys to achieving sustainable development is through education, by instilling these values in all levels of the educational eco-system. However, the preliminary study indicated that there are challenges ahead, such as lack of resources, a need for additional staff and training of existing staff, a need for volunteers and resources for outreach programmes, as well as exposure to good practices and green solutions.

Under the MYSUN framework, a mass survey was planned to enable an in-depth analysis of current sustainability practices in at least 40 Malaysian HEI campuses, to define training and institutional needs and identify good practices to share, published and disseminated in two electronic reports in English and Malay. This task is assigned to Work Package 1 (WP1) under Task 1.2 Analysis of Malaysian Sustainability Practices.

The total data collected in the mass survey exercise includes minimal 640 students, 136 management staff, 480 technical staff and 480 academic staff. The details of respondent distribution are available in Section 4 of the report. The preparation of questionnaires began right after the kick-off meeting (KOM) and study visit at Alicante University (AU) on 2 March 2020.

This project runs from January 2020 to January 2023 which brings together 9 partners in Malaysia, namely Multimedia University (MMU), Universiti Putra Malaysia (UPM), Universiti Teknologi Malaysia (UTM), University Malaysia Sabah (UMS), Universiti Utara Malaysia (UUM), Universiti Malaysia Sarawak (UNIMAS), Universiti Teknologi MARA (UiTM), Universiti

Malaysia Pahang (UMP), and Ministry of Education (MOE). At the same time, 3 partners, specifically University of Alicante (UA), Università degli Studi di Genova (UNIGE), and FH JOANNEUM Gesellschaft mbH (FHJ) from the European Union (EU) also joined to contribute to the project's success.

Refer to <https://www.mysuncampus.eu/> for more information about the MYSUN project.

1.1 Organisation of Report

The WP1 objectives were devised to ensure the smooth execution of the MYSUN project. Hence, this report is structured as below to better comprehend the findings from the collected data of the mass survey. Each section of this report is described as in the following.

Section 1.0 provides the overview of the report (WP1) under the MYSUN project and a brief discussion of the respondents.

Section 2.0 elaborates the survey objective of WP1.

Section 3.0 demonstrates the methodology employed in this study.

Section 4.0 reports findings from the collected data.

Section 5.0 discusses the generated findings in detail.

Section 6.0 recommends the strategies and plans based on the findings.

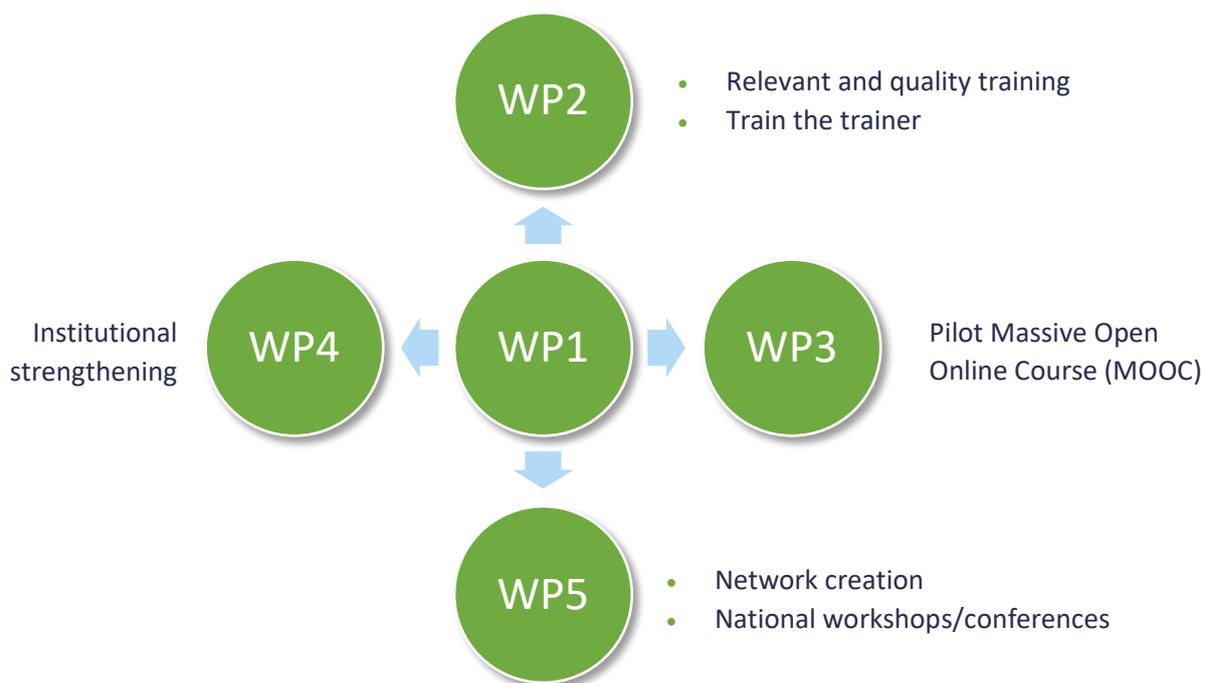
Section 7.0 states the implications and summarises the report.

Section 8.0 lists the references.

2.0 Survey Objectives

As defined in the MYSUN framework, WP1 was assigned to study the situation of sustainability in Malaysian HEIs to identify potential strengths and weaknesses, to identify training needs, good practices to be shared, and prepare recommendations to be presented at the national level. This will support the development of relevant and quality training of all partners and will be implemented within their institutions (WP2) and disseminated through national workshops (WP5), encouraging institutional strengthening (WP4), as well as conducting a pilot Massive Open Online Course (MOOC) (WP3). The linkages are as shown in **Figure 2.1**.

Figure 2.1: Linkages between WP1, WP2, WP3, and WP5



A mass survey is proposed as a toolkit for data collection to support Task 1.2. The mass survey aims to carry out an in-depth analysis of sustainability practices in at least 40 Malaysian HEI campuses. The total data to be collected in the survey includes minimal 640 students, 136 management staff, 480 technical staff and 480 academic staff.

In summary, the outputs of this survey together with Task 1.1 (study visit) are used to:

1. Recommend workshop topics for WP2 (capacity building)
2. Identify topics of modules for WP3 (sustainable campus pilot MOOC)
3. Identify targets for WP4 (institutional strengthening)
4. Identify strengths and weaknesses for WP5 (networking)

3.0 Methodology

MYSUN adopted a mass survey approach to assess and examine the current awareness, practices and satisfaction level. The outcome of this survey was used to improve Malaysian sustainability practices at HEI campuses and to identify good practices in HEI campuses on sustainability. Hence it was important to have a broader picture of Malaysian HEI sustainability practices and to adopt a proper survey methodology that reaches a larger number of respondents while addressing the concerns of reliability and generalisation.

3.1 Survey Methodology

This study identified the indicators contributing to good sustainability practices. The study employed a two-level study as showed in **Figure 2. (Appendix 1: Survey Methodology)**

- a) The first level of study comprises a reflection visit to the selected EU's Institution. Interview and observation during the reflection on the visit are used to identify those important indicators. For instance, identifying indicators for small-scale energy efficiency initiatives, large-scale efficiency initiatives, renewable initiatives, sustainability-related initiatives on transportation, food, environmental procurement, waste management, green building design, water and ecological design, etc.
- b) The second level of study comprises a survey. After completing the reflection on the visit, the study adopts the important indicators to measure the sustainability practices in Malaysian HEIs through survey questionnaires. Survey methodology involves survey development and distribution of questionnaires to all the related HEIs in Malaysia.

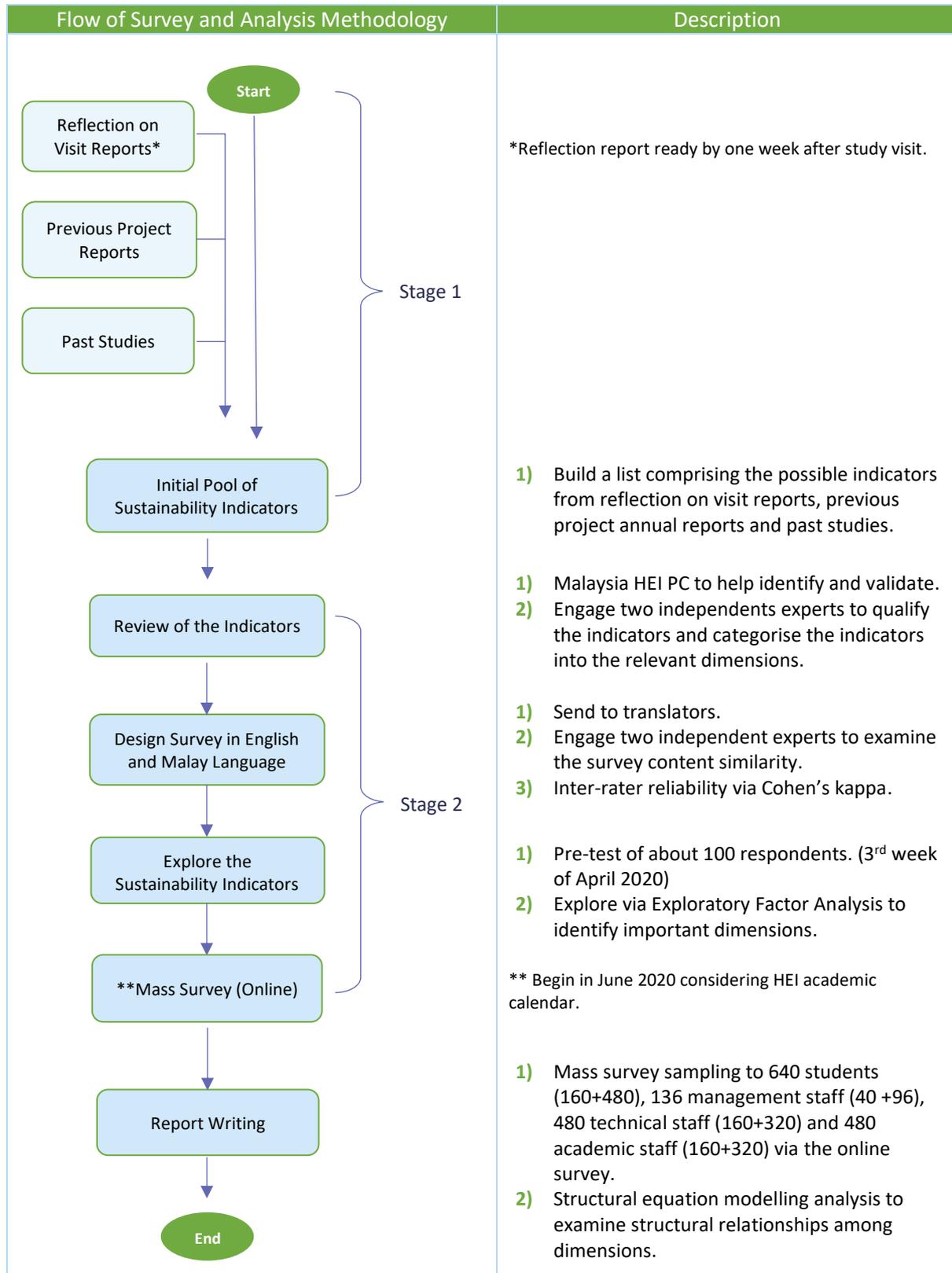
A two-stage procedure was used for developing measures and examining their validity in the Malaysian HEIs context.

In the first stage procedure, we built a list comprising the possible indicators from the reflection on the visit. We gathered all the important indicators from the reflection on visit reports. To ensure the comprehensiveness of the indicators, we extracted the possible indicators from past studies and previous project annual reports as references.

In the second stage, the following were done:

- 1) Identified and validated the indicators.
- 2) Sent the survey to translators because the survey was produced in both English and Malay to facilitate adequate responses.
- 3) **Sent out pre-test invitations to about 100 respondents comprising key target groups 1, 2, and 3.**
- 4) The purposive sampling method was employed in this study. This is because the targeted respondents were among staff and students.
- 5) Lastly, distributed the final version of survey to 40 (8+32) Malaysian HEIs comprising a total of 640 students (160+480), 136 management staff (40+96), 480 technical staff (160+320) and 480 academic staff (160+320).

Figure 3.1: Survey and analysis methodology



3.2 Survey Questionnaires

A comprehensive discussion was carried out during a study visit to University of Alicante (UA), Spain. A 5-dimension model was adopted for the survey questionnaire development. The dimensions comprised of governance, awareness, motivation, design, and budget. Two separate sets of questionnaires were design to cater for students and staff, respectively.

For the student version of questionnaires, the governance dimension was assessed via a qualitative type of open-ended questions which cover students' views and expectations on the campus sustainability initiatives. The awareness dimension covered students' knowledge in Sustainable Development Goals (SDGs) and exposure to in-campus related workshop/training and NGO activities. The motivation dimension was evaluated through quantitative questions addressing areas such as sustainability commitment and monitoring, community outreach, land use and planning, research, student opportunity and social responsibility. The design dimension on the other hand collected student views on the desirable sustainable campus features. The budget dimension was covered by one sub-question with regards to how the university can support student sustainability initiatives. The question allocation according to each dimension is provided in **Table 3.1**.

Table 3.1: Allocation of questions – Students

Dimension	Questions	%
Governance	14-15	3.2
Awareness	10	14.6
Motivation	13	50.0
Design	11, 12	29.0
Budget	13 (4.2)	3.2

For the staff version of questionnaires, the governance dimension was assessed via a qualitative type of open-ended questions which covered staff's view and expectation on the campus sustainability initiatives, its strengths and weaknesses. The awareness dimension covered staff's knowledge in in-campus sustainability initiatives and exposure to in-campus related workshop/training and NGO activities. The motivation dimension was evaluated

through quantitative questions together with one qualitative question addressing areas such as sustainability commitment, community engagement, HEI's support, and factors to sustain the sustainability initiatives. The design dimension on the other hand collected staff views on the desirable sustainable campus features, sustainability-related teaching and research activities. The budget dimension was covered by one sub-question with regards to how the university can support campus sustainability initiatives. The question allocation according to each dimension is provided in **Table 3.2**. The questionnaires for students and staff are available in **Appendix 2**.

Table 3.2: Allocation of questions – Staff

Dimension	Questions	%
Governance	15, 16, 17, 20	5.7
Awareness	8, 9, 13	49.0
Motivation	14, 18	30.5
Design	12, 19	11.8
Budget	11 (Subsection 5)	3.0

3.3 Data Collection Methodology

We adopt the online survey method because of 1) the survey questionnaire can be rapidly deployed and completed by the respondents, 2) the responses are automatically stored in a survey database, providing hassle-free handling of data and a smaller possibility of data errors, and 3) because the respondents can answer the questionnaire according to their own pace, chosen time, and preferences.

To facilitate the distribution of online surveys, a purposive sampling method was employed. This is because the respondents were target to be responded by staff and students. The invitation of survey questions were distributed via emails and other social media such as WhatsApp that includes the link to the questionnaire. The link consists of a consent form and the questionnaire were sent by each PC HEI partner to invite the participation of the survey respondents at their own HEI and at least 4 neighbouring non-partner HEIs (public, private or international universities, polytechnics, colleges etc.).

The distribution of online survey was assisted by 8 PC HEI, comprising:

- Multimedia University (MMU)
- Universiti Teknologi Malaysia (UTM)
- Universiti Putra Malaysia (UPM)
- Universiti Malaysia Sabah (UMS)
- University of Malaysia Sarawak (UNIMAS)
- Universiti Teknologi MARA (UiTM)
- Universiti Utara Malaysia (UUM)
- Universiti Malaysia Pahang (UMP)

The targeted respondents of each focus group of each PC HEI are listed below:

- Students = 20 respondents
- Management staff = 5 respondents
- Technical staff = 20 respondents
- Academic staff = 20 respondents

The survey also involves 32 non-partner HEIs with the following targets:

- Students = 15 respondents
- Management staff = 3 respondents
- Technical staff = 10 respondents
- Academic staff = 10 respondents

Below is the list of participating non-partner HEIs:

- University of Kuala Lumpur (UNIKL)
- University of Cyberjaya
- University of Malaya (UM)
- University College Sabah Foundation, Sanzac, Sabah (UCSF)
- Universiti Tun Hussein Onn Malaysia (UTHM)

- Universiti Tenaga Nasional (UNITEN).
- Universiti Teknologi PETRONAS Malaysia (UTP)
- Universiti Teknologi MARA Shah Alam (UiTM SHAH ALAM)
- Universiti Teknologi MARA Pasir Gudang (UiTM Pasir Gudang)
- Universiti Teknologi MARA Sabah (UiTM Sabah)
- Universiti Teknologi MARA Samarahan (UiTM Samarahan)
- Universiti Teknologi MARA Puncak Alam (UiTM Puncak Alam)
- Universiti Teknikal Malaysia Melaka (UTeM)
- Universiti Sultan Zainal Abidin (Unisza)
- Universiti Putra Malaysia (UPM), Sarawak Branch
- Universiti Malaysia Perlis (UNiMAP)
- Universiti Islam Antarabangsa Sultan Abdul Halim Mu'adzam Shah (UniSHAMS)
- UCSI University
- Tunku Abdul Rahman University College (TAR UC).
- Melaka International College of Science and Technology (MiCoST)
- Kolej Teknikal Yayasan Sabah (KTYS)
- Kolej Poly-Tech MARA Bangi (KPTM Bangi).
- Kolej Poly-Tech MARA (KPTM)
- Kolej Poly-Tech Mara Kuala Lumpur (KPTM Kuala Lumpur)
- International collage of Yayasan Melaka (ICYM)
- University Technology Petronas (UTP)

3.4 Pre-Test Survey

A pre-test of about 100 respondents comprising **Key target group 1, 2, and 3** were conducted. **Table 3.3** and **Table 3.4** indicate the respondents' profiles for students and staff, respectively.

Table 3.3: Profile of respondents – Students

	Variable	Frequency	Percent
Gender	Female	23	54.8
	Male	19	45.2
Age	21-25 years old	24	57.1
	26-30 years old	5	11.9
	31 years old and above	8	19.0
	Below 20 years old	5	11.9
Nationality	Indonesia	1	2.4
	Malaysian	40	95.2
	Spanish	1	2.4

Table 3.4: Profile of respondents – Staff

		Frequency	Percent
Higher Education Institution	FH JOANNEUM - University of Applied Sciences, Austria	1	5.9
	MMU	2	11.8
	UNIMAS	1	5.9
	UMP	4	23.6
	Universiti Malaysia Sabah	2	11.8
	Universiti Teknologi MARA	4	23.5
	University of Alicante	1	5.9
	UPM	1	5.9
	UTM	1	5.9
Nationality	Austrian	1	5.9
	Malaysian	15	88.2
	Spanish	1	5.9

The reliability test result for students is showed in **Table 3.5** below. Cronbach alpha for all the latent variables are greater than 0.7 except sustainability commitment & monitoring and community outreach, which are 0.697 and 0.607, respectively. However, both were acceptable as the Cronbach alpha will improve when the sample size increases.

Table 3.5: Reliability test – Students

Variable	No. of Items	Cronbach Alpha
Knowledge of Sustainable Development Goals	8	0.927
Awareness of Sustainability Issues	12	0.874
Sustainability Commitment & Monitoring	4	0.697
Waste and Energy	3	0.752
Community Outreach	3	0.607
Land Use and Planning	2	0.894
Research	5	0.847
Students Opportunities	6	0.858
Social Responsibility	11	0.924

On the other hand, the reliability test result for staff is shown in **Table 3.6** below. Cronbach alpha were greater than 0.7 for the latent variables of student opportunities and social responsibility except for research with a value of 0.695. However, it is acceptable as it will be improved when the sample size increases. Analysis report of the pre-test survey is available in **Appendix 3**.

Table 3.6: Reliability test – Staff

Variable	No. of Items	Cronbach Alpha
Research	6	0.695
Student Opportunities	6	0.847
Social Responsibility	11	0.948

Note:

The reliability analysis was not performed for staff's view of the sustainable university on campus. This is due to the sample sizes which are too small for each position.

4.0 Mass Survey Analysis

After the pre-test survey, both the students and staff had obtained a satisfactory level for the reliability test. Thus, a mass survey was carried out. The breakdown of the collected data from the respective HEIs is shown in **Appendix 4.1**. The below sections present the analysis generated from the data collected through the mass survey.

4.1 Students

There were 1431 students taking part in this MYSUN survey as shown in **Appendix 4.1**, far exceeding the minimum targeted sample size as defined in the MYSUN proposal. The analysis was carried out based on the proposed analysis methodology discussed in the earlier section, based on 5 dimensions. A full analysis report is available in **Appendix 4.2**.

The analysis of Governance and budget dimension is straightforward as there is one quantitative and one qualitative question for governance dimension, while one quantitative question for budget dimension. The IBM SPSS Amos analysis tool is used for the analysis of the remaining dimensions; awareness, motivation, and design dimension.

In general, the analysis of the survey question addresses the following questions:

- 1) What are the suggestions for university to improve their campus sustainability initiatives in future?
- 2) What are the awareness factors that influencing sustainability in campus?
- 3) What are the motivation factors that influencing sustainability in campus?
- 4) What are the design factors influencing sustainability in campus?
- 5) Is there any funding opportunity for green building in campus?

4.1.1 Governance

Data analysis shows that 794 respondents (70.5%) are satisfied with campus sustainability approaches thus far, while 331 respondents (29.4%) are not satisfied. About 448 different feedbacks were collected from respondents on how to further improve their campus sustainability initiatives and can be summarised as below:

- Improve awareness on sustainability among students
- Improve energy efficiency and use of renewable energy
- Waste recycling and reuse
- Emphasise on green campus concept

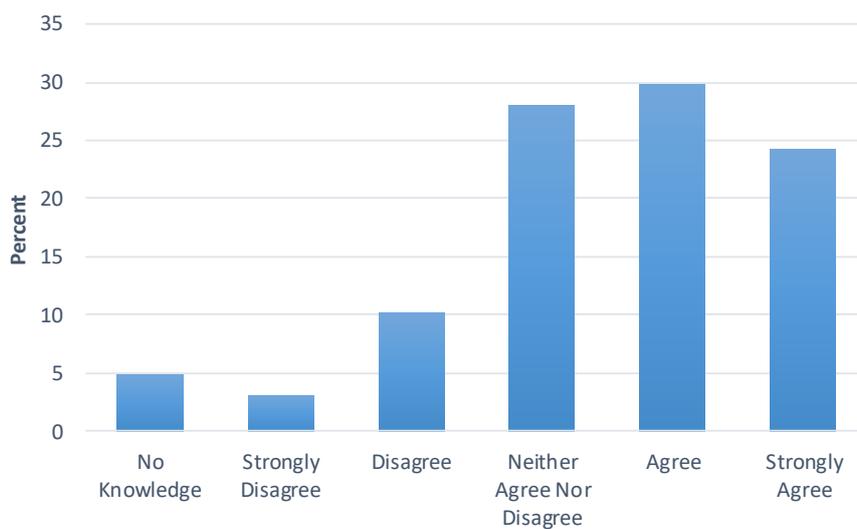
4.1.2 Budget

When students were requested to ascertain whether students should be provided with the opportunity to look for funding for green building, the majority of students (54%) agree or strongly agree that the opportunity is provided on the campus as shown in **Table 4.1** and **Figure 4.1**.

Table 4.1: Explore external funding opportunities for green building

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	70	4.9	4.9	4.9
	Strongly Disagree	45	3.1	3.1	8.0
	Disagree	144	10.1	10.1	18.1
	Neither Agree Nor Disagree	400	28.0	28.0	46.1
	Agree	426	29.8	29.8	75.8
	Strongly Agree	346	24.2	24.2	100.0
	Total	1431	100.0	100.0	

Figure 4.1: Explore external funding opportunities for green building



4.1.3 Awareness, Motivation and Design

In this study, 5-point or 6-point scales are used to analyse corresponding items in different dimensions. Descriptive statistics such as frequency, percentage are used to analyse respondents' responses on each item. The normality of data is accessed by skewness and kurtosis. In terms of inferential analysis, structural equation modelling is used to find the fit of model.

4.1.3.1 Model Fitness for Students

A model that fits the empirical data is identified. This model allows the study to graphically view the inferred causal relationships between awareness, motivation, and design dimensions, by using the IBM SPSS Amos tools. Specifically, in the model testing, the governance dimension was not included due to the open-ended format. Also, the budget dimension was excluded because it was only measured by one item. The measurement of the dimensions among students used in IBM SPSS Amos is presented in **Table 4.3**.

Since the fit indices in **Table 4.2** were acceptable with relative Chi-Square (χ^2/df) = 4.749 and p-value = 0.000, Goodness of Fit Index (GFI) = 0.976, Adjusted Goodness-of-Fit Index (AGFI) = 0.961, Root Mean Square Error of Approximation (RMSEA) = 0.051 and Comparative Fit Index (CFI) = 0.982.

The graph in **Figure 4.2** was generated using IBM SPSS Amos and illustrates the findings of the sustainability for the university campus. The squares represent the questions, or items, asked during the survey phase (e.g., item No102 asked "I know the countries to which the Sustainable Development Goals are addressed") and are also known as observed variables. The ovals represent the latent (non-observed) variables, also described as constructs or dimensions. It is important to note that the ovals are not actual variables. Rather, they are factors defined by the observed variables (rectangles). The figure also showed that all observed variables were having high factor loadings (>0.4) towards their latent variables which means the predictors are valid.

Table 4.2: Summary of model fit-Students

Chi-Square (χ^2)	194.705
Degree of Freedom	41
p-value	0.000
Relative Chi-Square (χ^2/df)	4.749
Goodness of Fit Index (GFI)	0.976
Adjusted Goodness-of-Fit Index (AGFI)	0.961
Root Mean Square Error of Approximation (RMSEA)	0.051
Comparative Fit Index (CFI)	0.982

Figure 4.2: Model Fitness for Students

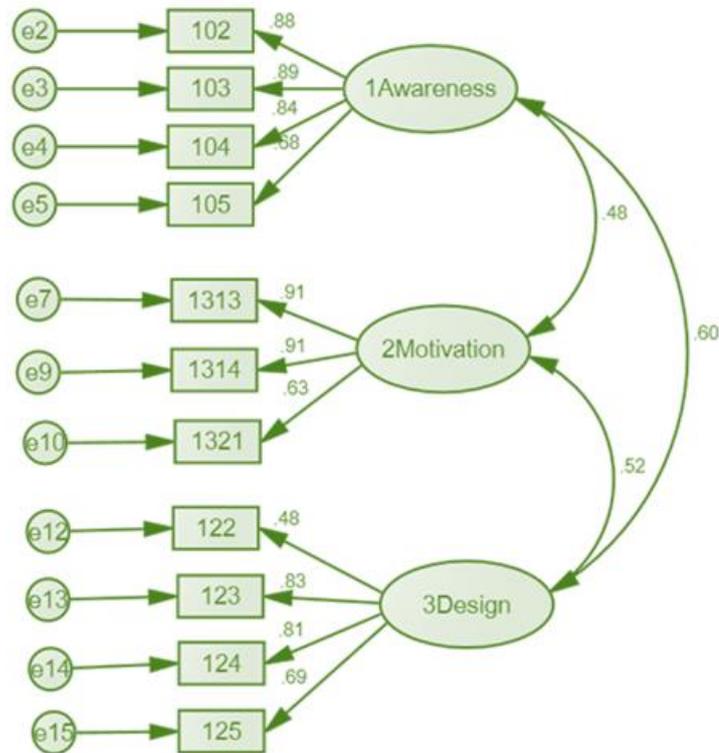


Table 4.3: Measurement of Dimensions-Students

Dimension	Items	Survey Questions
Awareness	102	I know the countries to which the Sustainable Development Goals are addressed
	103	I know the time horizon for which the Sustainable Development Goals are designed.
	104	I know the number of Sustainable Development Goals and could indicate one of their goals
	105	I have received information about the Sustainable Development Goals by email and/or Social Networks
Motivation	1313	Sustainability audits are performed on the surrounding community
	1314	Regular sustainability audits are performed on campus
	1321	University reuses campus waste
Design	122	Local environmental issues
	123	Sustainable development
	124	High Education for Sustainable Development
	125	The extent to which your college/department offers courses which address topics related to sustainability

4.1.3.2 Summary of Hypotheses Test-Students

Table 4.4 are shown the hypotheses and the test results where the respondents were students. The findings showed that there was a significant relationship between factors of awareness and campus sustainability. Furthermore, the findings also showed that there was a significant relationship between factors of motivation and campus sustainability. Lastly, the findings had concluded that there was a significant relationship between factors of design and campus sustainability.

Table 4.4: Results of hypotheses test

No	Hypothesis	Result
1	There is a relationship between factors of awareness and campus sustainability	Significant
2	There is a relationship between factors of motivation and campus sustainability	Significant
3	There is a relationship between factors of design and campus sustainability	Significant

4.2 Staff

There are 919 HEI staff taking part in this MYSUN survey, as shown in **Appendix 4.3**, slightly below the minimum targeted sample size (136+480+480) as defined in the MYSUN proposal. The analysis was carried out based on the proposed analysis methodology discussed in the earlier section, based on 5 dimensions. A full analysis report is available in **Appendix 4.4**.

The analysis of governance and budget dimension is straightforward as there are two quantitative and two qualitative questions for the governance dimension, while only two quantitative questions for budget dimension. The IBM SPSS Amos analysis tool is used for the analysis of the remaining dimensions; awareness, motivation, and design dimension.

In general, the analysis of the survey questions addresses the following questions:

- 1) What are the suggestions for university to improve their campus sustainability initiatives in future?
- 2) What are the awareness factors that influencing sustainability in campus?
- 3) What are the motivation factors that influencing sustainability in campus?
- 4) What are the design factors influencing sustainability in campus?
- 5) Is there any funding opportunity for green building in campus?

4.2.1 Governance

Table 4.5 and **Figure 4.3** indicate that 420 respondents (45.7%) knew that their university has a specific unit on sustainability while 136 respondents (14.8%) have the opinion that their university has no specific unit on sustainability. A total of 363 (39.5%) respondents have no idea whether the university has any specific unit on sustainability.

Table 4.5: Do your university have any specific unit on sustainability?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	420	45.7	45.7	45.7
	No	136	14.8	14.8	60.5
	I Don't Know	363	39.5	39.5	100.0
	Total	919	100.0	100.0	

Figure 4.3: Does your university have any specific unit on sustainability?

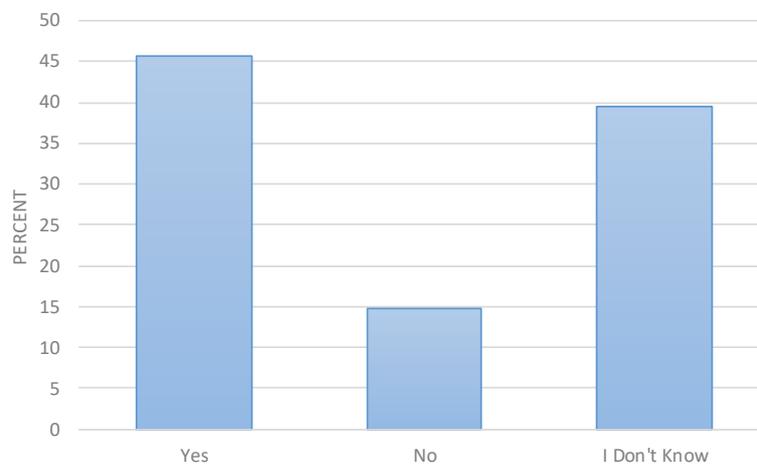
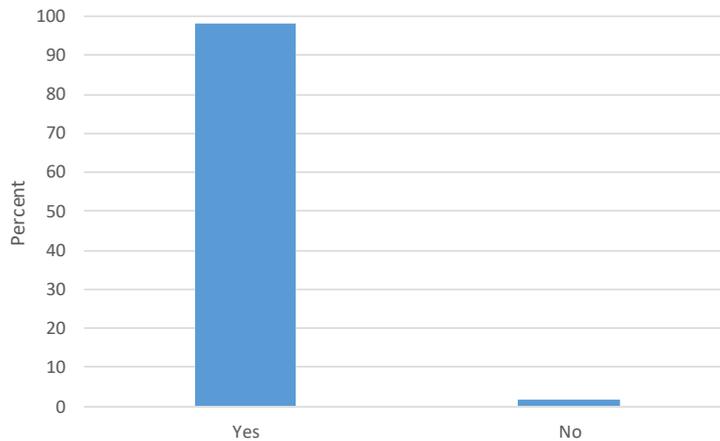


Table 4.6 and **Figure 4.4** indicates the majority of respondents (904 or 98.4%) feel that their university has to do something on improving sustainability while 15 respondents (1.6%) feel no need.

Table 4.6: Do you think your university should strengthen/improve its action on sustainability?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	904	98.4	98.4	98.4
No	15	1.6	1.6	100.0
Total	919	100.0	100.0	

Figure 4.4: Do you think your university should strengthen/improve its action on sustainability?



A total of 219 different feedbacks were collected from respondents when they were asked to indicate their institution's greatest sustainability strength as summarised below:

- Green campus
- Recycling activities

A total of 216 different answers from respondents when they were asked to indicate their institution's greatest sustainability weakness as summarised below:

- Lack of financial support
- Lack of awareness and right attitudes towards sustainability
- No proper planning and roadmap towards sustainability

4.2.2 Budget

When staff were requested to ascertain whether campus budget allocation is the main factor that affects the implementation of sustainable campuses worldwide, the majority of staff (72.3%) agree or strongly agree that budget is the important factor as shown in **Table 4.7** and **Figure 4.5**. Likewise, when asked whether funding is the main problem to implement sustainable development initiatives, the majority of staff (71.2%) agree or strongly agree that budget is the important factor as shown in **Table 4.8** and **Figure 4.6**.

Table 4.7: Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	38	4.1	4.1	4.1
	Strongly Disagree	8	.9	.9	5.0
	Disagree	39	4.2	4.2	9.2
	Neither Agree Nor Disagree	170	18.5	18.5	27.7
	Agree	326	35.5	35.5	63.2
	Strongly Agree	338	36.8	36.8	100.0
	Total	919	100.0	100.0	

Figure 4.5: Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide

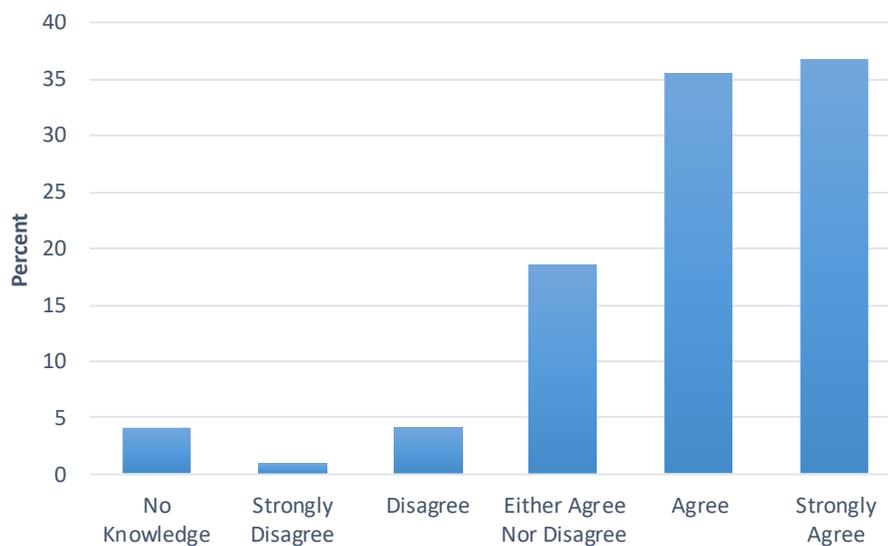
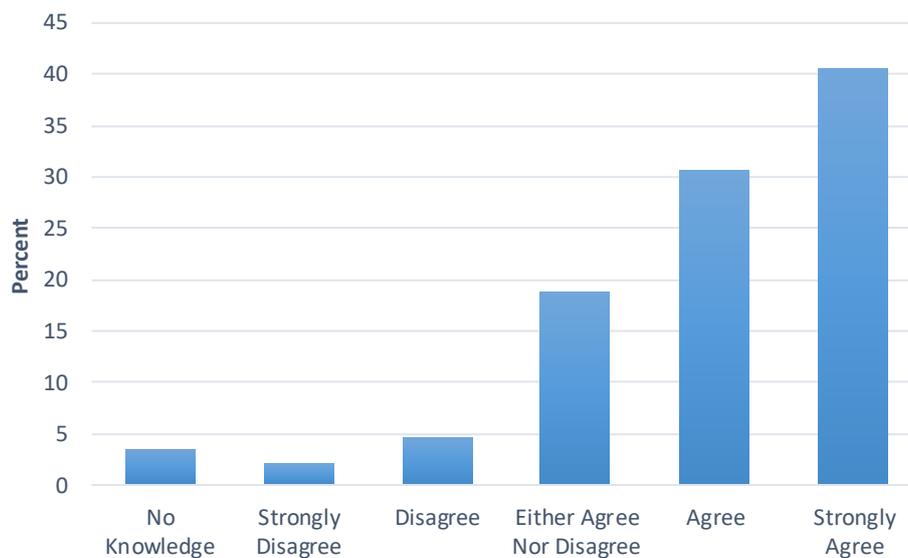


Table 4.8: Funding is the main problem to implement sustainable development initiatives in my campus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	31	3.4	3.4	3.4
	Strongly Disagree	19	2.1	2.1	5.4
	Disagree	42	4.6	4.6	10.0
	Neither Agree Nor Disagree	173	18.8	18.8	28.8
	Agree	282	30.7	30.7	59.5
	Strongly Agree	372	40.5	40.5	100.0
Total		919	100.0	100.0	

Figure 4.6: Funding is the main problem to implement sustainable development initiatives in my campus



4.2.3 Awareness, Motivation and Design

This study uses 5-point or 6-point scales to analyse corresponding items in different dimensions. Some open-ended questions are given to participants. Descriptive statistics such as frequency, percentage are used to analyse respondents' responses on each item. The normality of data is accessed by skewness and kurtosis. In terms of inferential analysis, structural equation modelling is used to find the fit of model.

4.2.3.1 Model Fitness for Staff

In the model of fitness for staff, a model that fit the empirical data is identified. The inferred causal relationships between awareness, motivation, and design dimensions, by using the IBM SPSS Amos are presented in **Figure 4.7**. Both the governance and budget dimensions are not included in the model testing because they were open-ended format and measurement of item limited to one respectively. **Table 4.10** shows the items with respective survey questions which measured the dimensions among staff.

Table 4.9 summarises the model fit for staff. All the fit indices are acceptable with relative Chi-Square (χ^2/df) = 4.633 and p-value = 0.000, Goodness of Fit Index (GFI) = 0.971, Adjusted Goodness-of-Fit Index (AGFI) = 0.948, Root Mean Square Error of Approximation (RMSEA) = 0.051 and Comparative Fit Index (CFI) = 0.983.

Figure 4.7 is generated using IBM SPSS Amos and illustrates the findings of the sustainability for the university campus. The squares represent the questions, or items, asked during the survey phase (e.g., item No131 asked “Provides students with sustainable accommodation”) and are also known as observed variables. The ovals represent the latent (non-observed) variables, also described as constructs or dimensions. It is important to note that the ovals are not actual variables. Rather, they are factors defined by the observed variables (rectangles). The high factor loadings (>0.4) towards their latent variables, as shown in **Figure 4.7**, indicate that the predictors are valid.

Table 4.9: Summary of Model Fit-Staff

Chi-Square (χ^2)	143.632
Degree of Freedom	31
p-value	0.000
Relative Chi-Square (χ^2/df)	4.633
Goodness of Fit Index (GFI)	0.971
Adjusted Goodness-of-Fit Index (AGFI)	0.948
Root Mean Square Error of Approximation (RMSEA)	0.063
Comparative Fit Index (CFI)	0.983

Figure 4.7: Model Fitness for Staff

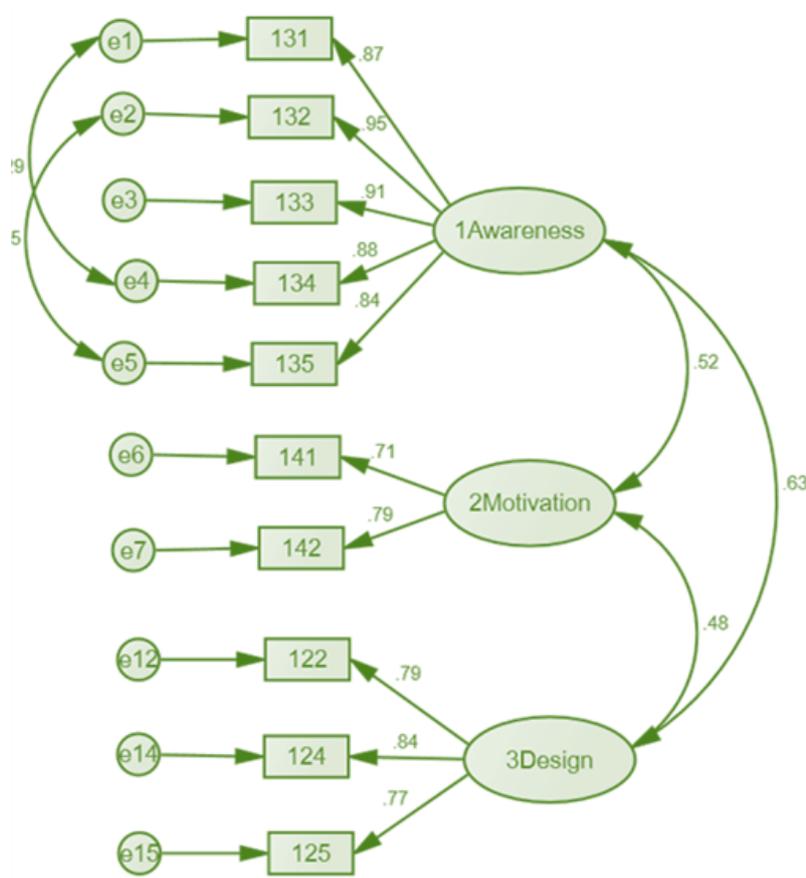


Table 4.10: Measurement of Dimensions-Staff

Dimension	Items	Survey Questions
Awareness	131	Provides students with sustainable accommodation.
	132	Provides students with environmental sustainability practice facilities.
	133	Establish student groups with a focus on sustainability.
	134	Encourage student groups to participate in sustainability initiatives.
	135	Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises.
Motivation	141	Security within the campus.
	142	Provide adequate access to people with disability.
Design	122	Significant research funding is allocated to sustainability.
	124	An institute(s) focusing on researching/teaching sustainability exists.
	125	A collaboration with industries to create a better sustainability direction.

4.2.3.2 Summary of Hypotheses Test-Staff

Table 4.11 tabulates the findings from the data collected through the mass survey from staff. The results show that there is a significant relationship between factors of awareness and campus sustainability. Moreover, the findings also show that there is a significant relationship between factors of motivation and campus sustainability. Finally, the findings also indicate that there is a significant relationship between factors of design and campus sustainability.

Table 4.11: Results of hypotheses test-Staff

No	Hypothesis	Result
1	There is a relationship between factors of awareness and campus sustainability	Significant
2	There is a relationship between factors of motivation and campus sustainability	Significant
3	There is a relationship between factors of design and campus sustainability	Significant

5.0 Discussion of Findings

This study was conducted to gain a clearer picture of the sustainability situation of Malaysian HEIs. Objectively, it aimed to identify the potential strengths and weaknesses, to recognise the training needs, good practices to be shared and prepare recommendations to be presented at a national level.

Specifically, this section discusses and deliberates on the findings obtained on the five dimensions, namely, governance, budget, awareness, motivation and design dimensions on campus sustainability.

5.1 Discussion of Governance and Budget Dimension on Campus Sustainability

The data collected in measuring the governance dimension among students had indicated that the majority (70.5%) of them are pleased with the efforts done by the university towards campus sustainability such as promoting green activities, adoption of green technology, waste recycling, and reuse. Finally, they also proposed that a stronger emphasis on the concept of a green campus was needed. On the other hand, not up to half of the responded staff specifically 45.7% were aware that there was a specific unit in their university to handle sustainability-related issues. The majority (98.4%) of staff agreed that their university should put more effort into sustainability-related issues and promoting recycling activities.

As for the budget dimension, the majority (54%) of the students agreed or strongly agreed that they should be given the opportunity to source for external financial resources to fund the university's green building. The staff also stated that lack of financial support was one of the barriers to the implementation of campus sustainability worldwide. Thus, the majority of them (72.3%) agreed or strongly agreed that the budget allocation was crucial for the implementation. Also, 71.2% of the staff agree or strongly agreed that the main problem for the implementation of a sustainable campus was financial resources. With regards to the budget dimension, both staff and students know that the university provides resources in terms of financial resources to support campus sustainability initiatives. Hence, the students and staff were encouraged to organise, participate, and engage in any sustainable activities to source for external funding.

5.2 Discussion of Awareness Dimension on Campus Sustainability

The findings showed that there is a significant relationship between the factors of awareness and campus sustainability for both students and staff and thus, the hypotheses were supported. 71.4% of the responded students were not well aware of how the countries address the Sustainable Development Goals, and specifically on the time horizon for the Sustainable Development Goals, 79.2% of them were not aware of it. Furthermore, 70.8% of the students were also not aware of the specific number and state the Sustainable Development Goals and 70.9% of them were not receiving any information relates to Sustainable Development Goals. Similar findings also showed in the study conducted by Alsaati, El-Nakla, and El-Nakla (2020) in Saudia Arabia. Hence, the university is suggested to have done more initiatives to improve the students' awareness. It was recommended that the university offer sustainable related courses and promotes sustainability activities to enhance the sustainability knowledge and behaviour of the students. Comparably, more than half of the responded staff were well aware of the university's initiatives on the sustainability efforts as compared to students. Specifically, 63.2% of staff were aware that the university was providing students with sustainable accommodation, 66.5% of them were also aware that the university was providing students with environmental sustainability practice facilities, 73.9% of them agree or strongly agree that the university was working on the student groups with a focus on sustainability initiatives and 64.6% of them also agreed or strongly agreed that the university is encouraging the students in the sustainable careers and enterprises. In short, with regards to the awareness dimension, findings implied that information on sustainability is not made easily accessible or available for students. Therefore, the university needs to figure out the best communication channels to convey information about sustainability to students.

5.3 Discussion of Motivation Dimension on Campus Sustainability

Moreover, both the responded students and staff had also demonstrated a significant relationship between factors of motivation and campus sustainability. There was 65.1% of students responded that they neither agree nor disagree, disagree or strongly disagree that there were sustainability audits performed on the surrounding of the community. In addition, there was 65.5% of the students responded that they had no knowledge, neither agree nor disagree, disagree, or strongly disagree there were regular sustainability audits conducted on the campus sustainability. Lastly, 68.0% of them also responded neutrally,

disagree or strongly disagree that their university had reused the campus waste. Blackburn (2016) stated that motivation played an important role in ensuring a well-executed project because personnel without motivation will lose interest and the success of the project will be foreseen to fade off. To ensure the success of the project, the university was recommended to provide more incentives (monetary or non-monetary) to students who are actively participating in campus sustainability to improve their motivation towards campus sustainability. The university also must be able to build an integrated vision of life to be sustainable among students. It was suggested that universities should get involved in sustainable knowledge transfer by deploy, integrate and align efforts across the organisations through sustainability activities such as research and development, administration and planning, student activities, and community engagement activities. On the other side, 77.1% of the staff agreed or strongly agreed that the university had provided good security within the campus and 73.6% of the responded staff also agreed or strongly agreed that the university had provided adequate access to the person with a disability. In a nutshell, staff are prone to agree that they can see the university efforts in engaging campus sustainability by providing sustainability-related facilities, a special sustainability division/unit, and a dedicated sustainability officer. Students are sharing common opinions as staff because they can see the university efforts in encouraging students to actively participate in sustainability activities such as reuse waste, save energy, create a green community, and others. Findings generated by using IBM SPSS Amos had also shown a positive relationship between factors of motivation and campus sustainability. Hence, the stated hypotheses were supported.

5.4 Discussion of Design Dimension on Campus Sustainability

In terms of design dimension, the hypotheses were supported for both students and staff. It indicated that there is a significant relationship between factors of design dimension and campus sustainability. Among the responded students, 0.7% of them do not know anything about the issues related to the local environment. 4.2% of them also do not know the university's sustainable development. Meanwhile, 7.9% of them also do not know the sustainable development in higher education. A substantial of responded students (11.0%) do not know that their universities offered courses related to sustainable topics. Given the collected responses, the university was suggested to promote eagerly their sustainability activities among students to ensure participation in campus sustainability projects. Whereas, 46.0% of the responded staff agree or strongly agree that the university allocated significant

research findings in the area of sustainability. Also, the majority of the staff (56.9%) agree or strongly agree that the research and development in the campus had been focusing on researching/teaching with relates to sustainability. 69.4% of them agree or strongly agree that collaboration between the industries will create a better sustainability direction. Kornfeld and Kara (2015) had also suggested a framework for the industry-university partnership to achieve sustainable manufacturing. To sum up, the significant relationship between the design dimension and campus sustainability had implied that staff and students realise that the university tries to create a sustainable environment.

6.0 Recommendations

The WP1 was consigned to identify the potential strengths and weaknesses of the sustainability situation among Malaysian HEIs. WP1 aimed to support the development of relevant and quality training to replicate in their institutions (WP2), to model the Massive Open Online Course (MOOC) (WP3), to strengthen the institutions (WP4) and to create a network by organising national workshops (WP5). Hence, the findings in sections 4.1 and 4.2 have been consolidated in preparing the recommendations for WP2, WP3, WP4, and WP5 as shown in **Table 6.1**.

Table 6.1: Recommendation for WP2, WP3, WP4, and WP5

WP	Recommended Topics	Target Audiences	Mapping to Survey Findings
2	<p>Workshop topics:</p> <ul style="list-style-type: none"> Introduction of Sustainable Development Goals (SDGs) Stakeholders' behaviour and attitude change Lessons learned from European HEI's journey towards campus sustainability Curriculum transformation: towards sustainable campus 	<p>Students</p> <p>Staff and Students</p> <p>Staff</p> <p>Staff and Students</p>	<ul style="list-style-type: none"> Improve awareness on sustainability among students Lack of awareness and right attitudes towards sustainability Improve energy efficiency and use of renewable energy Waste recycling and reuse. Significant research funding is allocated to sustainability Higher Education for Sustainable Development The extent to which your college/department offers courses that address topics related to sustainability
3	<p>MOOC Topics</p> <ul style="list-style-type: none"> Planning and roadmap towards campus sustainability; The Drivers and Barriers Green campus concept and measures The university campus: A living lab for sustainability 	<p>Staff</p> <p>Staff and Students</p> <p>Students</p>	<ul style="list-style-type: none"> No proper planning and roadmap towards sustainability Recycling activities Emphasise on green campus concept Provides students with sustainable accommodation Provides students with environmental sustainability practice facilities Establish student groups with a focus on sustainability Security within the campus Provide adequate access to people with disability
4	<p>Institutional Strengthening</p> <ul style="list-style-type: none"> Enhancing effectiveness in communicating sustainability agendas 		<ul style="list-style-type: none"> Lack of financial support Student research opportunities in sustainability are offered

WP	Recommended Topics	Target Audiences	Mapping to Survey Findings
	<ul style="list-style-type: none"> Promoting voluntary campus sustainability audit; campus watchdog committee 		<ul style="list-style-type: none"> Emphasise on green campus concept
5	<p>Strengths</p> <p>Weaknesses</p>		<ul style="list-style-type: none"> Green campus Recycling activities Lack of financial support Lack of awareness and right attitudes towards sustainability No proper planning and roadmap towards sustainability

7.0 Implication and Conclusion

The findings conclude that students and staff are having similar perceptions towards campus sustainability. They point out the importance of planning and having a blueprint towards achieving sustainability. Critically, they perceive that financial resources appear to be the main resources in achieving campus sustainability, and they are also well aware of the available financial resources to achieve sustainability. Aside, due to information asymmetry, students are lacking in awareness with regards to the campus initiatives on sustainability efforts. It is also suggested that the university should act more proactively in terms of communicating and sharing knowledge in the area of sustainability among the community. This is because the university played an important role in the dissemination of sustainable knowledge and therefore, the university should leverage in their strength to create a green campus with regular recycling activities and knowledge-sharing to cultivate the right attitude towards sustainability. In other words, to ensure that the development is sustainable and cultural values should be embedded (Thaman, 2002). Teaching should align with the social, environmental and economic trends as the university is the place to develop and prepare the next generation of professionals and leaders.

This study has provided insights to the whole university community. The university should play its role in sustainable knowledge transfer by having more workshops that relate to sustainability. At the same time, the university can also organise MOOC with topics relates to sustainability to promote awareness and strengthen the collaboration with NGOs, industry players and regulators. More seminars and exhibitions should be co-organised so that it will be more effective in cultivating the sustainability attitude among the community. Aside, it is proposed that a special committee be set up to oversee the issues with regards to the implementation of campus sustainability. This is to ensure no one is left out from the implementation of campus sustainability. Finally, contributions by the whole university community are needed to create a sustainable campus.

~End of Report ~

8.0 References

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APPENDICES

[Appendix 1](#) | Survey and Analysis Methodology

[Appendix 2.1](#) | Survey Questionnaire_Staff

[Appendix 2.2](#) | Survey Questionnaire_Students

[Appendix 3](#) | Pre-Test Survey Analysis Report

[Appendix 4.1](#) | Student Respondent Summary 20 October 2020

[Appendix 4.2](#) | Analysis Report_Students

[Appendix 4.3](#) | Staff Respondent Summary 20 October 2020

[Appendix 4.4](#) | Analysis Report_Staff

Appendix 1

Survey and Analysis Methodology

Table of Content

NO	CONTENT	PAGE
1.	INTRODUCTION	2
	1.1. AIM OF THE DELIVERABLE	3
2.	SURVEY METHODOLOGY	3
3.	ANALYSIS METHODOLOGY	5
4.	QUESTIONNAIRES	6
5.	SCHEDULE AND MILESTONE	7
6.	REFERENCES	7
7.	ANNEXES	9

1 INTRODUCTION

1.1 Aim of the deliverable

WP1 activities will focus on carrying out an analysis of Malaysian Sustainability Practices in two main aspects:

1. In-depth understanding on the current campus sustainability policies and practices of EU partners. The output of 8 reflection reports on lessons learnt by each HEI, as well as the awareness and practices in EU HEIs. In MYSUN project, study visit at EU HEIs is considered as an input to offer the awareness of sustainability indicators with impact on Malaysian HEIs.
2. To design a strong methodology and necessary tools for in-depth analysis in Malaysian HEIs. The project will focus on exploring the perspective of sustainability awareness, practices and have an insight on the current satisfaction level of sustainability practices.

1.2 Hypothesis

The hypotheses established for the survey are listed below.

1. There is a relationship between factors of awareness and campus sustainability
2. There is a relationship between factors of motivation and campus sustainability
3. There is a relationship between factors of design and campus sustainability
4. There is a relationship between factors of governance and campus sustainability
5. There is a relationship between factors of budget and campus sustainability

2 Survey Methodology

MYSUN adopts survey to assess and examine the current awareness, practices and satisfaction level. The outcome of this survey, is to improve Malaysian sustainability practices at HEI campuses and identify good practices in HEI campuses sustainability. Hence it is important to have a broader picture of Malaysian HEI sustainability practices, and the study adopts survey methodology to reach a larger number of respondents, while addressing the concerns of reliability and generalisability.

This study will identify the indicators contributing to good sustainability practices. The study employs a two-level study

- a) First level of study comprises reflection visit in the select EU's Institution. Interview and observation during the reflection on visit are used to identify those important indicators. For instances, identifying indicators for small-scale energy efficiency initiatives, large-scale efficiency initiatives, renewable initiatives, sustainability-related initiatives on transportation, food, environmental procurement, waste management, green-building design, water and ecological design etc.
- b) Second level of study comprises survey. After completing the reflection on visit, the study adopts the important indicators to measure the sustainability practices in Malaysian HEIs into a survey questionnaire. Survey methodology involves survey development and distribution of questionnaires to all related HEIs in Malaysia

Survey Methodology

We followed the suggestions of Churchill (1979) and used two-stage procedures for developing measures and examining their validity in Malaysian HEIs context.

In the first stage procedure, we will build a list comprising the possible indicators from the reflection on visit. We gather all the important indicators from the reflection on visit reports. To ensure comprehensiveness of the indicators, we will extract possible indicators from past studies and previous project annual reports as a reference.

In view of having a more manageable number of indicators, we follow the procedures outlined by Pervan and Martin (2012) to filter those redundant and irrelevant measures. First, we assess the relevancy of the available indicators from a) reflection on visit, b) past studies and c) previous annual project reports. We select and include those indicators in the survey based on following reasons: an acknowledgement of the limited measures available in the Malaysian HEI campus context means that the survey must necessarily include relevant indicators that are more generic for the education institution; and the limited measures available at the indicator level that underpins the important sustainability practices as perceived by the **key target group 1** (HEI staff from

Sustainability Offices) **and group 2** (HEI Higher Management) suggest that we also need to identify those indicators previously validated across education institutions.

In the second stage, we will

- 1) send to selected Malaysian HEI person-in-charge to help identify and validate the indicators. We then engaged two independent reviewers to isolate those indicators that are redundant and less relevant in the context of education institution. The outcome of this process will help the study to build a comprehensive list of indicators. This method is evident in the studies of Boberg, Karapanos, Holopainen and Lucero (2015). Lastly, we categorised those measures to fit into a manageable dimension for examples small-scale energy efficiency initiatives, large-scale efficiency initiatives, renewable initiatives, sustainability-related initiatives on transportation, food, environmental procurement, waste management, green-building design, water and ecological design etc.
- 2) send the survey to translators since the survey will be produced in both English and Malay to facilitate adequate responses. We will hire two independent experts for examining the similarity of both English and Malay version of questionnaires to minimise any possible errors that could be generated from survey instruments. Both experts will need to compare each measure and give rating. Their ratings will be analysed via Cohen's kappa coefficient (SPSS). This is a statistic that is used to measure inter-rater reliability for a simple percent agreement. Benchmark value is that both experts must show at least 60% agreement on all the items (Kvalseth, 1989). Any disagreement will be moderated by a third independent expert.
- 3) subsequently, we explore the important indicators from the initial pool via exploratory factor analysis (EFA) (Gilboa et al., 2016). **A pre-test of 100 respondents** comprising **Key target group 1 and 2** will be invited to indicate their agreement or disagreement on a five point Likert scale on how important those items were in affecting their sustainability practices with the HEI campus. The important indicators will be selected from the highest chosen rate from respondents.
- 4) Lastly, we distribute the final version of survey to 40 (8+32) Malaysian HEIs for a total of 640 students (160+480), 136 management staff (40 +96), 480 technical staff (160+320) and 480 academic staff (160+320).

Data Collection Methodology

We adopt online survey method because of 1) the survey questionnaire can be rapidly deployed and completed by the respondents, 2) the responses are automatically stored in a survey database, providing hassle-free handling of data and a smaller possibility of data errors, 3) the respondents because they can answer the questionnaire according to their own pace, chosen time, and preferences.

To facilitate the distribution of online survey, we will send invitation emails that includes the link to the questionnaire at which this link consists of a Consent Form and the questionnaire, will send by each PC HEI partners to invite the participation of the survey respondents at their own HEI and at least 4 neighbouring non-partner HEIs (public, private or international universities, polytechnics, colleges etc.).

We will screen the target respondents whilst they are engaging with the institution to ensure that they have sufficient experience and awareness of the topic being investigated. Specifically, we screen and select respondents who are compatible with the understanding of sustainability practices, that sustainability is perceived through the experience that they have had with the institutions. Moreover, as the entire sustainability practice is of our interest, we screen the respondents based on two major criteria, that they: (1) are currently being working or studying in the institution; and (2) have engaged with sustainability practices in the past six months.

3 Analysis Methodology

3.1 Pre-test

To explore the initial pool of indicators, 100 respondents will be approached in various sections of the institutions. Manuel, Varghese, Jose, Thomas, Joseph and Shettigar (2015) note that it is adequate to have 100 sample size for initial screening.

Next, we apply Exploratory Factor Analysis (EFA) on the indicators using maximum likelihood estimation (MLE) method. The MLE method is suitable because the measures identified as multidimensional, and we intended to maximise the likelihood estimation that would fit into a broader sustainability dimension.

Following the suggestion from Tabachnick and Fidell (2013), we choose oblimin rotation to identify possible correlated factors for simpler and easier interpretations. We observe an absolute value of >0.50 as the threshold value for better convergent properties (De Jong and Den Hartog, 2010; Gilliland et al., 2012). We will follow the suggestion of Hair et al. (2010) by retaining only those items that obtained: inter-correlation value of < 0.90 and anti-image of >0.50 .

We will assess also the suitability of data via Kaiser–Meyer–Oklin (KMO) (0.89) with statistical significance of $p < 0.001$. The EFA assessment will enable the study to identify the relevant dimensions, based on the initial eigenvalues of above 1.0 (variance of 68.1 per cent). All items must fulfil the inter-correlation value of < 0.90 and anti-image of >0.50 .

3.2 Mass Survey

We will follow up the study with Structural Equation Modelling (SEM) methodology with the Confirmatory Factor Analysis (CFA) to detect the presence of unidimensionality and to define individual dimensions that are represented with a set of indicators. Drawing from the reason for having consistent estimation method as per the prior stage, i.e. MLE, we send the survey to 640 students (160+480), 136 management staff (40 +96), 480 technical staff (160+320) and 480 academic staff (160+320) to generate a more stable and adequate fit model (Hair et al., 2010). We will drop those responses with missing values because this is regarded as a good alternative for handling missing data (Tabachnick and Fidell, 2013) and resample those incomplete responses to make up for the adequate samples.

Data will be analysed using Smart-Partial Least Square (Smart-PLS) or Analysis of Moment Structures (AMOS) software following SEM procedures that comprise two primary analyses: (1)

measurement model analysis via confirmatory factor analysis (CFA) and (2) structural model analysis via SEM (Hair et al., 2010). The idea of constructing a measurement model is to provide factorial validity by mapping multiple indicators onto the latent dimensions. Indicators that are loaded with standardised regression weights (SRW) of above 0.50 suggests a substantial degree of association loaded onto a latent dimension (Byrne, 2010). The model fit, reliability and validity of the constructs will be examined to indicate the consistency between the observed and the estimated matrices.

We will test the relationships amongst variables based on the hypotheses, using SEM. The structural relationship between two variables is supported when the critical ratio (c.r.), that is, the outcome of parameter estimate/standard error, exceeds $p \pm 1.96$ based on the significance level of 0.05 (Byrne, 2010).

4 Questionnaires

A comprehensive discussion was carried out during study visit to UA, Spain. A 5-Dimension model has been adopted for the survey questionnaire development. The dimensions comprising of governance, awareness, motivation, design, and budget. Two separate set of questionnaires were design to cater for student and staff respectively.

For the student version of questionnaires, the governance dimension is assessed via qualitative type of open ended question which cover students' view and expectation on the campus sustainability initiatives. Awareness dimension covers students' knowledge in Sustainable Development Goals (SDGs) and exposure to in-campus related workshop/training and NGO activities. Motivation dimension is evaluated through quantitative questions addressing areas such as sustainability commitment and monitoring, community outreach, land use and planning, research, student opportunity and social responsibility. The design dimension on the other hand collect student views on the desires sustainable campus features. The budget dimension is covered by one sub-question with regards how university can support student sustainability initiatives.

For staff version of questionnaires, the governance dimension is assessed via qualitative type of open ended question which cover staff's view and expectation on the campus sustainability initiatives, its strength and weaknesses. Awareness dimension covers staff's knowledge in in-campus sustainability initiatives and exposure to in-campus related workshop/training and NGO activities. Motivation dimension is evaluated through quantitative questions together with one qualitative question addressing areas such as sustainability commitment, community engagement, HEI's support, and factors to sustain the sustainability initiatives. The design dimension on the other hand collect staff views on the desires sustainable campus features, sustainability related teaching and research activities. The budget dimension is covered by one sub-question with regards how university can support campus sustainability initiatives.

5 Schedule and Milestone

Pre-test survey: 1 April 2020

Milestone: Pre-test analysis report, 31 April 2020

Mass survey: 1 June 2020

Milestone: Analysis report, 18 November 2020

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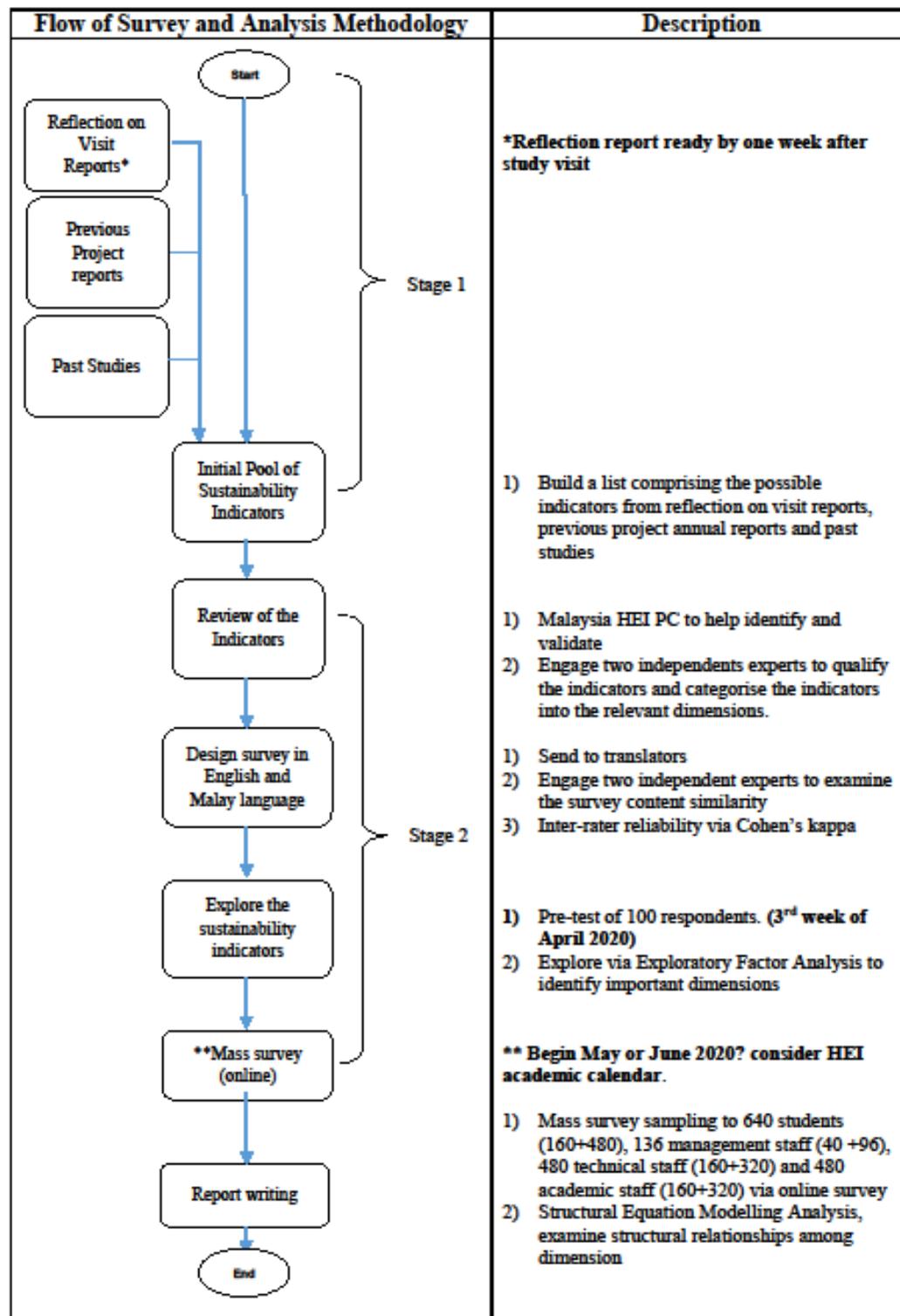
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7. Annexes

Annex A: Survey and Analysis Methodology Flow Chart



Appendix 2.1

Survey Questionnaire_Staff



Warm Greetings!

Dear Respected Respondents,

While we are still fighting and struggling for Covid-19 crisis, at the meantime, an even worse crisis is dawning behind our horizon: the **changing climate**, representing our common future getting into danger.

We, the members of the Malaysia Sustainable University Campus Network (MYSUN), are deeply moved by this challenge, researching for more effective ways of engagement for our professional field; our higher education institutions.

Our study aims to find out how to move towards a sustainable campus development, under the framework of the EU funded Erasmus+ project MYSUN (Contract #609969-EPP-1-2019-1-MY-EPPKA2-CBHE-SP).

The study covers aspects such as awareness, governance, motivation, campus design, and financial aspect that will have impact on stakeholders which includes students, staff, and the university management itself.

To reach this important aim **we need your indispensable help**: We need insights into YOUR PERCEPTION of your campus environment, your campus culture, sustainable activities, campus vision – and sensible impacts of your campus world.

Your answers will help us to develop better applied activities for a precious, sustainable campus culture - also at your University.

Please, spend a few minutes to answer our questions. Be sure that the results will be treated confidentially and only used for the purpose of the analysis, and the collected data will not be shared.

Thank you for your highly appreciated support – your little, but important contribution to our common sustainable future.

For further information on MYSUN, kindly visit <https://www.mysuncampus.eu/> and like our facebook <https://web.facebook.com/mysuncampus/>

Regards,
Malaysia Sustainable University Campus Network (MYSUN)



1. Higher Education Institution: _____

2. Department/Faculty: _____

3. Your role:
 - Teaching staff
 - Management Staff
 - Administrative staff
 - Technical staff
 - Librarians
 - Others, please specify: _____

4. Gender
 - Male
 - Female

5. Age
 - Below 30 years old
 - 30 – 35 years old
 - 36 - 40 years old
 - 41 years old and above

6. Nationality
 - Malaysian
 - Non-Malaysian; please specify: _____

7. Years Working at/Associated with Institution (please specify the duration):

8. Your awareness of sustainability effort in the campus.
 - I don't know at all
 - I've heard of it
 - I know to some extent
 - I know very much

9. Your awareness of specific office for sustainability in the campus.
 - I don't know at all
 - I've heard of it
 - I know to some extent
 - I know very much

10. Your participation opportunity for sustainability.
 - High
 - Average
 - Low
 - Not at all



11. The following set of statements relate to your view of sustainable university in your campus. Please indicate your response on each of the services provided by ticking “√” in the space of a given number below.

1	2	3	4	5	6
<i>No knowledge</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>

NO		SCALE					
		1	2	3	4	5	6
1	Physical Initiatives						
1.1	Campus transportation should be a top priority in university sustainability issues.						
1.2	Campus land-use should be a top priority in university sustainability issues						
1.3	Campus building planning should be a top priority in university sustainability issues.						
1.4	University should install solar panels on campus buildings.						
1.5	Sustainable university should reduce the ecological footprint of the university.						
1.6	Sustainable university should reuse campus waste.						
1.7	Sustainable university should use renewable and safe energy sources.						
2	Knowledge on Sustainability of the Students						
2.1	Sustainable university should incorporate environmental knowledge into all relevant disciplines at all levels of study.						
2.2	Sustainable university should arrange opportunities for students to study campus and local sustainability issues.						
2.3	Sustainable university should consult students on their opinions of sustainability.						
2.4	Sustainable university should provide incentives for students to participate in environmentally friendly activities.						
2.5	Sustainable university should encourage critical thinking about sustainability issues.						
3	University Management						
3.1	Sustainable university should perform regular sustainability audits on campus.						
3.2	Sustainable university should perform sustainability audits on the surrounding community.						
3.3	Sustainable university should engage in community outreach programs that benefit the local environment.						
3.4	Sustainable university should create green community centres to benefit the local environment.						
3.5	Sustainable university should create partnerships with government, non-governmental organisations, and industry working toward sustainability.						



3.6	Sustainable university should encourage students to participate in various volunteer activities around the community.						
3.7	Sustainable university should encourage staff to participate in various volunteer activities around the community.						
3.8	Sustainable university should create a written statement of their commitment to sustainability.						
3.9	Each department within the sustainable university must create their own written statement of their commitment to sustainability.						
3.10	Sustainable university should be included among the criteria for the hiring, promoting, and granting tenure to faculty based on their knowledge of and work in sustainability.						
3.11	Sustainable university should establish policies allowing for the termination of faculty if they fail to incorporate environmental strategies into their course material and research.						
3.12	Sustainable university should emphasize sustainability through support services.						
4	Others						
4.1	Research done on campus must include a summary of potential environmental issues that may be faced during practical implementation.						
4.2	Sustainable university should establish environmentally and socially responsible purchasing practices.						
4.3	Sustainable university should provide support for individuals who seek environmentally and socially responsible careers.						
4.4	Sustainable university should provide monetary reimbursement for individuals taking environmental courses.						
4.5	There should be greater self-reliance within the sustainable university.						
5	Budget						
5.1	Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide						
5.2	Funding is the main problem to implement sustainable development initiatives in my campus.						

Source: Adapted from Nejati and Nejati (2013)

12. The following set of statements relate to your view of research and development in your campus. Please indicate your response on each of the services provided by ticking “√” in the space of a given number below.

1	2	3	4	5	6
<i>No knowledge</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>

NO	RESEARCH	SCALE					
		1	2	3	4	5	6
1	Significant level of research directly on sustainability is conducted						
2	Significant research funding is allocated to sustainability						



3	Student research opportunities in sustainability are offered						
4	An institute(s) focusing on researching/teaching sustainability exists						
5	A collaboration with industries to create a better sustainability direction						
6	Living laboratory (the integrated organisational, technological and socio-economic approach in which a university uses its assets and facilities to investigate, test or demonstrate innovative technologies or services by, with and for their community) should be encourage in overcoming a growing and emerging sustainability challenges						

Source: Adapted from Shriberg (2002)

13. The following set of statements relate to your view of student opportunities in your campus. Please indicate your response on each of the services provided by ticking “√” in the space of a given number below.

1	2	3	4	5	6
<i>No knowledge</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>

NO	STUDENT OPPORTUNITIES	SCALE					
		1	2	3	4	5	6
1	The university provides students with sustainable accommodation.						
2	The university provides students with environmental sustainability practice facilities.						
3	The university establishes student groups with sustainability focus.						
4	The university encourages student groups to participate in sustainability initiatives.						
5	The university encourages students to consider job fairs and career counselling focused on work in sustainable enterprises.						
6	The university encourages students to consider those enterprises with pledge of social and Environmental responsibility.						

Source: Adapted from Yuan and Zuo (2013)

14. The following set of statements relate to your view of social responsibility in your campus. Please indicate your response on each of the services provided by ticking “√” in the space of a given number below.

1	2	3	4	5	6
<i>No knowledge</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>



NO	SOCIAL RESPONSIBILITY	SCALE					
		1	2	3	4	5	6
1	Security within the campus.						
2	Provide adequate access to people with disability .						
3	University publishes stand-alone sustainability report regularly.						
4	University has a dedicated website for campus sustainability.						
5	Community engagement.						
6	Charitable activities.						
7	Has a dedicated section in their annual report dedicated to sustainability						
8	University is accredited by independent organisation such as Global Reporting Initiative.						
9	Has a dedicated sustainability officer.						
10	Has a dedicated sustainability division.						
11	Supports outside organisations that focus on sustainability.						

Source: Adapted from Yuan and Zuo (2013)

15. Do your university have any specific unit on sustainability?

- Yes
- No
- I don't know

16. Please describe the greatest strengths of your institution in terms of sustainability.

17. Please describe the greatest weaknesses of your institution in terms of sustainability.

18. Please describe the key factors that support the advancement of environmental and sustainability issues on your campus.



19. What factors do you think account for resistance to or lack of responsiveness to these concerns?

20. Do you think your university should strengthen/improve its action on sustainability?

Yes

No

21. Would you be interested in participating in trainings/activities or receiving information related to campus sustainability?

Yes

No

Thank you for your participation.

Note: question 16 to 19 is not mandatory/compulsory

Appendix 2.2

Survey Questionnaire_Students



Warm Greetings!

Dear Respected Respondents,

While we are still fighting and struggling for Corvid-19 crisis, at the meantime, an even worse crisis is dawning behind our horizon: the **changing climate**, representing our common future getting into danger.

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Our study aims to find out how to move towards a sustainable campus development, under the framework of the EU funded Erasmus+ project MYSUN (Contract #609969-EPP-1-2019-1-MY-EPPKA2-CBHE-SP).

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For further information on MYSUN, kindly visit <https://www.mysuncampus.eu/> and like our facebook <https://web.facebook.com/mysuncampus/>

Regards,
Malaysia Sustainable University Campus Network (MYSUN)



1. Higher Education Institution: _____

2. Department/Faculty: _____

3. Current level of study
 - Foundations
 - Diplomas
 - Bachelors
 - Masters
 - PhD

4. Study Mode
 - PART-TIME
 - FULL-TIME

5. Gender
 - Male
 - Female

6. Age
 - Below 20 years old
 - 21 – 25 years old
 - 26 - 30 years old
 - 31 years old & above

7. Nationality
 - Malaysian
 - Non-Malaysian; please specify: _____

8. Study period at your current university
 - Less than 1 year
 - Less than 3 years
 - Less than 5 years
 - 5 years and above

9. I have participated in student activities focused on sustainability.
 - Yes
 - No

10. The following set of statements relate to your knowledge of Sustainable Development Goals (SDG) and sources of information. Please indicate your response on each of the services provided by ticking “√” in the space of a given number below.



1	2	3	4	5	6
<i>No knowledge</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>

NO		SCALE					
		1	2	3	4	5	6
1	I know what the Sustainable Development Goals are						
2	I know the countries to which the Sustainable Development Goals are addressed						
3	I know the time horizon for which the Sustainable Development Goals are designed.						
4	I know the number of Sustainable Development Goals and could indicate one of their goals.						
5	I have received information about the Sustainable Development Goals by email and/or Social Networks.						
6	I have received information about the Sustainable Development Goals from the traditional media (press, radio and/or television)						
7	I have received information about Sustainable Development Goals in formal education (high school, university, etc.).						
8	I have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.).						

Source: Adapted from Zamora-Polo, Sánchez-Martín, Corrales-Serrano, and Espejo-Antúnez (2019)

11. Your understanding of green campus plans/features. Please indicate your response on each of the green campus features provided by ticking “√” in the space of a given number below.

1	2
<i>Yes</i> <i>(if you understand)</i>	<i>No</i> <i>(if you don't understand)</i>

	Survey Questions	SCALE	
		1	2
Energy	Solar Photovoltaic (PV)		
	LED fixtures in campus buildings		
	Wind turbines		
	Solar thermal collectors		
	Geothermal heat pump		
	Light off reminder stickers on switches		
Water	Rainwater harvesting for dorms		
	Water efficient fixtures in restrooms		



Green Buildings	Low-emitting materials (materials producing little emission of atmospheric pollutants)		
	Green building certifications		
	Occupancy sensor control for lighting		
	Ventilation system for IAQ		
Waste Reduction And Recycling	Reusable to-go containers program		
	Lending Library (online program)		
	Outdoor compost bin		
	Campus endorsed Recycling Programs		
Transportation	Electric powered shuttle vehicles in campus		
	Bike Commute Challenge		
	Transit (public transportation passes through campus)		
	Electric Bikes program		
Education And Student Activity	Living Lab Initiative (the integrated organisational, technological and socio-economic approach in which a university uses its assets and facilities to investigate, test or demonstrate innovative technologies or services by, with and for their community)		
	Sustainability volunteer program		
	Campus gardens/ecoparks		
	Sustainability scholar group		
	Sustainability-related and focused courses/modules		

Adopted from: Choi, Y. J., Oh, M., Kang, J., & Lutzenhiser, L. (2017)

12. Your awareness of sustainability issues in your university.

1	2	3	4
<i>I don't know at all</i>	<i>I've heard of it</i>	<i>I know to some extent</i>	<i>I know very well</i>

NO		SKALA/SCALE			
		1	2	3	4
1	Global environmental issues.				
2	Local environmental issues.				
3	Sustainable development				

4	High Education for Sustainable Development.				
5	The extent to which your college/department offers courses which address topics related to sustainability				
6	The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program				
7	Involvement of your college/department in research and projects related to environmental sustainability				
8	Energy conservation practices (including lighting, cooling, ventilation, windows)				
9	Recycling of solid waste (including paper, glass, plastic, metal)				
10	Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)				
11	Sustainable landscaping (e.g., emphasising native plants, biodiversity, minimising lawn, integrated pest management)				
12	Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects)				

Adopted from: Ismaila R. Abubakar, Faez S. Al-Shihri and Sayed M. Ahmed (2016)

13. The following set of statements relate to your opinion on the sustainable services provided by your university. Please indicate your response on each of the services provided by ticking “√” in the space of a given number below.

1	2	3	4	5	6
<i>No Knowledge</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>

NO	SUSTAINABLE UNIVERSITY	SCALE					
		1	2	3	4	5	6
1	Sustainability commitment & monitoring						
1.1	The university has created a written statement of their commitment to sustainability.						
1.2	Each department within the sustainable university has created its own written statement of their commitment to sustainability.						
1.3	Sustainability audits are performed on the surrounding community.						
1.4	Regular sustainability audits are performed on campus.						



2	Community outreach								
2.1	The university engages in community outreach programs that benefit the local environment.								
2.2	The university has created green community centres to benefit the local environment.								
2.3	The university has created partnerships with government, non-governmental organisations, and industry working toward sustainability.								
3	Land use and planning								
3.1	Campus building planning should be a top priority in university sustainability issues.								
3.2	Campus land-use should be a top priority in university sustainability issues								
4	Research								
4.1	Supports students to examine the campus sustainability issues and report to the University								
4.2	Explore external funding opportunities for green building								
4.3	Engage in sustainable development network at regional, national or international levels								
4.4	The university encourages multidisciplinary and interdisciplinary research on sustainability								
4.5	Supports student initiatives such as environmental newsletter								
5	Student Opportunities								
5.1	The university provides students with sustainable accommodation.								
5.2	The university provides students with environmental sustainability practice facilities.								
5.3	The university establishes student groups with sustainability focus.								
5.4	The university encourages student groups to participate in sustainability initiatives.								
5.5	The university encourages students to consider job fairs and career counselling focused on work in sustainable enterprises.								
5.6	The university encourages students to consider those enterprises with pledge of social and Environmental responsibility.								
6	Social Responsibility								
6.1	Security provision within the campus.								
6.2	The university provides adequate access to people with disability .								
6.3	The university publishes stand-alone sustainability report regularly.								
6.4	The university has a dedicated website for campus sustainability.								
6.5	Community engagement.								
6.6	Charitable activities.								



6.7	The university has a dedicated section in their annual report dedicated to sustainability						
6.8	The university is accredited by independent organisation such as Global Reporting Initiative.						
6.9	The university has a dedicated sustainability officer.						
6.10	The university has a dedicated sustainability division.						
6.11	The university supports outside organisations that focus on sustainability.						

14. Are you satisfied with your campus sustainability approaches thus far.

Yes

No

Source: Er & Rewathi (2016)

15. Please provide some suggestion(s) for your university to improve their campus sustainability initiatives in future.

Source: Er & Rewathi (2016)

16. Would you be interested in participating in trainings/activities or receiving information related to campus sustainability?

Yes

No

Thank you for your participation.

Note: question 15 is not compulsory

Appendix 3

Pre-Test Survey Analysis Report

Pilot Test Analysis

Part 1: Students Version

1.1 Profile of Respondents

Variable		Frequency	Percent
Gender	Female	23	54.8
	Male	19	45.2
Age	21-25 years old	24	57.1
	26-30 years old	5	11.9
	31 years old and above	8	19.0
	Below 20 years old	5	11.9
Nationality	Indonesia	1	2.4
	Malaysian	40	95.2
	Spanish	1	2.4
Current Level of Study	Bachelors	27	64.3
	Masters	7	16.7
	PhD	8	19.0
Study Mode	FULL-TIME	42	100.0
Period of Study in the Current University	Less than 1 year	8	19.0
	Less than 2 years	5	11.9
	Less than 3 years	4	9.5
	Less than 4 years	17	40.5
	More than 4 years	8	19.0
Living on Campus	No	11	26.2
	Yes	31	73.8
Previous Experience of Living on Campus	No	4	9.5
	Yes	37	88.1
	99	1	2.4
Experience of Enrolling Student Activities Focused on Sustainability	No	13	31.0
	Yes	29	69.0

$N = 42$

99=*Missing Value*

1.2 Reliability Analysis

Variable	No. of Items	Cronbach Alpha
Knowledge of Sustainable Development Goals	8	0.927
Awareness of Sustainability Issues	12	0.874
Sustainability Commitment & Monitoring	4	0.697
Waste and Energy	3	0.752
Community Outreach	3	0.607
Land Use and Planning	2	0.894
Research	5	0.847
Students Opportunities	6	0.858
Social Responsibility	11	0.924

Cronbach alpha for all the latent variables are greater than 0.7 (Hair et al., 2017) except sustainability commitment & monitoring and community outreach, which are 0.697 and 0.607 respectively. However, both are acceptable as the Cronbach alpha will improve when sample size increases.

Part 2: Stakeholders Version

2.1 Profile of Respondents

	Variable	Frequency	Percent
Higher Education Institution	FH JOANNEUM - University of Applied Sciences, Austria, Bad Gleichenberg	1	5.9
	MMU	2	11.8
	Unimas	1	5.9
	Universiti Malaysia Pahang	4	23.6
	Universiti Malaysia Sarawak	2	11.8
	Universiti Teknologi MARA	4	23.5
	University of Alicante	1	5.9
	UPM	1	5.9
	UTM	1	5.9
	Department/Faculty	Bursary	1
Center for Post Graduate Faculty Business & Management		1	5.9
Dep. of Management		1	5.9
Department of Economics and Finance Studies		1	5.9
Dept. of Electrical Engineering		1	5.9
Development & Facility management		1	5.9
Economic and Finance/ Business and Management		1	5.9
F resource science and technology		1	5.9
FACULTY OF ENGINEERING		1	5.9
Faculty of Social Sciences & Humanities		1	5.9
FAKULTI KEJURUTERAAN MEKANIKAL DAN AUTOMOTIF		2	11.8
FET		2	11.8
Institute of Biodiversity and Environmental Conservation		1	5.9
Research Management Service		1	5.9
SKE		1	5.9
Role		Administrative staff	2
	ere	1	5.9
	Student	2	11.8
	Teaching staff	10	58.8
	Technical staff	2	11.8
Gender	Female	5	29.4
	Male	12	70.6

Nationality	Austrian	1	5.9
	Malaysian	15	88.2
	Spanish	1	5.9
Years of Working at/Associated with Institution	< 5 Years	3	17.6
	5-10 Years	3	17.6
	11-15 Years	1	6.0
	16-20 Years	3	17.6
	21-25 Years	3	17.6
	More than 25 Years	3	17.6
	99	1	6.0

$N = 17$

99=missing value

2.2 Reliability Analysis

Measurements under Stakeholders' View of Research and Development in Campus

Variable	No. of Items	Cronbach Alpha
Research	6	0.695
Student Opportunities	6	0.847
Social Responsibility	11	0.948

Cronbach alpha are greater than 0.7 for the latent variables of student opportunities and social responsibility except research with a value of 0.695. However, it is acceptable as it will be improved when sample size increases.

Note:

- (i) The reliability analysis was not performed for stakeholders' view of sustainable university in campus. This is due to sample sizes which are too small for each position.
- (ii) Not necessary to split the views of respondents based on their positions. The university sustainability issues are applicable to all the staffs in the university.
- (iii) Comparative studies of views among positions cannot be done too.

Appendix 4.1

Student Respondent Summary 20 October 2020

University Name	Number of Respondent
Multimedia University (MMU)	76
University Technology Malaysia (UTM)	82
International collage of yayasan melaka (ICYM)	25
University of Kuala Lumpur (UNIKL)	18
Melaka International College of Science and Technology (MiCoST)	36
The University of Sheffield	5
UCSI University	14
Universiti Teknologi MARA Pasir Gudang(UiTM Pasir Gudang)	15
Universiti Teknologi MARA (UiTM)	33
Universiti Putra Malaysia (UPM)	120
University of Baghdad	1
University of Cyberjaya	2
Universitat Oberta de Catalunya (UOC)	2
University Malaysia Sabah (UMS)	213
Universiti Teknikal Malaysia Melaka (UTeM)	28
Universiti Tun Hussein Onn Malaysia (UTHM)	177
Universiti Utara Malaysia (UUM)	56
Kolej Teknikal Yayasan Sabah (KTYS)	15
University of Malaya (UM)	45
Doshisha University	2
Universiti Malaysia Pahang (UMP)	90
Universiti Teknologi PETRONAS Malaysia (UTP)	1
Universiti Sultan Zainal Abidin (Unisza)	27
University of Malaysia, Sarawak (UNIMAS)	81
Universiti Teknologi MARA Shah Alam (UiTM SHAH ALAM)	12
Universiti Teknologi MARA Cawangan Sabah (UITM Sabah)	34
UiTM Cawangan Selangor. Kampus Puncak Alam (UITM Puncak Alam)	26
UiTM Cawangan Sarawak Kampus Samarahan (UiTM Samarahan)	20
Universiti Malaysia Perlis (UNiMAP)	13
Tunku Abdul Rahman University College (TAR UC).	16
Kolej Poly-Tech MARA (KPTM)	6
Kolej Poly-Tech MARA Bangi (KPTM Bangi).	83
Kolej poly tech Mara Kuala Lumpur (KPTM Kuala Lumpur)	2
University College Sabah Foundation, Sanzac, Sabah (UCSF)	15
Universiti Tenaga Nasional (UNITEN).	54
Universiti Islam Antarabangsa Sultan Abdul Halim Mu'adzam Shah (UniSHAMS)	23

Appendix 4.2

Analysis Report_Students

Table of Contents

Report: Survey from Students	5
Table: Allocation of Questions	5
1.0 Governance (14, 15).....	5
Table 1.1: Are you satisfied with your campus sustainability approaches thus far?.....	6
Table 1.2: Please provide some suggestion(s) for your university to improve their campus sustainability initiatives in future.....	6
2.0 Awareness (10)	31
Table 2.1: I know what the Sustainable Development Goals are	32
Table 2.2: I know the countries to which the Sustainable Development Goals are addressed	32
Table 2.3: I know the time horizon for which the Sustainable Development Goals are designed... ..	32
Table 2.4: I know the number of Sustainable Development Goals and could indicate one of their goals	33
Table 2.5: I have received information about the Sustainable Development Goals by email and/or Social Networks.....	33
Table 2.6: I have received information about the Sustainable Development Goals from the traditional media (press, radio and/or television).....	33
Table 2.7: I have received information about Sustainable Development Goals in formal education (high school, university, etc.)	34
Table 2.8: I have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.).....	35
3.0 Motivation (13, 11)	36
Table 3.1: University has created a written statement of their commitment to sustainability	39
Table 3.2: Each department within the sustainable university has created its own written statement of their commitment to sustainability	39
Table 3.3: Sustainability audits are performed on the surrounding community	39
Table 3.4: Regular sustainability audits are performed on campus	40
Table 3.5: University reuses campus waste	40
Table 3.6: University uses renewable and safe energy sources	41
Table 3.7: University emphasises sustainability through support services (e.g. Recycling bins across campus, efficient public transport throughout university, etc.).....	41
Table 3.8: University engages in community outreach programs that benefit the local environment	41
Table 3.9: University has created green community centers to benefit the local environment.....	42
Table 3.10: University has created partnerships with government, non-governmental organisations, and industry working toward sustainability.....	42
Table 3.11: Campus building planning should be a top priority in university sustainability issues..	43
Table 3.12: Campus land-use should be a top priority in university sustainability issues.....	43

Table 3.13: University supports students to examine the campus sustainability issues and report to the University.....	44
Table 3.14: Engage in sustainable development network at regional, national or international levels	44
Table 3.15: Encourages multidisciplinary and interdisciplinary research on sustainability	44
Table 3.16: Supports student initiatives such as environmental newsletter	45
Table 3.17: Provides students with sustainable accommodation	45
Table 3.18: Provides students with environmental sustainability practice facilities.....	45
Table 3.19: Establishes student groups with sustainability focus	46
Table 3.20: Encourages student groups to participate in sustainability initiatives	46
Table 3.21: Encourages students to consider job fairs and career counselling focused on work in sustainable enterprises.....	47
Table 3.22: Encourages students to consider those enterprises with pledge of social and environmental responsibility	47
Table 3.23: Security provision within the campus.....	47
Table 3.24: Provides adequate access to people with disability	48
Table 3.25: University has a dedicated website for campus sustainability	48
Table 3.26: Community engagement.....	49
Table 3.27: Charitable activities.....	49
Table 3.28: Has a dedicated section in their annual report dedicated to sustainability	49
Table 3.29: University is accredited by independent organisation such as Global Reporting Initiative	50
Table 3.30: Has a dedicated sustainability officer	50
Table 3.31: Has a dedicated sustainability division	51
Table 3.32: Supports outside organisations that focus on sustainability	51
4.0 Design (11, 12)	52
Table 4.1: Solar Photovoltaic (PV).....	54
Table 4.2: LED fixtures in campus buildings.....	54
Table 4.3: Light off reminder stickers on switches	54
Table 4.4: Rainwater harvesting for dorms	54
Table 4.5: Water efficient fixtures in restrooms.....	55
Table 4.6: Low-emitting materials	55
Table 4.7: Occupancy sensor control for lighting	55
Table 4.8: Ventilation system for indoor air quality (IAQ).....	55
Table 4.9: Reusable to go containers program	56
Table 4.10: Lending Library (online program).....	56
Table 4.11: Outdoor compost bin.....	56

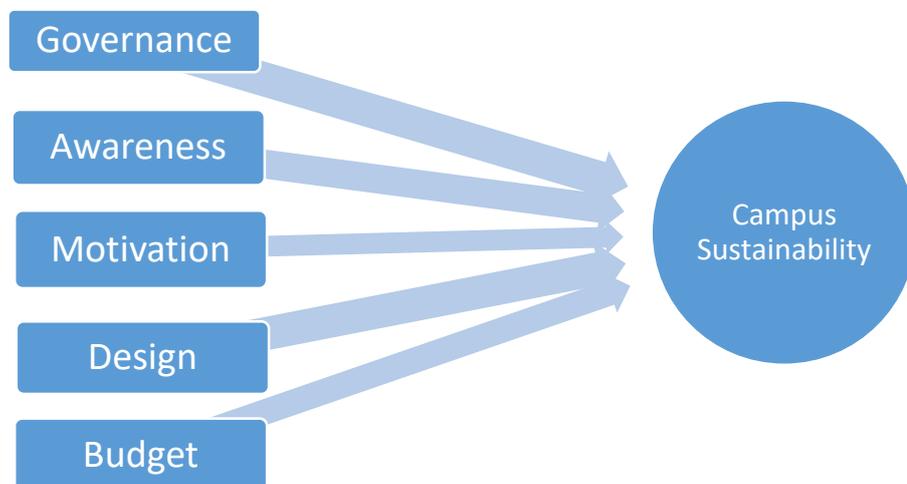
Table 4.12: Campus endorsed Recycling Programs	57
Table 4.13: Electric powered shuttle vehicles in campus	57
Table 4.14: Bike Commute Challenge	57
Table 4.15: Electric Bikes program.....	57
Table 4.16: Living Lab Initiative.....	57
Table 4.17: Sustainability volunteer program.....	58
Table 4.18: Campus gardens/ecoparks.....	58
Table 4.19: Sustainability scholar group	58
Table 4.20: Sustainability-related and focused courses/modules.....	58
Table 4.21: Global environmental issues	59
Table 4.22: Local environmental issues	59
Table 4.23: Sustainable development.....	59
Table 4.24: High Education for Sustainable Development	60
Table 4.25: The extent to which your college/department offers courses which address topics related to sustainability	60
Table 4.26: The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program.....	60
Table 4.27: Involvement of your college/department in research and projects related to environmental sustainability	61
Table 4.28: Energy conservation practices (including lighting, cooling, ventilation, windows)	61
Table 4.29: Recycling of solid waste (including paper, glass, plastic, metal).....	61
Table 4.30: Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)	61
Table 4.31: Sustainable landscaping (e.g., emphasizing native plants, biodiversity, minimising lawn, integrated pest management)	62
Table 4.32: Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects).....	62
5.0 Budget (13-5.2)	63
Table 5.1: Explore external funding opportunities for green building	63
6.0 Conclusion.....	63
Appendix	67
Figure 6.1: Model Fitness.....	67
Table 6.1: Model Fit Summary	68
Table 6.2: Correlations: (Group number 1 - Default model)	69
Figures of scale distributions for all individual items.....	70
~~~ End of Page ~~~ .....	143

## Report: Survey from Students

### Table: Allocation of Questions

#### Students

Dimension	Questions	%
1.0 Governance	14-15	3.2
2.0 Awareness	10	14.6
3.0 Motivation	13	50
4.0 Design	11, 12	29
5.0 Budget	13 (4.2)	3.2



#### 1.0 Governance (14, 15)

Table 1.1 indicates that 794 respondents (70.5%) are satisfied with campus sustainability approaches thus far while 331 respondents (29.4%) are not satisfied.

**Table 1.1: Are you satisfied with your campus sustainability approaches thus far?**

**Are you satisfied with your campus sustainability approaches thus far?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	419	29.3	29.3	29.3
	Yes	1012	70.7	70.7	100.0
	Total	1431	100.0	100.0	

Table 1.2 indicates 448 different answers from respondents when they were asked to provide some suggestion(s) for your university to improve their campus sustainability initiatives in future.

**Table 1.2: Please provide some suggestion(s) for your university to improve their campus sustainability initiatives in future.**

1) Do more campaign to promote sustainability and organize competition for students on sustainability development
2) Organise some programs on that, invite students to participate and give a formal rewards or returns to student who participated it to encourage them to join.
3) Use more renewable energy to reduce electricity costs
4) The Universiti management must play a big role in sustainability.
5) Get educated – If you are really interested in environmental sustainability practices, consider pursuing a degree in the field so that you can help to educate others as well.
6) emphasize the waste sorting practice around campus and student residential areas, prepare more recycle bins and enhance students' knowledge such as the correct way to discard recyclable items (i.e. clean the plastic container before throwing into the recycle bin and etc.)
7) FOR STARTING, AUTOMATED WITCHING LIGHT,
8) Stairs, Library facility, website security, ceiling and windows
9) Gave student more information about sustainable energy and encourage student to join program related with sustainable energy
10) I have no any suggestions. Currently I am comfortable and satisfied with my college sustainability.
11) Penanam pokok pokok buah buahan/pokok herba/pokok nadil/pokok teduhan terutama pokok yg telah pupus untuk dua fungsian iaitu kelastarian kampus dan juga pembelajaran generasi akan datang
12) More activity to student.
13) Sustainability shiuld become the new norm
14) More awareness campaign
15) Used renewable energy for lighting
16) use solar power
17) Anything that could decrease the production of carbon
18) Used one user-oriented website only to spread the news on the sustainability of universitu.
19) Give talk to students related to sustainability
20) more campaign to encourage more people into this knowledge

<p>21) 1. Currently, lamp post are using common bulb. Should be using LED light to save energy and moving toward sustainable energy usage.</p> <p>2. Guard has to turn on and off the corridor light of academic building during night time. Should use motion detector as a switch for the lightning to save electricity.</p> <p>3. Should install motion detector in all of class room to ensure the light or fan is turned off when there is no ppl in the classroom if the student forgot to turn off those thing.</p> <p>4. Change all the pendaflour lamp to led lamp which will save lot of energy and the led lam can equipped with motion detector where if there is no ppl in the hallway, the lamp will be dimmed.</p> <p>5. Should make sustainable energy program once a year to ensure students have extra knowledge about the importance of implement the sustainable in daily life.</p>
22) Dont use paper for submit assignment, just online. Safe paper.. green. Help tree
23) Can i just get my postage free without paying?
24) Sport
25) Nothing
26) Plant more trees.
27) i think university should to provide esbility
28) lend the student some money to help them buy better laptop fot It student
29) Their facility
30) More painting campus building
31) Need more enjoyable culture
32) Plant more trees.
33) more internet
34) Investment into solar powered vehicles & eatablishment of sustainability groups within students
35) Provide more trash bins around the campus/ college
36) Nothing in mind at this moment
37) Make a new shaded walking path to campus all the way from college
38) Go for paperless. Educate more recycling program. Solat system bus is needed
39) Improve the awareness fo student
40) About transportation planning

41) Introduce more latest sustainability techniques and accessories.
42) Enabling students to take part in agriculture 'grown their own food'
43) More wind - and solar-powered street lights can be installed
44) More Efficient sustainable services
45) Provides A.C for rooms
46) Provide hand dryers in toilets instead of providing paper towels
47) Always open for new initiatives
48) Ban plastic packaging
49) The campus should emphasize more on how to provide a sustainability options for all of the stakeholders.
50) Increased use of IoT technology for smart lighting and smart air conditioner
51) Have more courses. Have a sustainability division and engage with the students.
52) Use solar energy
53) solar and wind powered, recycling bins and waste bins
54) Allocate recycle bin for electronic waste (such as batteries)
55) Encourage students to do only online assignments to reduce paper usage
56) Campus should provide enough accommodation for its International students, as there are many hostels for local students, but there is no proper accommodation facility for international students and their families, if campus provide proper on-campus facility for their accommodation it will help students to save time and energy consumed for their transportations, moreover, a metro line lying near the campus but there is no stop available for UPM on KTM, if one is established it will also help to solve the transportation problem of the students and it will be a step towards sustainable energy consumption and sustainability.
57) Use reusable energy
58) Create more awareness to students (under graduate)
59) Maintain and enhance the green campus
60) Plant more trees to have more greener environment.
61) Provides A.C for rooms
62) Provides A.C for rooms

63) Electric buses
64) In my opinoin.. I think utm have great campus.. No suggestion
65) Solar energy and rain density utilization is the best way to save energy
66) Making better services on campus
67) more open communication about SDGs and active engagement.
68) provide more facilities
69) Let all college use the bicycle not certain
70) It would be better if there's a campaign on sustainability that should be celebrated as fun as the convocation. Make it grand! Make it fun! Filled with attractive games, vendors & such 🎮😊
71) Increase zero waste campaign
72) Electric buses
73) provide more facilities
74) Build more bicycle and walking path to reduce carbon emission
75) give the right exposure (in terms of sustainability initiatives; be it competition or funding) to the right department or course, such as landscape architecture course because LAr revolves around the outer landscape
76) Non-friendly and not integrated pedestrian walkways
77) build green building and eco garden
78) Add wifi
79) Everything is good
80) Lack of awareness of sustainability initiatives among students needs to be the first agenda of the University. All students should be made aware regarding sustainability goals and encouraged to look into ways to reach them. Furthermore, more emphasis should be placed on trying to achieve these goals with the help of students volunteering. University should publicise about volunteering for sustainability more to create more awareness. Most students have no idea about volunteering in this, especially since no one had any idea that they were even doing this. University should do a better job at being a university.
81) Room for student 24hr and big library
82) Lack of outdoor activity. Should do more outdoor club than takewando and wataniah.
83) self defense for student are highly recommended, not for war but for them self

84) Offer more professional courses if possible
85) Engage more activities with the students
86) banyak kan lagi lab hands on
87) Increase recycling bin around campus,
88) Structured lectures be organized periodically to all students for awareness, need and benefit of campus sustainability practice in the areas of energy, water, transport and waste management
89) Improve student activity such as sports day and etc
90) Kurangkan harga sewa asrama kepada harga student
91) Do more program
92) Provide sustainable enviroment in each faculty for awareness
93) do a programme
94) make a comfortable class
95) Good facility
96) Upgrade the utilities
97) should practice some initiative the sustainable activity
98) no improvement
99) Make more ecogardens around the university that can be access by student.
100) Increase Planting Plants
101) Please large of recycle places at campus
102) Adding more green elements
103) Need more information given in talk or program
104) Plant more trees and flowers
105) Increase the use of sustainable transportation to improve air quality as well as noise levels.
106) Planting more trees, provide more recycle bins

107) Please let the every students to plant a small tree or something. increase the number of buses and try to restrict the vehicles used by the students instead offer or borrow bicycles for them to use. Moreover, implement a practice to gift a plant for new intake students to take care of rather than giving some really thin files because that will help the nature instead.
108) use renewable energy. put solar panel at every buildings. plus use wind energy as source of electricity
109) more fun activities
110) Installed light sensor lamp throughout the main buildings to save more electricity
111) Educate and enhance students and campus communities to support the campus sustainability initiatives
112) conduct annual activities related to sustainability
113) Expand more budget in sustainability program
114) Recycling program
115) As the management of UMS is only/mainly focuses in KK, I hope UMS should help and promote the effort on other campus branches (eg. UMSKAL) in the sustainable development as well.
116) provide more recycle bin especially for plastic
117) Eco-friendly about power electricity.
118) Our University should implement more renewable source to support the electricity usage and I suggest that our bestari and perwira hostel management should encourage more student know about the recycle knowledge especially after the "pasar malam" it create many rubbish that cannot be recycle, thus we can encourage those student to reduce the wastage of rubbish e.g. polisterin
119) Implementing a course on campus sustainability/ sustainability legislation in campus and making it a compulsory course for all students (Because education is important).
120) Providing more recycle bin
121) Doing a lot of program or seminar or talk about the sustainability or community program
122) Nothing
123) Avoid more deforestation for building construction
124) Providing more recycle bin

125) In my opinion, students also part of members in university. Thus, the opinion of students are importance. I hope that university will give fast respond towards student's complaint. If university delay the student's complaint, this will effect the sustainability goals. Thanks.
126) Put a lot of dustbins around the campus
127) More Roofed-walk-way for student through all the campus building to avoid get wet and sun burn ..
128) A sample of people should observe and advise the population of people
129) Provide more recycle bins at students residential area.
130) More information in campus sustainability
131) In the future, all the faculty needed to make a program monthly in order to educate students and staffs about campus sustainability.
132) Roof for pedestrian, frequent busses during peak hour
133) My college should start thinking of doing this
134) Improve the internet in university to provide more advance studies which include running of work which required higher speed of internet.
135) increase the awareness of having a clean environment everywhere we go, i.e. put rubbish in the bin,
136) add more technology
137) Encourage student to engage in sustainability project
138) PROVIDE REUSABLE ENERGY FACILITIES
139) It would be great if all of the faculty/school participate in promoting this awareness. it would be less effort to achieve Sustainability Campus Goal if we do it together. The collaboration between staff and student also can lead to huge success in this campaign aided and support by Government such Ministry of Higher Education.
140) Set up a microgrid with RE as the main energy source.
141) To improve campus sustainability initiatives in future, donate some unusing clothes or buy green and use less paper.
142) University may make 4R mandatory among all personnel in campus. Implement and practice the habit of 4R among young generation, providing color coded dustbin around campus. Hydroponic project is a cheap and well-suited startup for students to involved in sustainability projects. Also it can help provide additional greenery to the campus landscape.

143) Apply sustainability for all subject project
144) activate more social engagement to the student and society
145) Provide a interconnecting and roof for pedestrian walkway. Fix the loopholes at certain walkway. Fixing the lamp post during the night especially at collage that situated far into the university.
146) Maybe can implement sustainable energy sources, to save cost and help the environment.
147) More buses, recycling bin
148) Start an affordable bike rental programme in every college
149) Implement the whole academic building area for Car free day
150) Need more commitment
151) human lighting sensor in classroom
152) Ban plastic and straw
153) Test
154) menggalakkan aktiviti kesedaran untuk mengekalkan alam sekitar.
155) Provide bicycles and recycle bins
156) The university should create actions to implement the knowledge of sustainability to its students such as more campaigns and charities.
157) Online Learning PKP in pandemic, need university to evaluate students that have problem with internet to study at home.
158) Increase eco park area
159) Provide more recycle trash bin around the campus
160) More greener school environment
161) Raise the awareness of campus sustainability among students through programs.
162) I give my hoping to our university to do the best all time.
163) more opportunity given for being a exchange student
164) CAN IMPROVE IN ALL ASPECTS
165) SO FAR OK

166) Ceramah
167) give allowances
168) The lift that always has problem should be changed into a new one. Air conditioning problem should also be fixed so that students do not have to bear with the hotness. Broken tables and chairs should also be changed to provide comfortness to the students. MMU needs to repaint the inside of its building to make it look better. The campus is starting to look aged.
169) I have no suggestion at this moment.
170) Plan an E-Waste Recycling Drive
171) reduce electricity waste
172) Plant for trees
173) Pembaharuan dari segi kemudahan dalam bilik, bilik mandi, dan beberapa kemudahan di pusat riadah
174) Perhaps waste management as the rainy weather can be put to use
175) Lebih mewar-warkan secara terbuka setiap aktiviti kelestarian tanpa memiluh kos
176) Gardening- to enlarge the existing of plant
177) Campaign on cashless machine and support biodegradable plastics to use with foods. Upgrade facilities especially in labs.
178) Can try to include other field of engineering course
179) Fast wifi
180) Anything will do
181) menyediakan ruang pejalan kaki berbumbung
182) Perbanyakkan kempen mengenai kelestarian kampus
183) Banyak kan tanaman pokok bunga sepanjang perjalanan kaki ke hostel.
184) Refer to other universities that excels in sustainability
185) Untuk pedestrian walk perlu ada bumbung supaya pelajar boleh berjalan ketika pergi dan pulang kelas.
186) Sentiasa menjaga kebersihan
187) Menumpukan lebih kepada pelajar diploma kulinari

188) Maybe can we add more facility equipments to ensure the safetiness of the students.
189) Poor maintenance, dirty and unorganized
190) kelengkapan yang canggih
191) Berikan fasiliti yang indah untuk classroom
192) Must Do More Program
193) Wujudkan sistem solar
194) Sediakan iklan atau kempen kesederan mengenai "kelestarian"
195) use solar system for electricity
196) Menambahbaik fasiliti yg ada
197) Atur masalah air dikampus.
198) Electrical bicycles, solar electricity
199) First, Green campus whereby planting more suitable plants around the campus. Second, make an awareness campaign about the usage of electricity and water to educate all students and staffs.
200) Banyakkan inovasi seperti penggunaan solar
201) Buat tempat belajar sekitar kampus
202) Kemudahan yang disediakan dalam menggunakan sumber yang lebih jimat kuasa dan kurang pencemaran.
203) Avoiding wasted material.
204) Improve on the landscape and the parking lot
205) For a start, my university must provide the 3 recycling bin for papers, plastics & box because that is the main principle to intiate the sustainable development.
206) Mengadakan aktiviti berkaitan dengan lebih kerap agar semua pelajar mengetahui kewujudan aktivi ini.
207) 1. Involving all student to follow.(Compulsory) 2. To make sure student can particapte the activity. 3. To make sure it is always active and make more fun activity that attract student.
208) Memperbanyakkan lagi aktiviti yang berkaitan kelestarian di universiti dan mewajibkan pelajar universiti untuk mengikutinya sebagai aktiviti kokurikulum
209) - water conservation

210) membuat lebih banyak kempen
211) stop single use plastic, lights and air-con is often not turned off after lectures, Ban the sale of bottled water.
212) Give more exposure to all the students and staff
213) To provide the latest info of sustainability to student every week in traditional or modern methods
214) Please improve/replace/fix/maintain the air circulating system in the lab.
215) Lack of implementation
216) Provide 3R bin in campus and build a landscape or garden
217) Penglibatan komuniti melibatkan semua pelajar dan lebih umum bukan hanya kepada pelajar yang mengambil subjek tersebut sahaja. Dan perlu untuk mengambil inisiatif memperkenalkan pelajar mengenai SDG untuk membantu pelajar lebih peka perihai ini.
218) strengthen the concept of campus sustainability
219) eco campus
220) Membuat taman untuk menceriakan kawasan kolej.
221) Kerap melakukan kelestarian ini
222) Menyediakan tong sampah 3R
223) To provide the latest info of sustainability to student every week in traditional or modern methods
224) More awareness among students across the university faculties. Supervisor led topic selection (for more research on sustainability). Reward system for students who uphold sustainability agenda
225) Menyediakan wifi lebih bgi pelajar belajar d kolej
226) Menyediakan wifi lebih bgi pelajar belajar d kolej
227) Mempromosi Info2 kelestarian kepada pelajar. Sanggup berbelanja untuk menaiktaraf bangunan kampus agar cekap Tenaga.
228) Recycle booth untuk student dan staff. They can bring their own recycle item and money in exchange to enhance the culture of recycle within the faculty.

229) pihak universiti boleh memperluaskan lagi inisiatif kelestarian kampus untuk sama sama sokong pembangunan kelestarian demi masa depan negara. antara aktiviti dan inisiatif yang boleh diambil adalah: 1) menganjurkan program program berfokuskan kelestarian untuk pelajar, staf juga komuniti luar. 2) menggalakkan penggunaan basikal didalam kawasan universiti atau di kawasan kawasan tertentu di universiti.
230) Make a program that related to sustainability
231) Ive got no idea at the moment
232) Sentiasa pantau dari semasa ke semasa keadaan terkini University
233) mewujudkan sistem letrik mati sendiri apabila ketiadaan orang
234) improve everything
235) Provide more recycling bins as well as promote recycling activities
236) meningkatkan kualiti dan kualiti seiring dengan pertambahan pelajar universiti
237) Perbanyakkan kenderaan awam seperti bas/ basikal berbayar seperti mana negara Taiwan ada laksanakan dalam kampus, kerana kebanyakan pelajar sering menggunakan grab dan kenderaan sendiri ke kuliah.
238) Mengurangkan pembaziran elektrik dengan menggunakan lampu LED, bukan dengan mengurangkan penutupan lampu jalan pada waktu malam, menyebabkan pelajar dalam kampus mengalami risiko atau bahaya pada waktu malam.
239) Menyediakan lebih taman eko untuk kampus
240) Integrate more green buildings on campus and complete recycle system on campus
241) Everything is good
242) Organize more on programmed that focus on campus sustainability initiatives
243) 1. Perancangan kelestarian Universiti harus dirancang untuk jangka masa 20 tahun ke hadapan (mobility dan stationary asset) Antara kesan tiada perancangan adalah A. Pembaziran wang dalam penyelidikan yang berulang B. Penyelidikan paper based without output (implements) 2. Perancangan kelestarian perlu dilaksanakan seiring dgn penjanaaan peluang pekerjaan baru melalui rombakan ko-kurikulum yang lebih bersesuaian. 3. Penjanaaan pendapatan atau pengurangan pembaziran perlu dijadikan main contribution kepada projek kelestarian

244)	1. Suggestion for university to initiated the project with other NGO/company for sustainability activity and involved the students also. 2. University to provide sustainability e-buletin to all staff and student for knowledge and information
245)	May begin with creating group of students part of the initiative
246)	Memperbanyakkan penggunaan basikat ataupun berjalana kaki dengan menambah pejalan kaki beratap terutamanya di kawasan tumpuan pelajar untuk mengurangkan penggunaan kenderaan
247)	Promote zero waste practices widely among students on campus, vendors, cafeterias any events on campus
248)	Mempromosikannya dengan lebih meluas dan banyak
249)	Provide electric buses around the campus
250)	Amalan gaya hidup hijau diterapkan dalam kehidupan seharian
251)	Perlu lebih efisien untuk meningkatkan kesedaran mengenai kelestarian kampus
252)	Perbanyakkan tempat seperti tanaman yang segar supaya para pelajar dapat membaca dan study group di tempat yang aman lagi segar.
253)	kampus perlu Menyediakan bnyak lagi tong sampah kitar semula
254)	Solar system
255)	Mendekati pelajar
256)	Tukar lampu pendaflour ke LED secara berperingkat di bilik kuliah & office dan asrama
257)	Have sustainable activity once a week
258)	The landscape is terribly not a sight to behold. The university's authority should really make accurate decisions on which area to spend more fundings.
259)	Mewujudkan satu bangunan untuk mengumpulkan barang kita semula
260)	Apply wind turbine at near sea area university
261)	Using more pv solar more
262)	More widespread use of solar energy

263) Organize more activities
264) Mengadakan program kitar semula
265) Install more solar panels; use more automatic lighting; switch to LED lights
266) Perbanyakkan aktiviti luar
267) Make an interesting knowledgeable program about sustainability
268) Please provide more recycle bins in the campus to ease the recycling process
269) Menambah pusat kelestarian
270) Menubuhkan organisasi yang menguruskan kelestarian dan menggalakkan penglibatan semua pelajar untuk setiap tahun
<p>271) Sustainability can be costly and requires careful planning. Unfortunately, most public universities in Malaysia do not take that into consideration during planning phase in campus design. Hence, most universities are humongous and takes up whole lot of land spaces which are eventually left vacant or unused. Such practices have caused inconvenience among staff and students especially people with disabilities. Hence, good public transportation network and proper-sheltered walkways must be provided to ensure sustainability and student safety.</p> <p>Apart from that, the university does not provide reusable utensils for all its cafeterias in campus. Most food and drinks are served with either plastic utensils and plastic cups which generate tons of unnecessary wastes especially during 'bazaar' or festive period. Such wastage can be reduced by having open-tendered services in all cafeterias that provide clean eating utensils.</p> <p>These suggestions might seemed trivial, however, they are all critical elements in ensuring a sustainable and future-proof environment. There is a saying "Great things are done by a series of small things brought together" which help justify the need for small improvements to make our university stand out among others in achieving high sustainability.</p>
272) kampus perlu Menyediakan bnyak lagi tong sampah kitar semula
273) Needed improvement and well repaired
274) Pendedahan awal mengenai program kelestarian harus dimaklumkan lebih awal kepada para pelajar yang menginap di kampus. Selain itu, pendedahan harus diberikan selalu atau mengikut prosedur agar pelajar faham akan peranan mereka dalam melestarikan kampus. Jika pendedahan hanya diedarkan melalui saluran media sahaja dan pihak universiti tidak turun padang bagi membimbing dan memantau mereka, sudah pasti kelestarian tidak dapat dicapai. Kursus mengenai kelestarian, talk mengenai kelestarian, program jejak kelestarian dan juga pesta kelestarian mungkin cadangan yang boleh diguna pakai. Perancangan tanpa pengurusan yang baik juga tiada guna kalau hasilnya tidak ada.

275) Do more activities involving subject matters.
276) Invlovement of students should be increased.
277) Buat banyak kempen
278) Menyediakan tempat membeli barangan kitar semula daripada pelajar sebagai suatu inisiatif kepada pelajar supaya dapat menjaga alam sekitar.
279) Provide more courses related to science and technology regarding energy sustainability
280) Mengajak para mahasiswa untuk mengenalkan kelestarian alam
281) menjalankan gotong royong bergilir mengikut fakulti masing-masing
282) Conduct campaigns about sustainability to students
283) Penyediaan pengangkutan elektrik untuk mengurang penggunaan bahan bakar sekaligus mengurangkan kos.
284) Pembersihan longkang kolej yg kerap
285) More involved approach when it comes to raising awareness and educating students at faculty and program levels.
286) More intresting programs on this purpose
287) Encourage more students into participating in program involving sustainability by introducing it more during class and teach the relationship between them.
288) Create more awareness activities regarding sustainability to expose more of the purpose to students in campus.
289) Aplikasikan teknologi hijau sepenuhnya.
290) Repair showers to increase water saving efficiency
291) Make informed choices
292) Using battery powered bus and light sensors.
293) Have more activities that involve the students
294) Memastikan kosisten dalam membuat kitaran semula, Mengadakan kempen kesedaran Alam sekitar, Mengadakan aktiviti gotong-royong, Mengamalkan konsep rumah hijau
295) Memastikan kosisten dalam membuat kitaran semula, Mengadakan kempen kesedaran Alam sekitar, Mengamalkan konsep rumah hijau, Mengadakan pertandingan kitar semula
296) Repair showers to increase water saving efficiency

297) Develop more trees in campus
298) Create an open Environmental club in which can be participated by every student from different faculty
299) Incorporate more sustainable approaches practically in the student's campus as sustainability is mainly thought in theoretical classes mostly.
300) Starts with dividing the waste disposal accordingly, so that we can reduce and recycle at the same time.
301) Electric bus
302) UMS should provide sufficient sustainable transportation for students and recycle more than half of the waste produced also use should use sustainable resources in the campus.
303) Please ensure all initiated sustainable projects are being constantly monitored and continuous effort to keep it ongoing and incorporate into the syllabus/lifestyle/regulations so that it can become a habit/lifestyle for students to bring with them to the society.
304) Hebahan yang lebih meluas dan tanpa henti oleh pihak berkenaan
305) Mengadakan banyak program mengenai Penjagaan Alam Sekitar oleh Jabatan-jabatan dalam universiti dan mahasiswa.
306) Lebih banyak aktiviti yg melibatkan para pelajar dan staf si universiti
307) No suggestion
308) Have more activities that involve the students
309) More usage of green power sources and eco-friendly transport
310) Provide more continuous information on the campus sustainability initiatives
311) Melancarkan kelestarian dengan lebih berkesan di semua tempat dalam universiti
312) Setakat ini, tiada lagi apa2 cadangan.. hanya sahaja mungkin pihak Universiti dpt membuka sebuah taman botani dalam kawasan universiti agar serba sedikit dapat meningkatkan awareness dalam kalangan pengguna.. cuma, mohon pihak Universiti pertimbangkan diskaun yuran sahaja..
313) Increase awareness to student and staff of UMS

<p>314) solar panel buildings  farm to table garden  campus without straw  bicycle rental  motorcycle rental  planting trees month  Led lights  Hire one sustainable officer at each faculty or maximize security guard to ensure electricity and water taps are off.</p>
<p>315) Encourage green educational on every syllabus</p>
<p>316) lebih memperhebatkan kempen</p>
<p>317) paperless or minimum class notes, seminar notes, corporate annual report.</p>
<p>318) Skuter elektrik dalam kampus</p>
<p>319) We need more facilities</p>
<p>320) mengamalkan aktiviti bebas tanpa kenderaan bermotor sehari dalm seminggu</p>
<p>321) As a student in UMS, I don't really see much on the sustainability stuff</p>
<p>322) University's commitment for 3R is encouraging,however the implementation is not being monitored closely. For instance the trash in different types off bins are not being managed as supposed to be due to lack of supporting practices from the workers. When the workers emptying the trash bin, all the trash is placed in one plastic trash,which makes the 3R programme become useless. Besides, campus also can launch a programme on the composting practices in campus. Students from agriculture department can do a knowledge sharing on the composting in campus to not only fertilize the campus area but to manage waste more efficiently.</p>
<p>323) Kelestarian kampus perlu di jalankan secara berperingkat mengikut kepentingan kesesuaian.</p>
<p>324) Go digital</p>
<p>325) mengenakan denda kepada orang yang tidak bertanggungjawab membuang sampah merata tempat</p>
<p>326) Mengalakkan activities yg mengeluarkan peluh</p>
<p>327) Berikan lebih pendedahan/kempen kepada pelajar. Anjurkan aktiviti tentang kelestarian kampus di dlm universiti</p>

328) menyediakan tempat duduk bersifat kelestarian di sekitar perhentian bas agar pelajar-pelajar yang menunggu bas tidak terlalu penat berdiri. Saya cadangkan demikian kerana, ramai pelajar yang terpaksa berdiri lama untuk beratur dan kepanasan. Tambahan pula mereka akan merasa penat berdiri dan kurang bertenaga untuk memberi fokus untuk kelas peajaran seterusnya. Hal ini saya alami nya sendiri berserta rakan-rakan.
329) Kerap sebarkan infomasi
330) A sustainable transportation such as bicycles, shuttle buses, carpool initiative
331) Menukar lampu jalan kepada led solar
332) Enhance student engagements in sustainability activities
333) Memperluaskan lagi dan memantau program lestari dijalankan di seluruh campus agar program lestari terus berjalan kerana telah banyak program seperti ini tidak bertahan lama. Selain itu, memastikan semua pelajar serta pegawai Universiti terdedah dengan inisiatif kelestarian ini, dan menerapkan sifat peduli akan alam sekitar dalam rutin harian, termasuk mengambil kira aspek-aspek kelestarian dalam setiap program yang dijalankan atau program dianjurkan oleh Universiti, di dalam mahupun di luar kampus, seperti tong sampah kitar semula dan penjimatan penggunaan air dan elektrik.
334) Mewar-warkan kepada semua sikap utk tidak melakukan pembaziran dlm penggunaan fasiliti kampus lebih kerap.
335) Enhance student engagements in sustainability activities
336) mungkin informasi tentang kelestarian boleh diketengahkan dalam subjek-subjek yang diambil oleh pelajar di dalam kelas oleh pensyarah
337) i think an effective campaign about plastic usage and waste should implemented dramatically because we still can see so much waste taken out by the cleaners every single day from residential college and it may be caused by lack or minimal awareness of basic sustainable practice.
338) Banyakkan pengangkutan awam
339) university public transport tracking app in order to increase the efficiency of public transport and maximise public transport usage
340) Start using sensor based features to save electric. More bicycle availability for traveling.
341) Need more recycling bin
342) consistence of water supply plz
343) Mengadakan ceramah berkaitan benda ni

344) i think my university already conducted a lot of good competitions and campaign such as bring your own tupperware to lessen the use of polystyrene when buying food from cafeteria, banning use plastic straw and held an earth hour program and etc .But just maybe from my opinion they just need to ensure vision or objectives of all the campaign they held can be applied continuously by the students, not once the campaigns is finish all the habit is already forgotten
345) Cadangan saya ialah pihak universiti sewajarnya memberikan pendedahan awal mengenai inisiatif kelestarian.
346) Maintain it as eco campus
347) Tidak membekalkan plastik kepada para pelajar ketika membeli barang samada di koperasi/kafeteria. Selain itu, menggalakkan pelajar untuk menggunakan straw yang boleh diguna semula.
348) Come up with more activities for student to improve their knowledge on nature.
349) Kurang maklumat yang mendalam dalam kitar semula contoh mengitar semula plastik dan jenis-jenis plastik yang boleh dikitar.
350) help students discard all our unused notes especially in the end of semester in a friendly environmental
351) Paperless approached
352) Memperbanyakkan program kelestarian
353) mempergiatkan promosi kepada pelajar, pensyarah dan orang luar berkaitan kelestarian kampus
354) Harap masa akan datang, kelestarian di Universiti lebih baik dan teratur daripada sebelumnya.
355) Food waste management in accommodation cafe
356) Mengadakan tong sampah kitar semula di setiap fakulti /kawasan ums. Menggunakan tenaga solar..menggunakan/beri kemudahan basikal untuk pergi ke kuliah
357) Raise awareness and educate through all platforms
358) Provide more water dispenser around campus to reduce single use plastic bottle
359) Try to use water recycle method in buildings to sustain the resources that we have
360) 1. Allow the use of non-motorised vehicles on campus. 2. Place recycling bins in easier to access areas. 3. Encourage students to adapt a more eco friendly lifestyle within dormitories.
361) Encourage people to understand more about sustainability of environment

362) Introducing a course or subject related to sustainability
363) Setakat ini ok
364) Plant more plants
365) Invest more in solar panel. So, in the future more energy can be save.
366) Solar farm
367) Make a lot of program for campus sustainability
368) Kampus hijau seperti uum
369) Provide more solar power
370) Become sustainable
371) Memperbanyakkan program secara sukarelawan yang berkaitan dengan lestari
372) Collect ideas from student and choose the most executable plan to launch
373) Mendorongkan lagi pelajar untuk menyertai program-program kelestarian.
374) Use solar energy
375) Kekalkan kebersihan
376) Banyakkan merit
377) Work hard
378) Buat masa ini kelestarian didalam kampus sangat memuaskan dan sudah memadai bagi setiap pelajar yang mendiami kampus tersebut.
379) Menambah pokok2 di kaki lima asrama.
380) Mendorongkan lagi pelajar untuk menyertai program-program kelestarian.
381) Memperbanyakkan tumbuhan hijau di sekitar kawasan kampus. Selain itu, pihak universiti juga dapat menubuhkan satu komuniti yang menitikberatkan pelestarian alam sekitar. 😊
382) mengadakan aktiviti seperti menanam pokok secara besar besaran di kampus
383) mengadakan aktiviti seperti menanam pokok secara besar besaran di kampus
384) jaringan internet
385) more accommodation

386) Utilize the social media pages created for university, clubs, and departments by sharing the information regarding the related activities because the message is not widely spread yet.
387) Create a student sustainability network between university and reward student who participate with point for redeem food voucher.
388) Launch sustainable development program with achievable goals and engage all staffs and employees to intensify the initiative
389) need to engage and emphasize more on the campus sustainability, not just share information but create bigger impact that can influences other universities
390) lebih memperhebatkan kempen
391) Perbanyakkan kenderaan berkuasa elektrik lagi di kampus daripada penggunaan kenderaan sendiri.
392) Menggunakan tenaga solar
393) Use smart sensors for every facilities to ensure more efficient energy consumption
394) 1. Mengehadkan penggunaan kenderaan di dalam kampus 2. Memperbanyakkan kempen melibatkan penjagaan alam sekitar 3. Menyediakan lebih banyak tong kitar semula di dalam kampus
395) Penyediaan tong sampah e-waste
396) Menyediakan Skuter Elektrik untuk ke kelas
397) Try to use water recycle method in buildings to sustain the resources that we have
398) Be more aware of or support more sustainability projects (external or internal) that university students can participate. Encourage recycling and reusing non-biodegradable items in offices and classes. Encourage use of cycling to classes. Offer projects that teach sustainable gardening or small workshops related to sustainability to students and employees. Be more active in sustainability research and encourage students to put effort into research teams regardless of faculty. Be more strict in energy and water use within campus.
399) menyediakan kemudahan yang lebih mesra alam
400) Improvements can be made in si many aspects that I'm truly sure that UMS authorities know better
401) Annual Communal Work
402) Universiti menyediakan lebih banyak tempat kitar semula
403) Sentiasa mengutip sampah jika telah penuh

404) Buat banyak lagi program
405) Membuat rumah hijau
406) Plant more trees
407) Tanam banyak pokok
408) Menjaga dan mengekalkan inisiatif
409) menanam lebih banyak pokok di sekitar kampus
410) Increase number of recycling bin
411) naik taraf
412) Sedia basikal hibrid
413) War-war kan kepada semua pelajar mengenai program kelestarian kampus dan libatkan kepada pelajar yang ingin menyertai program. :-)
414) Menyediakan alat senaman yang lebih
415) Tampilkan poster lebih banyak bagi mempromosikan
416) Tanaman pokok bunga
417) Membuat lebih banyak program
418) Elakkan penggunaan integrated electrical system, kerana byk berlaku pembaziran elektrik dikawasan yang tidak gunakan langsung oleh warga universiti
419) Usage of renewable energy should be making in a large scale.
420) Penanaman pokok yang banyak Dan memberi Kebaikan kepada bumi Dan manusia
421) Menyediakan kemudahan yang lebih pelbagai di dalam kampus
422) Handle the basic needs for student first, and later the students would willingly give cooperations on sustainable future.
423) universiti perlu mengwarkan aktiviti yg dpt memberi kelestarian kepada pelajar secara kerap
424) Harap pihak Universiti dapat menggalakkan lagi kelestarian alam sekitar dengan memberi pendedahan yang lebih meluas kepada para pelajar.
425) Plant more trees
426) mengurangkan penggunaan bas yang mencemarkan udara

427) mengurangkan penggunaan elektrik dengan adanya panel solar
428) menanam lebih banyak pokok di sekitar kolej kediaman
429) Perbanyakkan hebahan kepada pelajar untuk meningkatkan kesedaran
430) menyediakan tong sampah lebih banyak
431) Ada rumah hijau Ada tempat belajar dengan tumbuh ² an Ada pokok yang banyak kat sekeliling kampus
432) menambah lebih banyak pokok
433) melakukan gotong royong
434) Penyewaan basikal
435) Membuat bumbung disepanjang susur ke tempat-tempat yang majoriti pelajar tuju seperti ke kafeteria
436) menghalau binatang liar seperti anjing
437) mengadakan program kelestarian bersama pelajar
438) Mewujudkan tong kitar semula di kolej kediaman pelajar
439) Penggunaan tenaga solar di kolej kediaman pelajar
440) Reduce plastic
441) penggunaan solar untuk menjimatkan tenaga
442) Reduce plastic
443) electric bus for transportation rather than bus that use fuel, transportation that go around the university area for the students.
444) Mendedahkan pelajar dengan program kelestarian di kampus pengajian
445) lebih memperhebatkan kempen
446) The number of recycling bins should be increased as well as their campaigns and programs. Unused land can be offered as part of gardening programs where students and staffs can joined.
447) Maybe i myself dint take note that my campus very into sustainability. Maybe universiti should first provide some knowledge about it

448) Kepimpinan Universiti perlu menekankan lagi kepentingan menjaga kelestarian kampus kepada para staf dan pelajar. Peruntukkan perlu ditambah untuk menaik taraf fasiliti untuk kelestarian kampus yang sedia ada di kampus



**Table 2.1: I know what the Sustainable Development Goals are**

<b>I know what the Sustainable Development Goals are</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	121	8.5	8.5	8.5
	Strongly Disagree	95	6.6	6.6	15.1
	Disagree	198	13.8	13.8	28.9
	Neither Agree Nor Disagree	408	28.5	28.5	57.4
	Agree	416	29.1	29.1	86.5
	Strongly Agree	193	13.5	13.5	100.0
	Total	1431	100.0	100.0	

**Table 2.2: I know the countries to which the Sustainable Development Goals are addressed**

Table 2.3 shows that 183 or 16.3% respondents agreed and 67 or 6.0 % respondents strongly agreed that they know the time horizon for which the Sustainable Development Goals are designed.

**Table 2.3: I know the time horizon for which the Sustainable Development Goals are designed**

<b>I know the time horizon for which the Sustainable Development Goals are designed.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	208	14.5	14.5	14.5
	Strongly Disagree	159	11.1	11.1	25.6
	Disagree	304	21.2	21.2	46.9
	Neither Agree Nor Disagree	462	32.3	32.3	79.2
	Agree	219	15.3	15.3	94.5
	Strongly Agree	79	5.5	5.5	100.0
	Total	1431	100.0	100.0	

**Table 2.4: I know the number of Sustainable Development Goals and could indicate one of their goals**

**I know the number of Sustainable Development Goals and could indicate one of their goals**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	200	14.0	14.0	14.0
	Strongly Disagree	150	10.5	10.5	24.5
	Disagree	275	19.2	19.2	43.7
	Neither Agree Nor Disagree	388	27.1	27.1	70.8
	Agree	264	18.4	18.4	89.2
	Strongly Agree	154	10.8	10.8	100.0
	Total	1431	100.0	100.0	

**Table 2.5: I have received information about the Sustainable Development Goals by email and/or Social Networks**

**I have received information about the Sustainable Development Goals by email and/or Social Networks**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	202	14.1	14.1	14.1
	Strongly Disagree	190	13.3	13.3	27.4
	Disagree	284	19.8	19.8	47.2
	Neither Agree Nor Disagree	339	23.7	23.7	70.9
	Agree	276	19.3	19.3	90.2
	Strongly Agree	140	9.8	9.8	100.0
	Total	1431	100.0	100.0	

**Table 2.6: I have received information about the Sustainable Development Goals from the traditional media (press, radio and/or television)**

**I have received information about the Sustainable Development Goals from the traditional media (press, radio and/or television)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	189	13.2	13.2	13.2
	Strongly Disagree	187	13.1	13.1	26.3
	Disagree	265	18.5	18.5	44.8
	Neither Agree Nor Disagree	360	25.2	25.2	70.0
	Agree	301	21.0	21.0	91.0
	Strongly Agree	129	9.0	9.0	100.0
	Total	1431	100.0	100.0	

**Table 2.7: I have received information about Sustainable Development Goals in formal education (high school, university, etc.)**

**I have received information about Sustainable Development Goals in formal education (high school, university, etc.)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	117	8.2	8.2	8.2
	Strongly Disagree	118	8.2	8.2	16.4
	Disagree	229	16.0	16.0	32.4
	Neither Agree Nor Disagree	348	24.3	24.3	56.7
	Agree	382	26.7	26.7	83.4
	Strongly Agree	237	16.6	16.6	100.0
	Total	1431	100.0	100.0	

Table 2.8 shows that 201 or 17.9% respondents agreed and 101 or 9.0% respondents strongly agreed that they have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.).

**Table 2.8: I have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.)**

**I have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	200	14.0	14.0	14.0
	Strongly Disagree	176	12.3	12.3	26.3
	Disagree	290	20.3	20.3	46.5
	Neither Agree Nor Disagree	404	28.2	28.2	74.8
	Agree	242	16.9	16.9	91.7
	Strongly Agree	119	8.3	8.3	100.0
	Total	1431	100.0	100.0	







**Table 3.1: University has created a written statement of their commitment to sustainability**

**University has created a written statement of their commitment to sustainability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	103	7.2	7.2	7.2
	Strongly Disagree	57	4.0	4.0	11.2
	Disagree	174	12.2	12.2	23.3
	Neither Agree Nor Disagree	488	34.1	34.1	57.4
	Agree	391	27.3	27.3	84.8
	Strongly Agree	218	15.2	15.2	100.0
	Total	1431	100.0	100.0	

**Table 3.2: Each department within the sustainable university has created its own written statement of their commitment to sustainability**

**Each department within the sustainable university has created its own written statement of their commitment to sustainability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	108	7.5	7.5	7.5
	Strongly Disagree	77	5.4	5.4	12.9
	Disagree	190	13.3	13.3	26.2
	Neither Agree Nor Disagree	496	34.7	34.7	60.9
	Agree	393	27.5	27.5	88.3
	Strongly Agree	167	11.7	11.7	100.0
	Total	1431	100.0	100.0	

**Table 3.3: Sustainability audits are performed on the surrounding community**

**Sustainability audits are performed on the surrounding community**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	135	9.4	9.4	9.4
	Strongly Disagree	89	6.2	6.2	15.7
	Disagree	203	14.2	14.2	29.8
	Neither Agree Nor Disagree	504	35.2	35.2	65.1
	Agree	347	24.2	24.2	89.3
	Strongly Agree	153	10.7	10.7	100.0
	Total	1431	100.0	100.0	

**Table 3.4: Regular sustainability audits are performed on campus**

**Regular sustainability audits are performed on campus**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	144	10.1	10.1	10.1
	Strongly Disagree	92	6.4	6.4	16.5
	Disagree	194	13.6	13.6	30.0
	Neither Agree Nor Disagree	507	35.4	35.4	65.5
	Agree	342	23.9	23.9	89.4
	Strongly Agree	152	10.6	10.6	100.0
	Total	1431	100.0	100.0	

**Table 3.5: University reuses campus waste**

**University reuses campus waste**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	153	10.7	10.7	10.7
	Strongly Disagree	110	7.7	7.7	18.4
	Disagree	225	15.7	15.7	34.1
	Neither Agree Nor Disagree	485	33.9	33.9	68.0
	Agree	290	20.3	20.3	88.3
	Strongly Agree	168	11.7	11.7	100.0

Total	1431	100.0	100.0
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**Table 3.6: University uses renewable and safe energy sources**

**University uses renewable and safe energy sources**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No Knowledge	112	7.8	7.8	7.8
Strongly Disagree	70	4.9	4.9	12.7
Disagree	214	15.0	15.0	27.7
Neither Agree Nor Disagree	459	32.1	32.1	59.7
Agree	379	26.5	26.5	86.2
Strongly Agree	197	13.8	13.8	100.0
Total	1431	100.0	100.0	

**Table 3.7: University emphasises sustainability through support services (e.g. Recycling bins across campus, efficient public transport throughout university, etc.)**

**University emphasises sustainability through support services(e.g. Recycling bins across campus, efficient public transport throughout university, etc.)**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No Knowledge	55	3.8	3.8	3.8
Strongly Disagree	60	4.2	4.2	8.0
Disagree	150	10.5	10.5	18.5
Neither Agree Nor Disagree	419	29.3	29.3	47.8
Agree	428	29.9	29.9	77.7
Strongly Agree	319	22.3	22.3	100.0
Total	1431	100.0	100.0	

**Table 3.8: University engages in community outreach programs that benefit the local environment**

**University engages in community outreach programs that benefit the local environment**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	74	5.2	5.2	5.2
	Strongly Disagree	53	3.7	3.7	8.9
	Disagree	141	9.9	9.9	18.7
	Neither Agree Nor Disagree	427	29.8	29.8	48.6
	Agree	443	31.0	31.0	79.5
	Strongly Agree	293	20.5	20.5	100.0
	Total	1431	100.0	100.0	

**Table 3.9: University has created green community centers to benefit the local environment**

**University has created green community centers to benefit the local environment**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	95	6.6	6.6	6.6
	Strongly Disagree	54	3.8	3.8	10.4
	Disagree	167	11.7	11.7	22.1
	Neither Agree Nor Disagree	456	31.9	31.9	53.9
	Agree	405	28.3	28.3	82.3
	Strongly Agree	254	17.7	17.7	100.0
	Total	1431	100.0	100.0	

**Table 3.10: University has created partnerships with government, non-governmental organisations, and industry working toward sustainability**

**University has created partnerships with government, non-governmental organisations, and industry working toward sustainability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	98	6.8	6.8	6.8
	Strongly Disagree	48	3.4	3.4	10.2
	Disagree	170	11.9	11.9	22.1

Neither Agree Nor Disagree	447	31.2	31.2	53.3
Agree	413	28.9	28.9	82.2
Strongly Agree	255	17.8	17.8	100.0
Total	1431	100.0	100.0	

**Table 3.11: Campus building planning should be a top priority in university sustainability issues**

**Campus building planning should be a top priority in university sustainability issues**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	58	4.1	4.1	4.1
	Strongly Disagree	37	2.6	2.6	6.6
	Disagree	131	9.2	9.2	15.8
	Neither Agree Nor Disagree	419	29.3	29.3	45.1
	Agree	417	29.1	29.1	74.2
	Strongly Agree	369	25.8	25.8	100.0
	Total	1431	100.0	100.0	

**Table 3.12: Campus land-use should be a top priority in university sustainability issues**

**Campus land-use should be a top priority in university sustainability issues**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	61	4.3	4.3	4.3
	Strongly Disagree	35	2.4	2.4	6.7
	Disagree	138	9.6	9.6	16.4
	Neither Agree Nor Disagree	391	27.3	27.3	43.7
	Agree	442	30.9	30.9	74.6
	Strongly Agree	364	25.4	25.4	100.0
	Total	1431	100.0	100.0	

**Table 3.13: University supports students to examine the campus sustainability issues and report to the University**

**Supports students to examine the campus sustainability issues and report to the University**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	57	4.0	4.0	4.0
	Strongly Disagree	46	3.2	3.2	7.2
	Disagree	134	9.4	9.4	16.6
	Neither Agree Nor Disagree	382	26.7	26.7	43.3
	Agree	437	30.5	30.5	73.8
	Strongly Agree	375	26.2	26.2	100.0
	Total	1431	100.0	100.0	

**Table 3.14: Engage in sustainable development network at regional, national or international levels**

**Engage in sustainable development network at regional, national or international levels**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	71	5.0	5.0	5.0
	Strongly Disagree	46	3.2	3.2	8.2
	Disagree	155	10.8	10.8	19.0
	Neither Agree Nor Disagree	412	28.8	28.8	47.8
	Agree	419	29.3	29.3	77.1
	Strongly Agree	328	22.9	22.9	100.0
	Total	1431	100.0	100.0	

**Table 3.15: Encourages multidisciplinary and interdisciplinary research on sustainability**

**Encourages multidisciplinary and interdisciplinary research on sustainability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	63	4.4	4.4	4.4

Strongly Disagree	37	2.6	2.6	7.0
Disagree	151	10.6	10.6	17.5
Neither Agree Nor Disagree	392	27.4	27.4	44.9
Agree	448	31.3	31.3	76.2
Strongly Agree	340	23.8	23.8	100.0
Total	1431	100.0	100.0	

**Table 3.16: Supports student initiatives such as environmental newsletter**

**Supports student initiatives such as environmental newsletter**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	55	3.8	3.8	3.8
	Strongly Disagree	36	2.5	2.5	6.4
	Disagree	144	10.1	10.1	16.4
	Neither Agree Nor Disagree	420	29.4	29.4	45.8
	Agree	400	28.0	28.0	73.7
	Strongly Agree	376	26.3	26.3	100.0
	Total	1431	100.0	100.0	

**Table 3.17: Provides students with sustainable accommodation**

**Provides students with sustainable accommodation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	57	4.0	4.0	4.0
	Strongly Disagree	47	3.3	3.3	7.3
	Disagree	147	10.3	10.3	17.5
	Neither Agree Nor Disagree	429	30.0	30.0	47.5
	Agree	395	27.6	27.6	75.1
	Strongly Agree	356	24.9	24.9	100.0
	Total	1431	100.0	100.0	

**Table 3.18: Provides students with environmental sustainability practice facilities**

**Provides students with environmental sustainability practice facilities**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	47	3.3	3.3	3.3
	Strongly Disagree	40	2.8	2.8	6.1
	Disagree	151	10.6	10.6	16.6
	Neither Agree Nor Disagree	405	28.3	28.3	44.9
	Agree	423	29.6	29.6	74.5
	Strongly Agree	365	25.5	25.5	100.0
	Total	1431	100.0	100.0	

**Table 3.19: Establishes student groups with sustainability focus**

**Establishes student groups with sustainability focus**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	69	4.8	4.8	4.8
	Strongly Disagree	49	3.4	3.4	8.2
	Disagree	133	9.3	9.3	17.5
	Neither Agree Nor Disagree	413	28.9	28.9	46.4
	Agree	418	29.2	29.2	75.6
	Strongly Agree	349	24.4	24.4	100.0
	Total	1431	100.0	100.0	

**Table 3.20: Encourages student groups to participate in sustainability initiatives**

**Encourages student groups to participate in sustainability initiatives**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	55	3.8	3.8	3.8
	Strongly Disagree	38	2.7	2.7	6.5
	Disagree	126	8.8	8.8	15.3
	Neither Agree Nor Disagree	392	27.4	27.4	42.7
	Agree	452	31.6	31.6	74.3
	Strongly Agree	368	25.7	25.7	100.0

Total	1431	100.0	100.0
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**Table 3.21: Encourages students to consider job fairs and career counselling focused on work in sustainable enterprises**

**Encourages students to consider job fairs and career counselling focused on work in sustainable enterprises**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No Knowledge	74	5.2	5.2	5.2
Strongly Disagree	28	2.0	2.0	7.1
Disagree	151	10.6	10.6	17.7
Neither Agree Nor Disagree	421	29.4	29.4	47.1
Agree	427	29.8	29.8	76.9
Strongly Agree	330	23.1	23.1	100.0
Total	1431	100.0	100.0	

**Table 3.22: Encourages students to consider those enterprises with pledge of social and environmental responsibility**

**Security provision within the campus**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No Knowledge	45	3.1	3.1	3.1
Strongly Disagree	30	2.1	2.1	5.2
Disagree	120	8.4	8.4	13.6
Neither Agree Nor Disagree	363	25.4	25.4	39.0
Agree	466	32.6	32.6	71.6
Strongly Agree	407	28.4	28.4	100.0
Total	1431	100.0	100.0	

**Table 3.23: Security provision within the campus**

**Security provision within the campus**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	45	3.1	3.1	3.1
	Strongly Disagree	30	2.1	2.1	5.2
	Disagree	120	8.4	8.4	13.6
	Neither Agree Nor Disagree	363	25.4	25.4	39.0
	Agree	466	32.6	32.6	71.6
	Strongly Agree	407	28.4	28.4	100.0
	Total	1431	100.0	100.0	

**Table 3.24: Provides adequate access to people with disability**

**Provides adequate access to people with disability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	57	4.0	4.0	4.0
	Strongly Disagree	40	2.8	2.8	6.8
	Disagree	140	9.8	9.8	16.6
	Neither Agree Nor Disagree	408	28.5	28.5	45.1
	Agree	398	27.8	27.8	72.9
	Strongly Agree	388	27.1	27.1	100.0
	Total	1431	100.0	100.0	

**Table 3.25: University has a dedicated website for campus sustainability**

**University has a dedicated website for campus sustainability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	138	9.6	9.6	9.6
	Strongly Disagree	53	3.7	3.7	13.3
	Disagree	194	13.6	13.6	26.9
	Neither Agree Nor Disagree	428	29.9	29.9	56.8
	Agree	333	23.3	23.3	80.1
	Strongly Agree	285	19.9	19.9	100.0
	Total	1431	100.0	100.0	

**Table 3.26: Community engagement**

<b>Community engagement</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	58	4.1	4.1	4.1
	Strongly Disagree	33	2.3	2.3	6.4
	Disagree	161	11.3	11.3	17.6
	Neither Agree Nor Disagree	409	28.6	28.6	46.2
	Agree	407	28.4	28.4	74.6
	Strongly Agree	363	25.4	25.4	100.0
	Total	1431	100.0	100.0	

**Table 3.27: Charitable activities**

<b>Charitable activities</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	50	3.5	3.5	3.5
	Strongly Disagree	30	2.1	2.1	5.6
	Disagree	103	7.2	7.2	12.8
	Neither Agree Nor Disagree	367	25.6	25.6	38.4
	Agree	442	30.9	30.9	69.3
	Strongly Agree	439	30.7	30.7	100.0
	Total	1431	100.0	100.0	

**Table 3.28: Has a dedicated section in their annual report dedicated to sustainability**

<b>Has a dedicated section in their annual report dedicated to sustainability</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	129	9.0	9.0	9.0
	Strongly Disagree	51	3.6	3.6	12.6

Disagree	163	11.4	11.4	24.0
Neither Agree Nor Disagree	447	31.2	31.2	55.2
Agree	366	25.6	25.6	80.8
Strongly Agree	275	19.2	19.2	100.0
Total	1431	100.0	100.0	

**Table 3.29: University is accredited by independent organisation such as Global Reporting Initiative**

**University is accredited by independent organisation such as Global Reporting Initiative**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	143	10.0	10.0	10.0
	Strongly Disagree	55	3.8	3.8	13.8
	Disagree	175	12.2	12.2	26.1
	Neither Agree Nor Disagree	456	31.9	31.9	57.9
	Agree	344	24.0	24.0	82.0
	Strongly Agree	258	18.0	18.0	100.0
	Total	1431	100.0	100.0	

**Table 3.30: Has a dedicated sustainability officer**

**Has a dedicated sustainability officer**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	138	9.6	9.6	9.6
	Strongly Disagree	68	4.8	4.8	14.4
	Disagree	154	10.8	10.8	25.2
	Neither Agree Nor Disagree	459	32.1	32.1	57.2
	Agree	346	24.2	24.2	81.4
	Strongly Agree	266	18.6	18.6	100.0
	Total	1431	100.0	100.0	

**Table 3.31: Has a dedicated sustainability division**

		<b>Has a dedicated sustainability division</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	127	8.9	8.9	8.9
	Strongly Disagree	65	4.5	4.5	13.4
	Disagree	171	11.9	11.9	25.4
	Neither Agree Nor Disagree	426	29.8	29.8	55.1
	Agree	366	25.6	25.6	80.7
	Strongly Agree	276	19.3	19.3	100.0
	Total	1431	100.0	100.0	

**Table 3.32: Supports outside organisations that focus on sustainability**

		<b>Supports outside organisations that focus on sustainability</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Knowledge	101	7.1	7.1	7.1
	Strongly Disagree	43	3.0	3.0	10.1
	Disagree	149	10.4	10.4	20.5
	Neither Agree Nor Disagree	423	29.6	29.6	50.0
	Agree	402	28.1	28.1	78.1
	Strongly Agree	313	21.9	21.9	100.0
	Total	1431	100.0	100.0	



**Statistics**

	Global environmental issues	Local environmental issues	Sustainable development	High Education for Sustainable Development	The extent to which your college/department offers courses which address topics related to sustainability	The extent to which sustainability is a focus integrated into your Bachelor/Master's/P hD program	Involvement of your college/department in research and projects related to environmental sustainability	Energy conservation practices (including lighting, cooling, ventilation, windows)	Recycling of solid waste (including paper, glass, plastic, metal)	Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)
Skewness	-.498	-.573	-.352	-.367	-.328	-.309	-.404	-.494	-.859	-.624
Std. Error of Skewness	.065	.065	.065	.065	.065	.065	.065	.065	.065	.065
Kurtosis	-.174	-.049	-.402	-.462	-.626	-.730	-.508	-.208	.490	-.226
Std. Error of Kurtosis	.129	.129	.129	.129	.129	.129	.129	.129	.129	.129

**Statistics**

	Sustainable landscaping (e.g., emphasizing native plants, biodiversity, minimising lawn, integrated pest management)	Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects)
Skewness	-.528	-.719
Std. Error of Skewness	.065	.065
Kurtosis	-.262	.034
Std. Error of Kurtosis	.129	.129

**Table 4.1: Solar Photovoltaic (PV)**

Solar Photovoltaic (PV)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	733	51.2	51.2	51.2
	No (If you don't understand)	698	48.8	48.8	100.0
Total		1431	100.0	100.0	

**Table 4.2: LED fixtures in campus buildings**

LED fixtures in campus buildings					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1158	80.9	80.9	80.9
	No (If you don't understand)	273	19.1	19.1	100.0
Total		1431	100.0	100.0	

**Table 4.3: Light off reminder stickers on switches**

Light off reminder stickers on switches					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1283	89.7	89.7	89.7
	No (If you don't understand)	148	10.3	10.3	100.0
Total		1431	100.0	100.0	

**Table 4.4: Rainwater harvesting for dorms**

Rainwater harvesting for dorms					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	954	66.7	66.7	66.7
	No (If you don't understand)	477	33.3	33.3	100.0

Total	1431	100.0	100.0
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**Table 4.5: Water efficient fixtures in restrooms**

**Water efficient fixtures in restrooms**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1062	74.2	74.2	74.2
	No (If you don't understand)	369	25.8	25.8	100.0
	Total	1431	100.0	100.0	

**Table 4.6: Low-emitting materials**

**Low-emitting materials**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1012	70.7	70.7	70.7
	No (If you don't understand)	419	29.3	29.3	100.0
	Total	1431	100.0	100.0	

**Table 4.7: Occupancy sensor control for lighting**

**Occupancy sensor control for lighting**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1078	75.3	75.3	75.3
	No (If you don't understand)	353	24.7	24.7	100.0
	Total	1431	100.0	100.0	

**Table 4.8: Ventilation system for indoor air quality (IAQ)**

**Ventilation system for indoor air quality (IAQ)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	942	65.8	65.8	65.8
	No (If you don't understand)	489	34.2	34.2	100.0
Total		1431	100.0	100.0	

**Table 4.9: Reusable to go containers program**

**Reusable to go containers program**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1254	87.6	87.6	87.6
	No (If you don't understand)	177	12.4	12.4	100.0
Total		1431	100.0	100.0	

**Table 4.10: Lending Library (online program)**

**Lending Library (online program)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1138	79.5	79.5	79.5
	No (If you don't understand)	293	20.5	20.5	100.0
Total		1431	100.0	100.0	

**Table 4.11: Outdoor compost bin**

**Outdoor compost bin**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1097	76.7	76.7	76.7
	No (If you don't understand)	334	23.3	23.3	100.0
Total		1431	100.0	100.0	

**Table 4.12: Campus endorsed Recycling Programs**

<b>Campus endorsed Recycling Programs</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1281	89.5	89.5	89.5
	No (If you don't understand)	150	10.5	10.5	100.0
Total		1431	100.0	100.0	

**Table 4.13: Electric powered shuttle vehicles in campus**

<b>Electric powered shuttle vehicles in campus</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1012	70.7	70.7	70.7
	No (If you don't understand)	419	29.3	29.3	100.0
Total		1431	100.0	100.0	

**Table 4.14: Bike Commute Challenge**

<b>Bike Commute Challenge</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1020	71.3	71.3	71.3
	No (If you don't understand)	411	28.7	28.7	100.0
Total		1431	100.0	100.0	

**Table 4.15: Electric Bikes program**

<b>Electric Bikes program</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1043	72.9	72.9	72.9
	No (If you don't understand)	388	27.1	27.1	100.0
Total		1431	100.0	100.0	

**Table 4.16: Living Lab Initiative**

**Living Lab Initiative**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	758	53.0	53.0	53.0
	No (If you don't understand)	673	47.0	47.0	100.0
	Total	1431	100.0	100.0	

**Table 4.17: Sustainability volunteer program**

**Sustainability volunteer program**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1102	77.0	77.0	77.0
	No (If you don't understand)	329	23.0	23.0	100.0
	Total	1431	100.0	100.0	

**Table 4.18: Campus gardens/ecoparks**

**Campus gardens/ecoparks**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	1182	82.6	82.6	82.6
	No (If you don't understand)	249	17.4	17.4	100.0
	Total	1431	100.0	100.0	

**Table 4.19: Sustainability scholar group**

**Sustainability scholar group**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	793	55.4	55.4	55.4
	No (If you don't understand)	638	44.6	44.6	100.0
	Total	1431	100.0	100.0	

**Table 4.20: Sustainability-related and focused courses/modules**

**Sustainability-related and focused courses/modules**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes (If you understand)	973	68.0	68.0	68.0

No (If you don't understand)	458	32.0	32.0	100.0
Total	1431	100.0	100.0	

**Table 4.21: Global environmental issues**

**Global environmental issues**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	9	.6	.6	.6
	I have heard of it	146	10.2	10.2	10.8
	I know to some extent	722	50.5	50.5	61.3
	I know very well	554	38.7	38.7	100.0
	Total	1431	100.0	100.0	

**Table 4.22: Local environmental issues**

**Local environmental issues**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	10	.7	.7	.7
	I have heard of it	131	9.2	9.2	9.9
	I know to some extent	702	49.1	49.1	58.9
	I know very well	588	41.1	41.1	100.0
	Total	1431	100.0	100.0	

**Table 4.23: Sustainable development**

**Sustainable development**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	60	4.2	4.2	4.2
	I have heard of it	338	23.6	23.6	27.8
	I know to some extent	681	47.6	47.6	75.4
	I know very well	352	24.6	24.6	100.0
	Total	1431	100.0	100.0	

**Table 4.24: High Education for Sustainable Development**

High Education for Sustainable Development					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	113	7.9	7.9	7.9
	I have heard of it	354	24.7	24.7	32.6
	I know to some extent	663	46.3	46.3	79.0
	I know very well	301	21.0	21.0	100.0
	Total	1431	100.0	100.0	

**Table 4.25: The extent to which your college/department offers courses which address topics related to sustainability**

The extent to which your college/department offers courses which address topics related to sustainability

The extent to which your college/department offers courses which address topics related to sustainability					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	158	11.0	11.0	11.0
	I have heard of it	363	25.4	25.4	36.4
	I know to some extent	633	44.2	44.2	80.6
	I know very well	277	19.4	19.4	100.0
	Total	1431	100.0	100.0	

**Table 4.26: The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program**

The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program

The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	190	13.3	13.3	13.3
	I have heard of it	355	24.8	24.8	38.1
	I know to some extent	618	43.2	43.2	81.3
	I know very well	268	18.7	18.7	100.0
	Total	1431	100.0	100.0	

**Table 4.27: Involvement of your college/department in research and projects related to environmental sustainability**

**Involvement of your college/department in research and projects related to environmental sustainability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	134	9.4	9.4	9.4
	I have heard of it	333	23.3	23.3	32.6
	I know to some extent	654	45.7	45.7	78.3
	I know very well	310	21.7	21.7	100.0
	Total	1431	100.0	100.0	

**Table 4.28: Energy conservation practices (including lighting, cooling, ventilation, windows)**

**Energy conservation practices (including lighting, cooling, ventilation, windows)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	65	4.5	4.5	4.5
	I have heard of it	281	19.6	19.6	24.2
	I know to some extent	695	48.6	48.6	72.7
	I know very well	390	27.3	27.3	100.0
	Total	1431	100.0	100.0	

**Table 4.29: Recycling of solid waste (including paper, glass, plastic, metal)**

**Recycling of solid waste (including paper, glass, plastic, metal)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	36	2.5	2.5	2.5
	I have heard of it	144	10.1	10.1	12.6
	I know to some extent	642	44.9	44.9	57.4
	I know very well	609	42.6	42.6	100.0
	Total	1431	100.0	100.0	

**Table 4.30: Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)**

**Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	97	6.8	6.8	6.8
	I have heard of it	247	17.3	17.3	24.0
	I know to some extent	647	45.2	45.2	69.3
	I know very well	440	30.7	30.7	100.0
	Total	1431	100.0	100.0	

**Table 4.31: Sustainable landscaping (e.g., emphasizing native plants, biodiversity, minimising lawn, integrated pest management)**

**Sustainable landscaping (e.g., emphasizing native plants, biodiversity, minimising lawn, integrated pest management)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	101	7.1	7.1	7.1
	I have heard of it	280	19.6	19.6	26.6
	I know to some extent	684	47.8	47.8	74.4
	I know very well	366	25.6	25.6	100.0
	Total	1431	100.0	100.0	

**Table 4.32: Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects)**

**Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know at all	62	4.3	4.3	4.3
	I have heard of it	209	14.6	14.6	18.9
	I know to some extent	645	45.1	45.1	64.0
	I know very well	515	36.0	36.0	100.0
	Total	1431	100.0	100.0	

## 5.0 Budget (13-5.2)

Statistics	
Explore external funding opportunities for green building	
Skewness	-.878
Std. Error of Skewness	.065
Kurtosis	.462
Std. Error of Kurtosis	.129

**Table 5.1: Explore external funding opportunities for green building**

Explore external funding opportunities for green building				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No Knowledge	70	4.9	4.9	4.9
Strongly Disagree	45	3.1	3.1	8.0
Disagree	144	10.1	10.1	18.1
Neither Agree Nor Disagree	400	28.0	28.0	46.1
Agree	426	29.8	29.8	75.8
Strongly Agree	346	24.2	24.2	100.0
Total	1431	100.0	100.0	

## 6.0 Conclusion

Research Questions:

1. What are the suggestions for university to improve their campus sustainability initiatives in future?
2. What are the awareness factors that influencing sustainability in campus?
3. What are the motivation factors that influencing sustainability in campus?
4. What are the design factors influencing sustainability in campus?
5. Is there any funding opportunity for green building in campus?

Research Objectives

1. To obtain suggestions for university to improve their campus sustainability initiatives in future.

2. To identify the awareness factors that influencing sustainability in campus.
3. To examine the motivation factors that influencing sustainability in campus.
4. To assess the design factors influencing sustainability in campus.
5. To find out funding opportunity for green building in campus.

### Research Methodology

This study uses 5-point or 6-point scales to analyse corresponding items in different dimensions. Some open-ended questions are given to participants. Descriptive statistics such as frequency, percentage are used to analyse respondents' response on each item. Normality of data is accessed by skewness and kurtosis. In terms of inferential analysis, structural equation modelling is used to find the fit of model.

### Hypotheses

1. There is a relationship between factors of awareness and campus sustainability
2. There is a relationship between factors of motivation and campus sustainability
3. There is a relationship between factors of design and campus sustainability

### Results of hypotheses

No	Hypothesis	Result
1	There is a relationship between factors of awareness and campus sustainability	Significant
2	There is a relationship between factors of motivation and campus sustainability	Significant
3	There is a relationship between factors of design and campus sustainability	Significant

Since the fit indices in Table 6.1 were acceptable ( $C_{min}/df = 4.749$ ,  $CFI=0.982$ ,  $GFI=0.976$ ,  $AGFI=0.961$ ,  $SRMR=0.0374$ ,  $RMSEA=0.051$ ,  $PCLOSE=0.378$ ), a model that fit our empirical data is identified. This model allowed us to graphically view the inferred causal relationships between awareness, motivation, and design dimensions.

The graph in Figure 6.1 was generated using IBM SPSS Amos and illustrates the findings of the sustainability for university campus. The squares represent the questions, or items, asked during the survey phase (e.g., item No102 asked "I know the countries to which the Sustainable Development Goals are addressed") and are also known as observed variables. The ovals represent the latent (non-observed) variables, also described as constructs or dimensions. It is important to note that the ovals are not actual variables. Rather, they are factors defined by the observed variables (rectangles).

The 4 items in Awareness dimension are "No102-I know the countries to which the Sustainable Development Goals are addressed", "No103- I know the time horizon for which

the Sustainable Development Goals are designed”, “No104-I know the number of Sustainable Development Goals and could indicate one of their goals”, and “No105-I have received information about the Sustainable Development Goals by email and/or Social Networks”.

Motivation dimension has 3 items which are positively and significantly correlated. The 3 items are “1313-Sustainability audits are performed on the surrounding community”, “1314-Regular sustainability audits are performed on campus” and “1321-University reuses campus waste”.

Design dimension comprise of 4 items which are “122-Local environmental issues”, “123-Sustainable development”, “124-High Education for Sustainable Development” and “125-The extent to which your college/department offers courses which address topics related to sustainability”.

Items for Governance dimension is in open-ended format. Thus, Governance is not included in this model. Regarding Budget dimension, it is not included in the model testing because the dimension only has 1 item.

Figure 6.1 shows that all observed variables are having high factor loadings ( $>0.4$ ) towards their latent variables which means the predictors are valid. The figures in Figure 6.1 and Table 6.2 show that awareness, motivation and design are significantly and positively correlated to each other. Awareness and design has stronger relationship (0.598) compared to awareness to motivation (0.476). Motivation has positive and significant relationship with design as well (0.516).

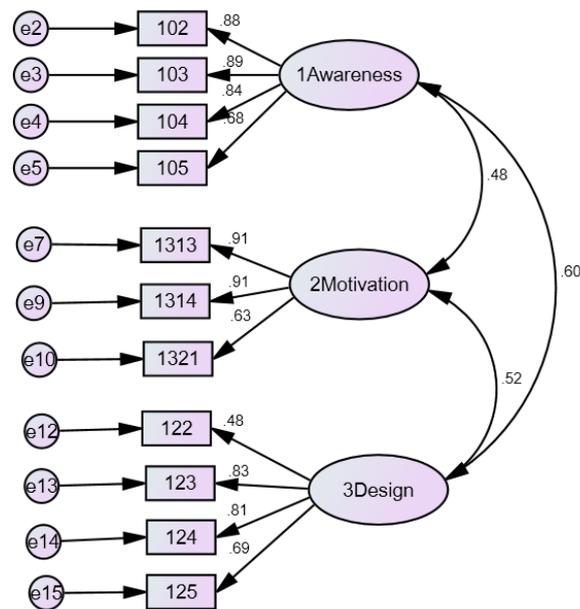
Items for Governance dimension is in open-ended format. Thus, Governance is not included in this model. Regarding Budget dimension, it is not included in the model testing because the dimension only has 1 item.

Looking at the response scale for the 4 items of awareness dimensions, respective authorities can consider doing some initiatives to improve awareness of public due to the high percentage of “no knowledge”, “strongly disagree”, “disagree” and “neutral” rating. Item 102 is 71.4%, Item 103 is 79.2%, item 104 is 70.8% and item 105 is 70.9%.

Looking at the response scale for the 3 items of motivation dimensions, respective authorities have done quite good at sustainability motivation. Respective authorities can consider doing some initiatives to improve motivation of public due to the high percentage of “no knowledge”, “strongly disagree”, “disagree” and “neutral” rating. Item 1313 is 65.1% and item 1314 is 65.5% and item 1321 is 68.0%.

Looking at the response scale for the 4 items of design dimensions, respective authorities can consider doing some initiatives to improve design perception of public due to percentage of “I do not know about it” rating. Item 122 is 0.7%, Item 123 is 4.2% and item 124 is 7.9% and item 125 is 11.0%.

## Appendix



Green Sustainability in University Campus  
 from the Perspectives of Students  
 Standardized estimates

### Legend:

- 102: I know the countries to which the Sustainable Development Goals are addressed
- 103: I know the time horizon for which the Sustainable Development Goals are designed.
- 104: I know the number of Sustainable Development Goals and could indicate one of their goals
- 105: I have received information about the Sustainable Development Goals by email and/or Social Networks
- 1313: Sustainability audits are performed on the surrounding community
- 1314: Regular sustainability audits are performed on campus
- 1321: University reuses campus waste
- 122: Local environmental issues
- 123: Sustainable development
- 124: High Education for Sustainable Development
- 125: The extent to which your college/department offers courses which address topics related to sustainability

**Figure 6.1: Model Fitness**

**Table 6.1: Model Fit Summary**

## CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	194.705	41	.000	<b><u>4.749</u></b>
Saturated model	66	.000	0		
Independence model	11	8817.108	55	.000	160.311

## RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.051	<b><u>.976</u></b>	<b><u>.961</u></b>	.606
Saturated model	.000	1.000		
Independence model	.662	.347	.217	.289

## Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.978	.970	.982	.976	<b><u>.982</u></b>
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

## Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.745	.729	.732
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

## NCP

Model	NCP	LO 90	HI 90
Default model	153.705	113.995	200.954
Saturated model	.000	.000	.000
Independence model	8762.108	8456.842	9073.663

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.136	.107	.080	.141
Saturated model	.000	.000	.000	.000
Independence model	6.166	6.127	5.914	6.345

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	<b>.051</b>	.044	.059	<b>.378</b>
Independence model	.334	.328	.340	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	244.705	245.128	376.359	401.359
Saturated model	132.000	133.117	479.564	545.564
Independence model	8839.108	8839.295	8897.036	8908.036

ECVI

Model	ECVI	LO 90	<a href="#">HI 90</a>	MECVI
Default model	.171	.143	.204	.171
Saturated model	.092	.092	.092	.093
Independence model	6.181	5.968	6.399	6.181

HOELTER

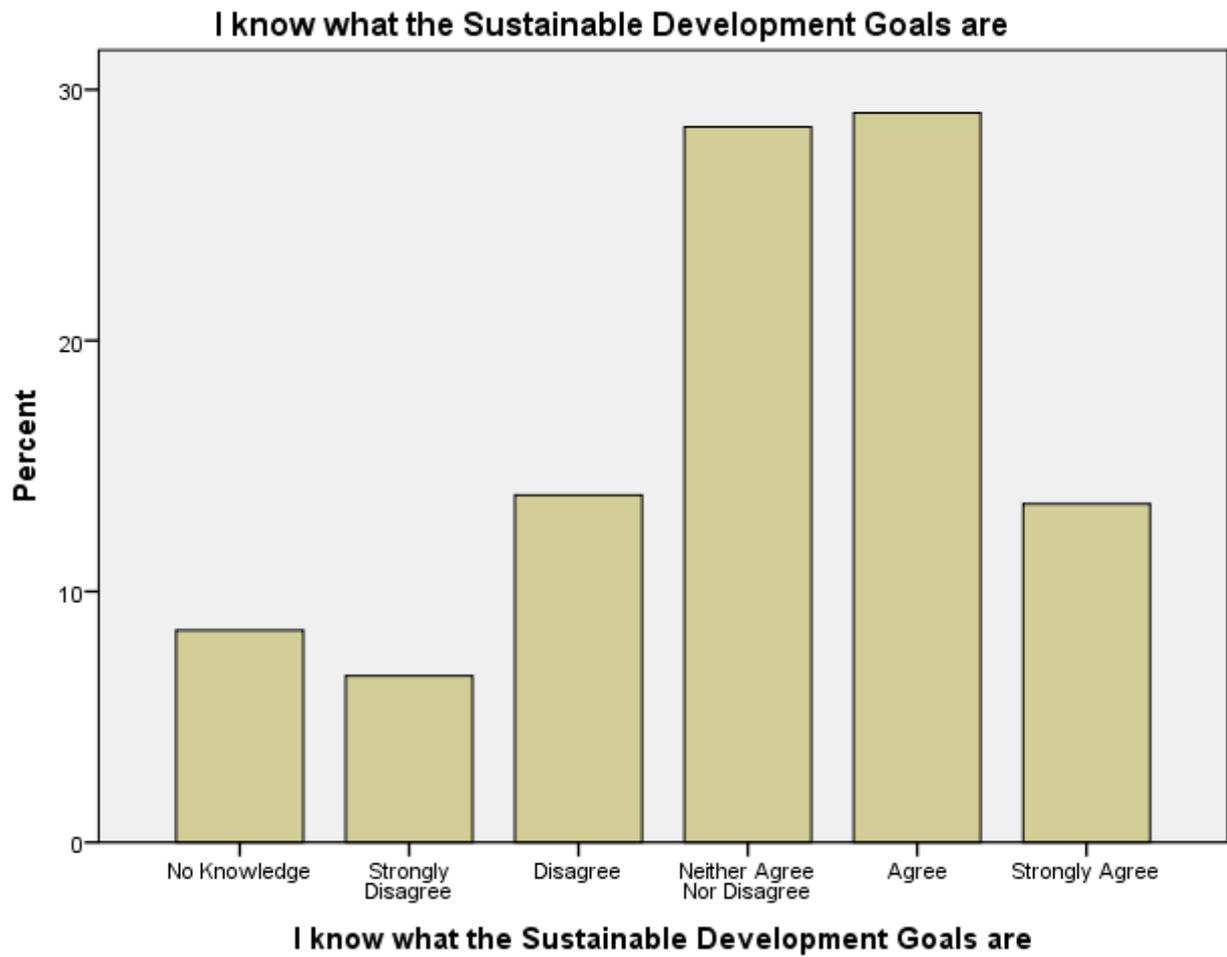
Model	HOELTER .05	HOELTER .01
Default model	419	478
Independence model	12	14

**Table 6.2: Correlations: (Group number 1 - Default model)**

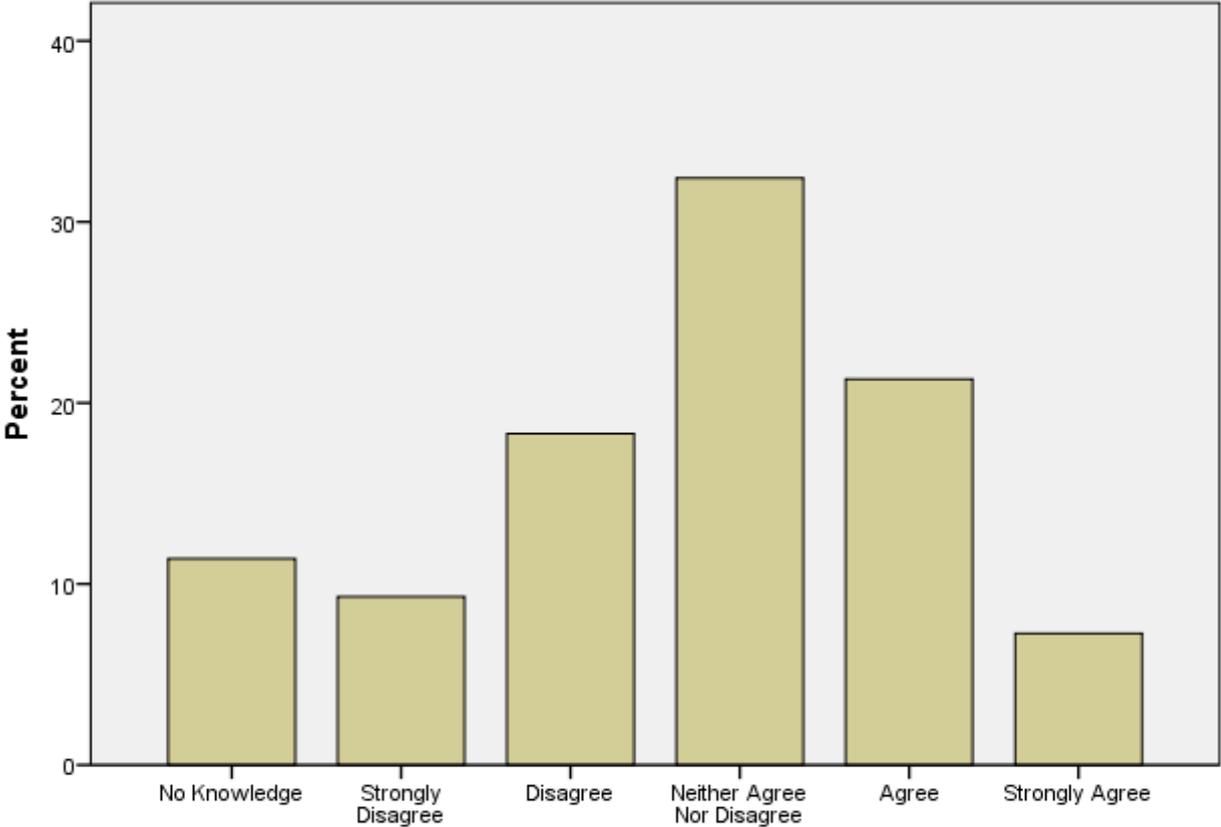
	Estimate
1Awareness <--> 2Motivation	.476
1Awareness <--> 3Design	.598

	Estimate
2Motivation <--> 3Design	.516

**Figures of scale distributions for all individual items**

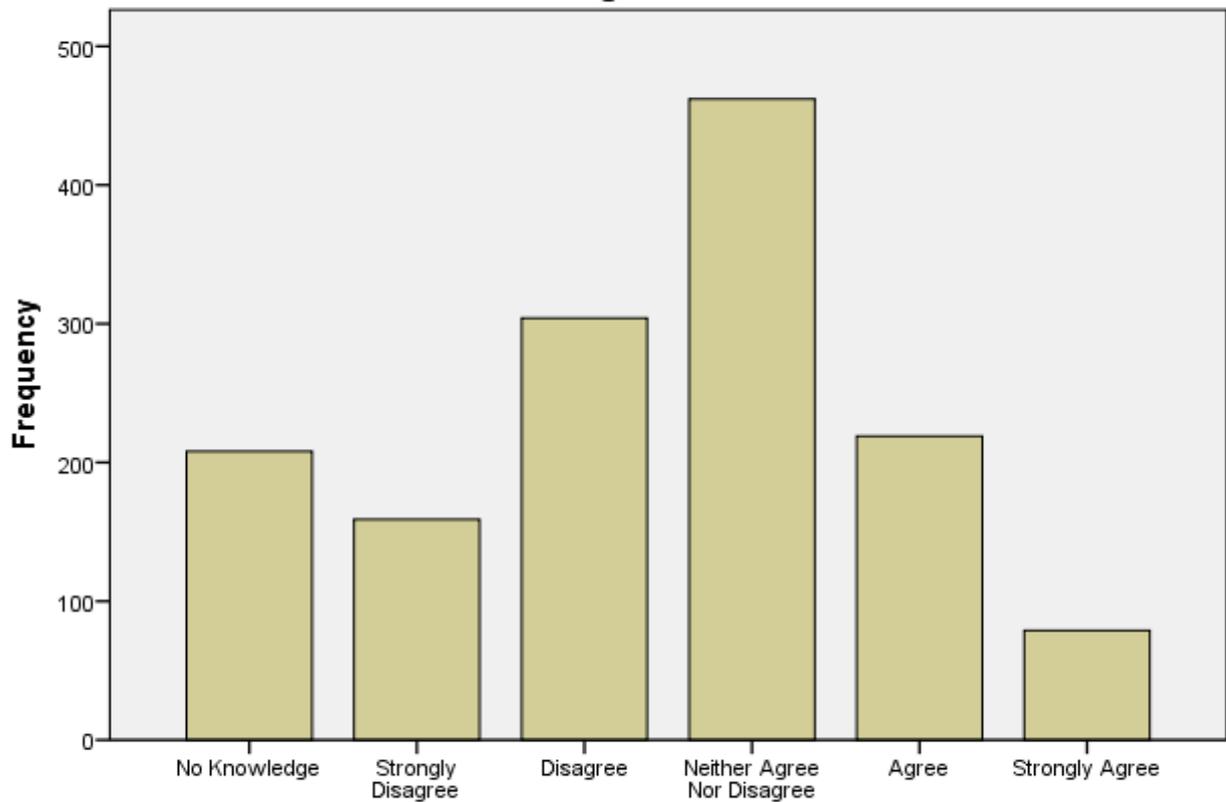


**I know the countries to which the Sustainable Development Goals are addressed**



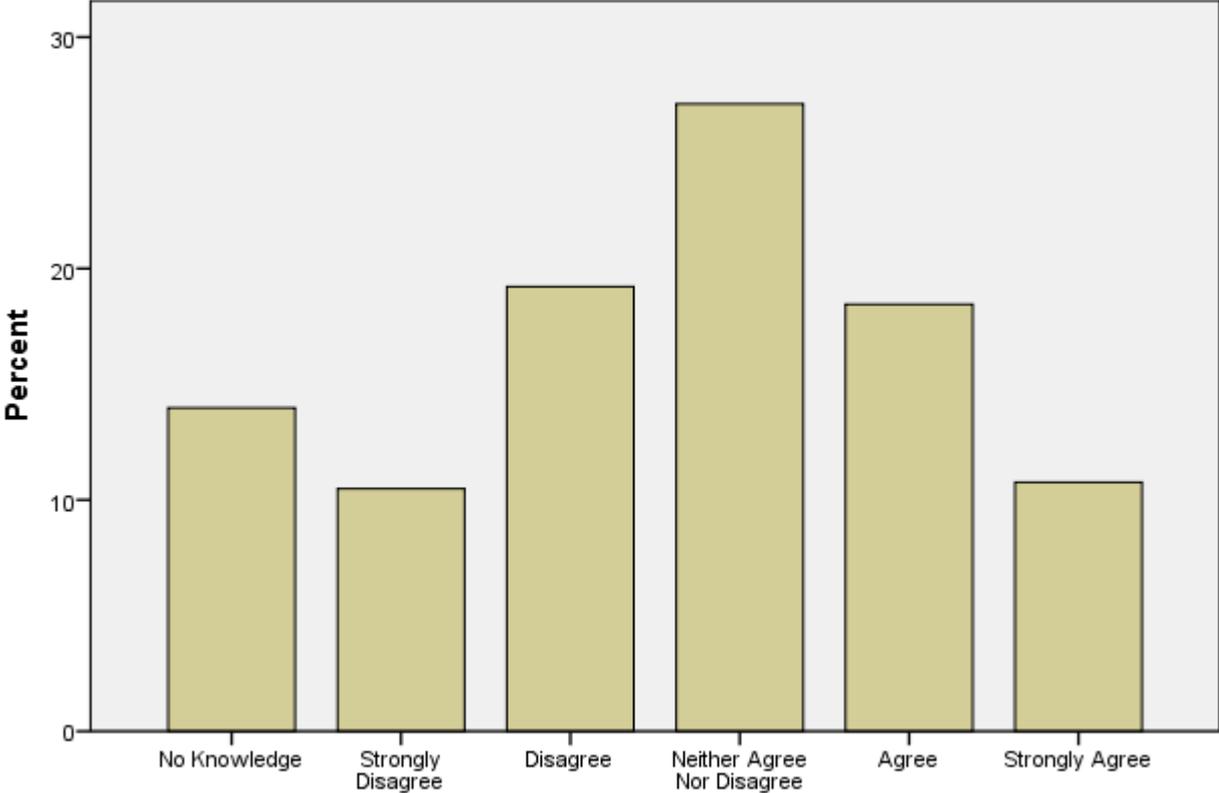
**I know the countries to which the Sustainable Development Goals are addressed**

**I know the time horizon for which the Sustainable Development Goals are designed.**



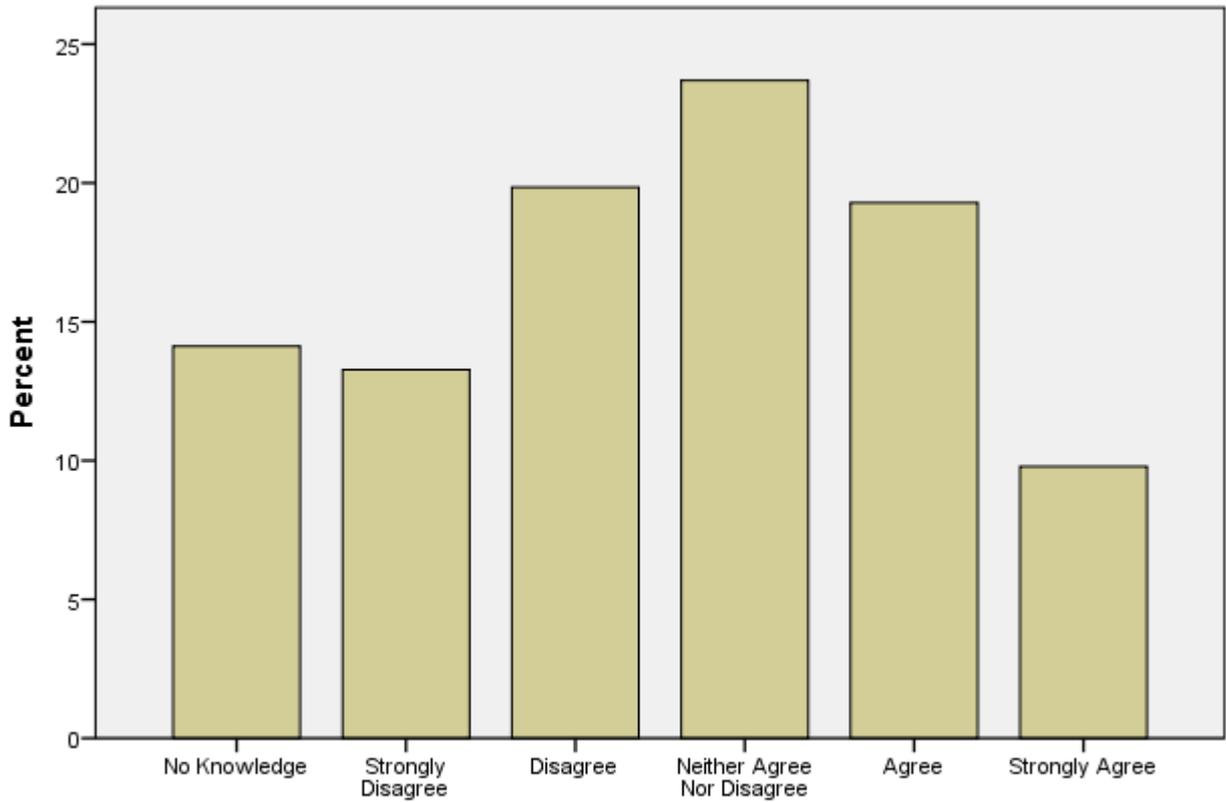
**I know the time horizon for which the Sustainable Development Goals are designed.**

**I know the number of Sustainable Development Goals and could indicate one of their goals**



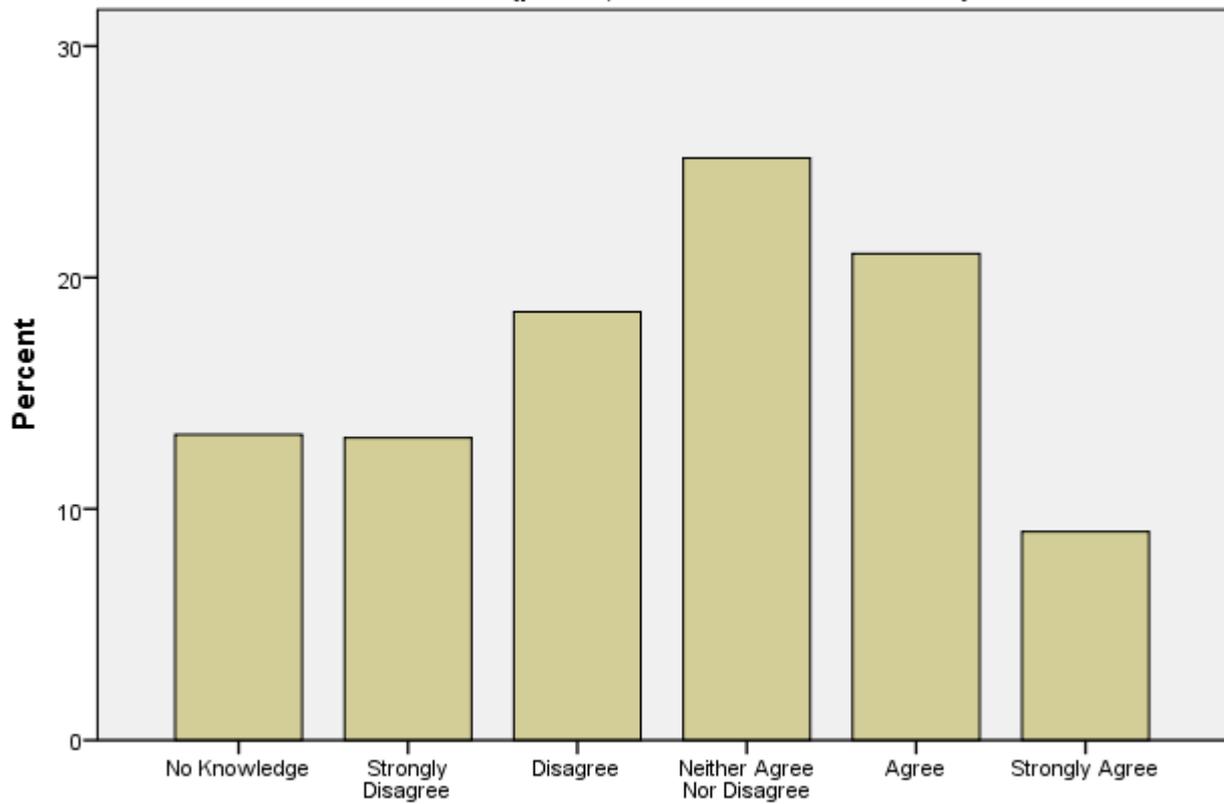
**I know the number of Sustainable Development Goals and could indicate one of their goals**

**I have received information about the Sustainable Development Goals by email and/or Social Networks**



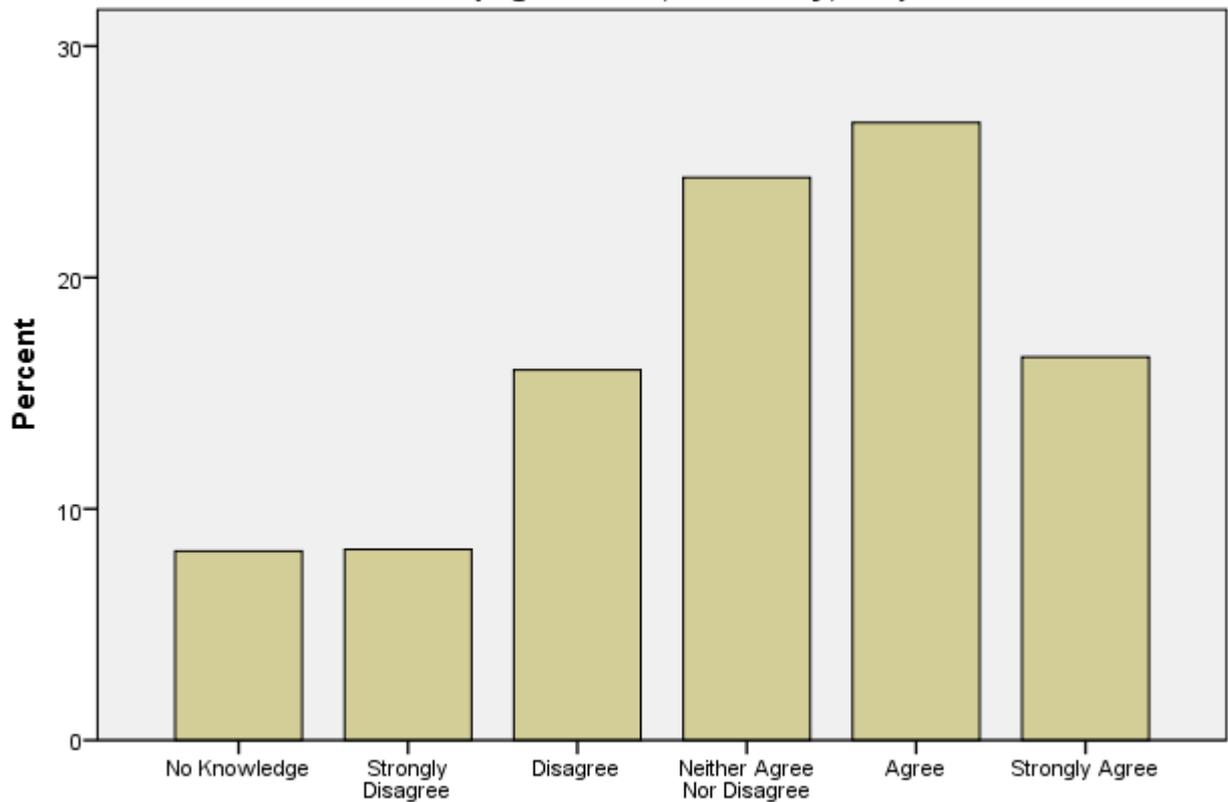
**I have received information about the Sustainable Development Goals by email and/or Social Networks**

**I have received information about the Sustainable Development Goals from the traditional media (press, radio and/or television)**



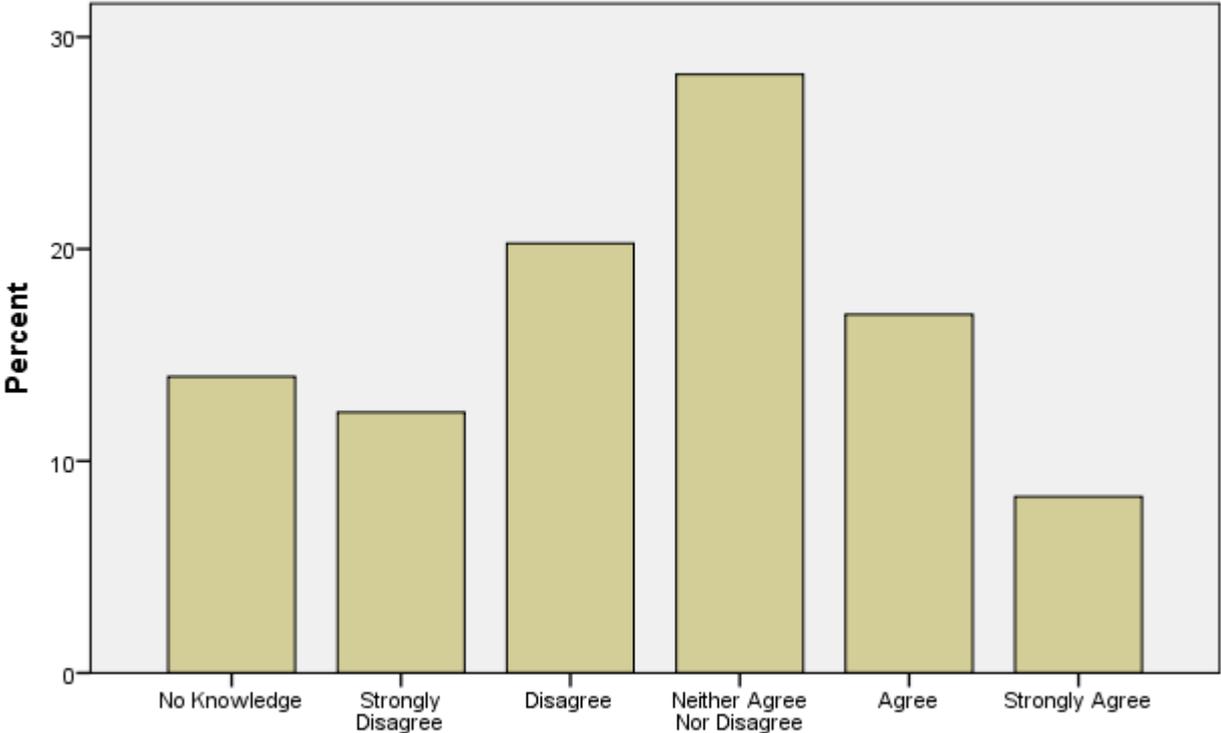
**I have received information about the Sustainable Development Goals from the traditional media (press, radio and/or television)**

**I have received information about Sustainable Development Goals in formal education (high school, university, etc.)**



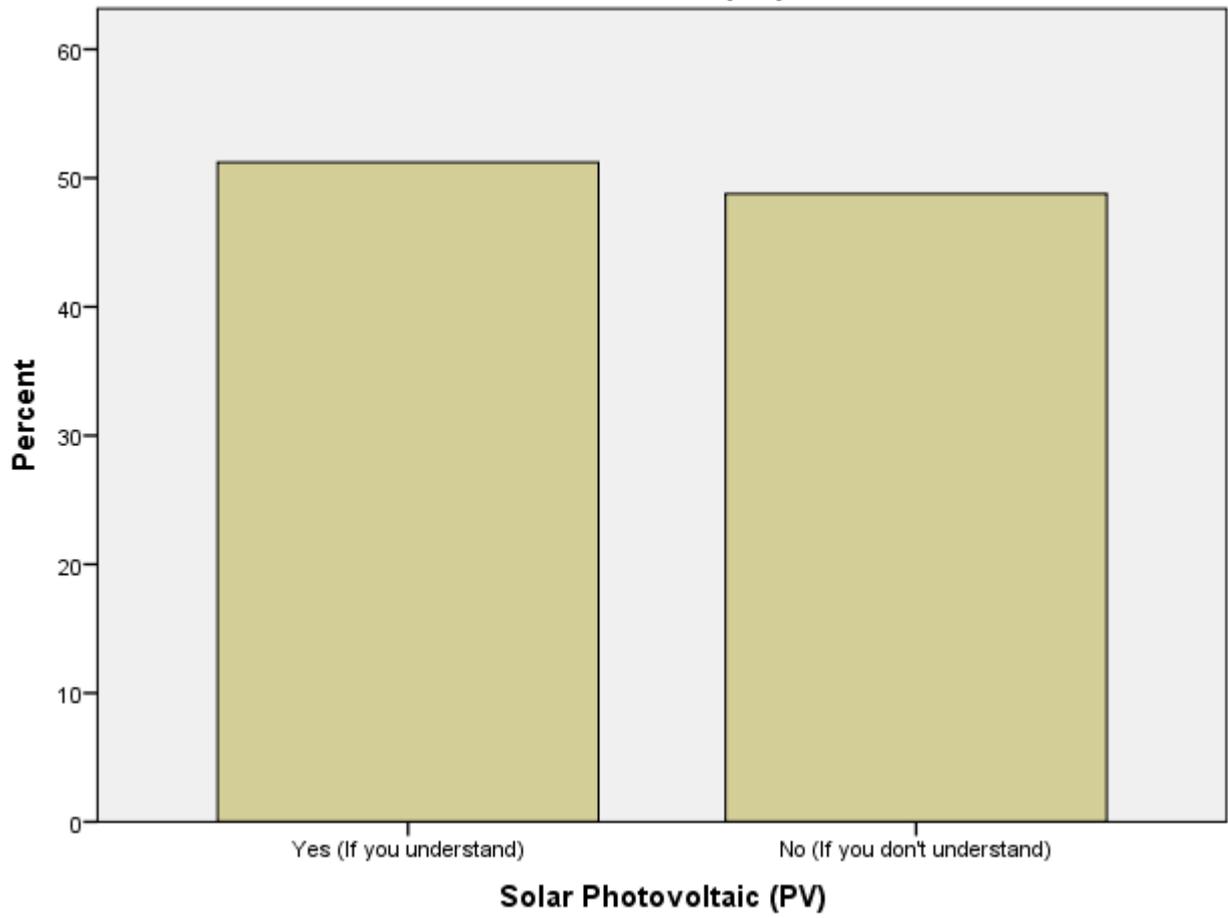
**I have received information about Sustainable Development Goals in formal education (high school, university, etc.)**

**I have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.)**

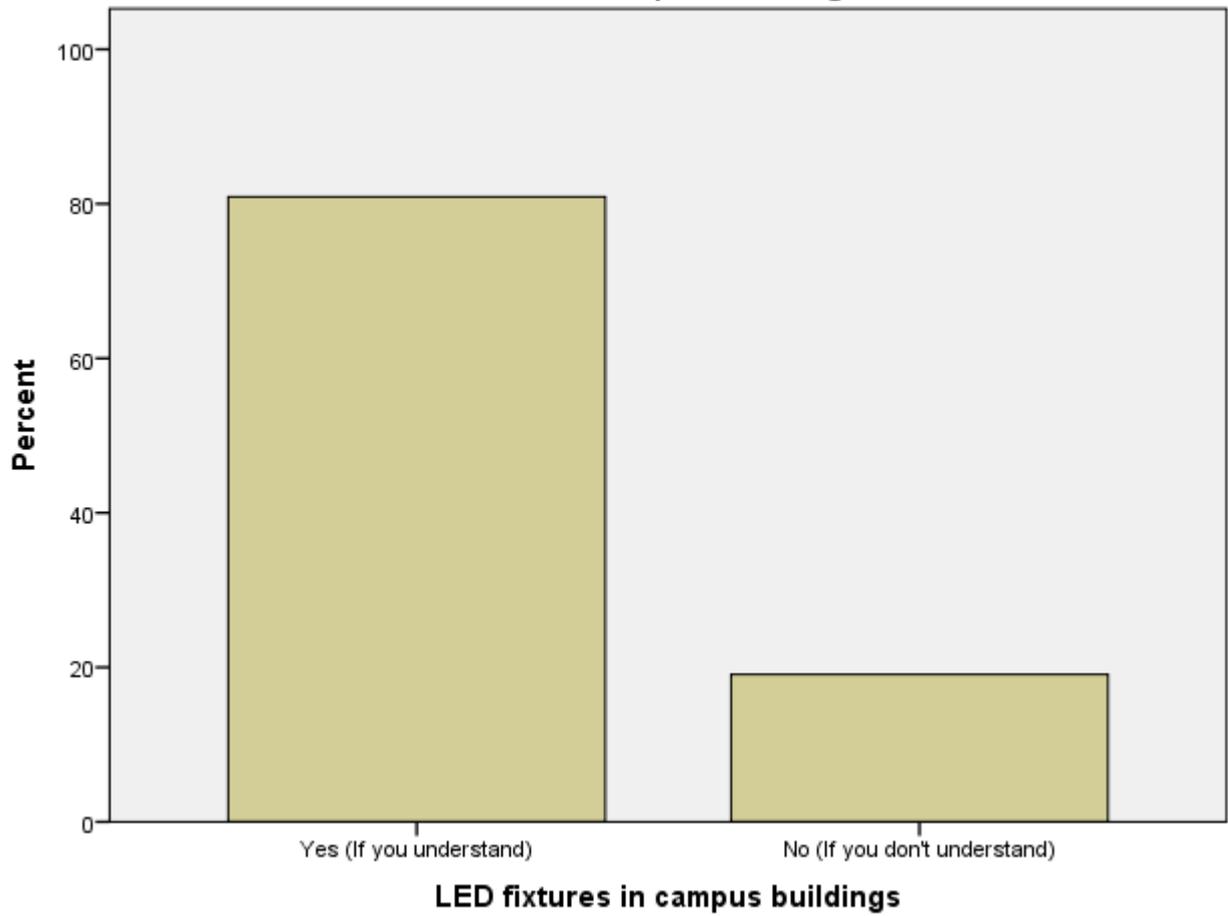


**I have received information about the Sustainable Development Goals in informal training (e.g., workshops of NGOs, actions of the University Cooperation Office, etc.)**

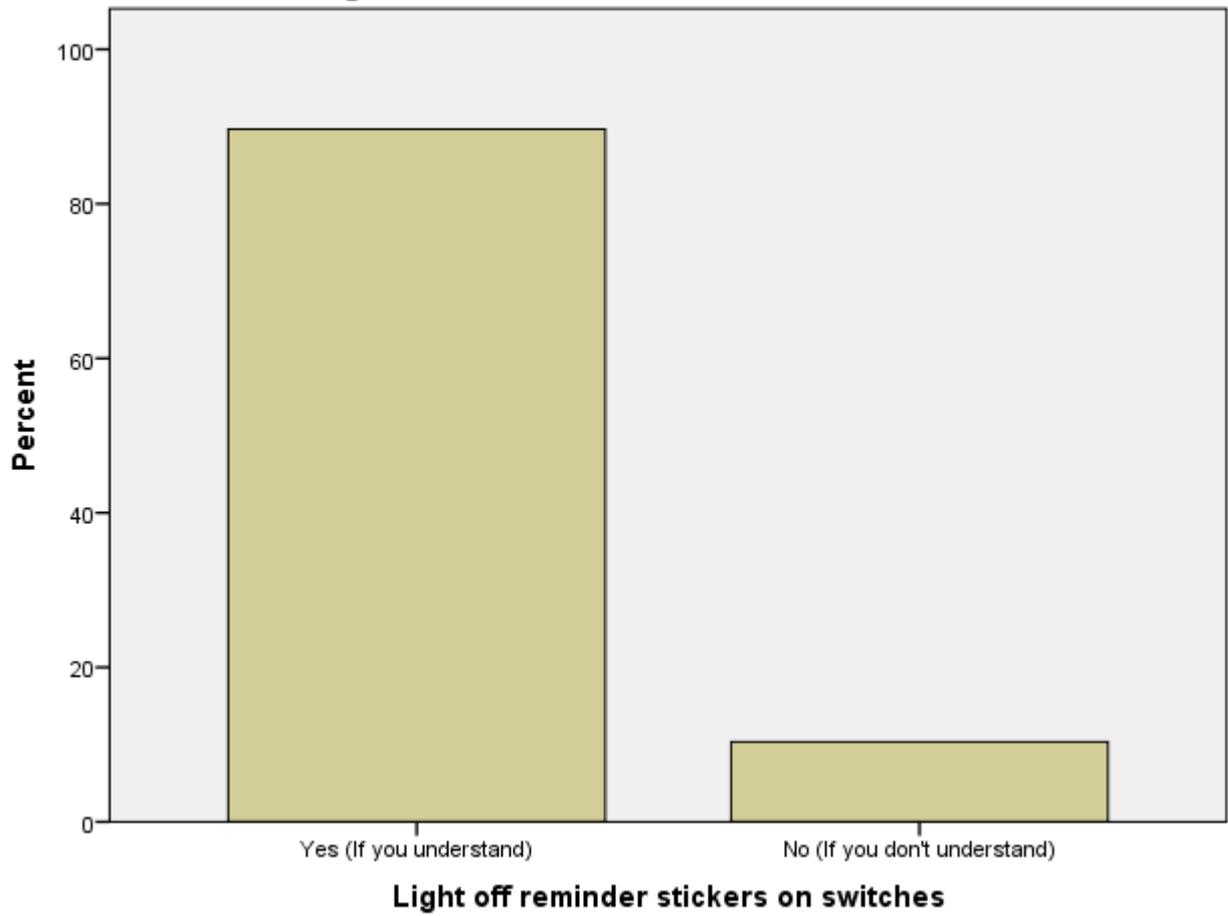
### Solar Photovoltaic (PV)



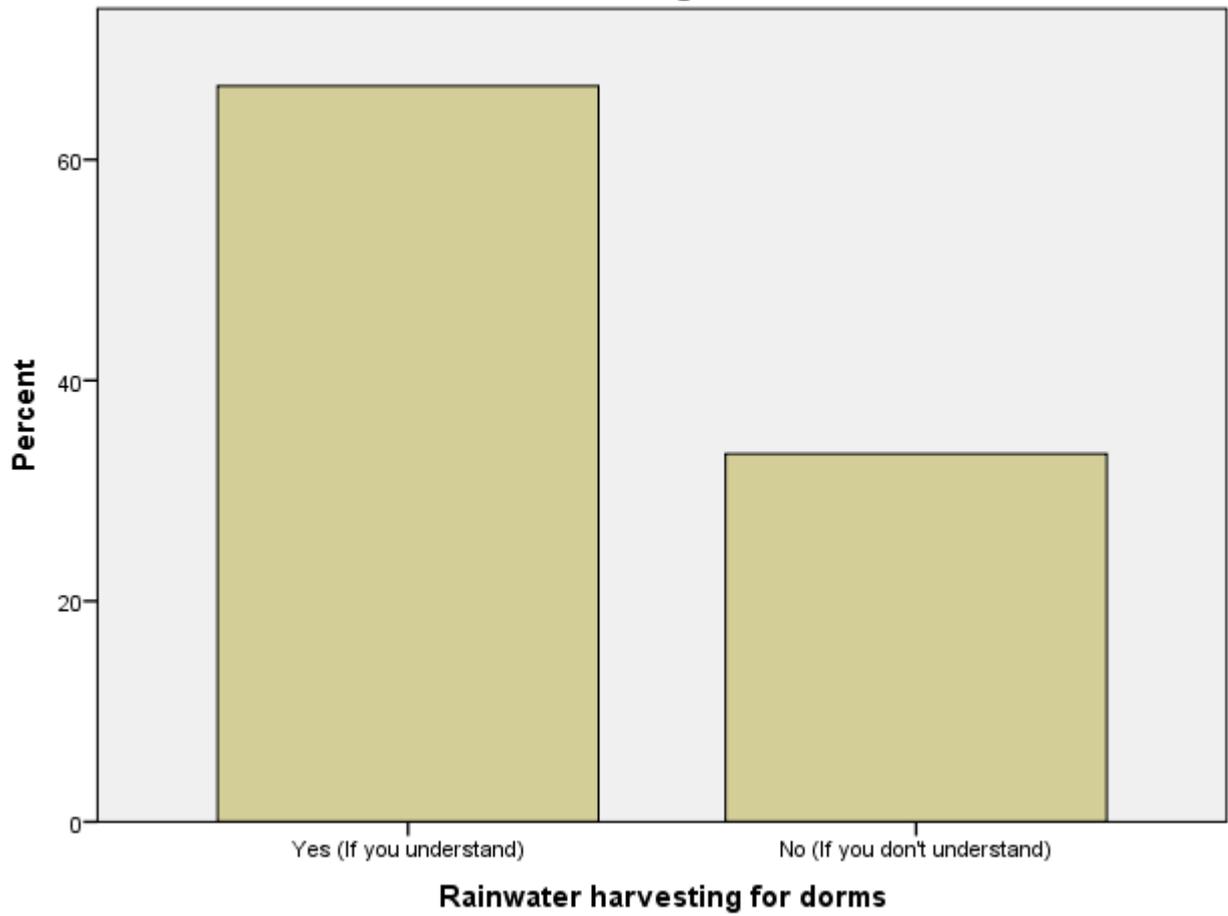
### LED fixtures in campus buildings



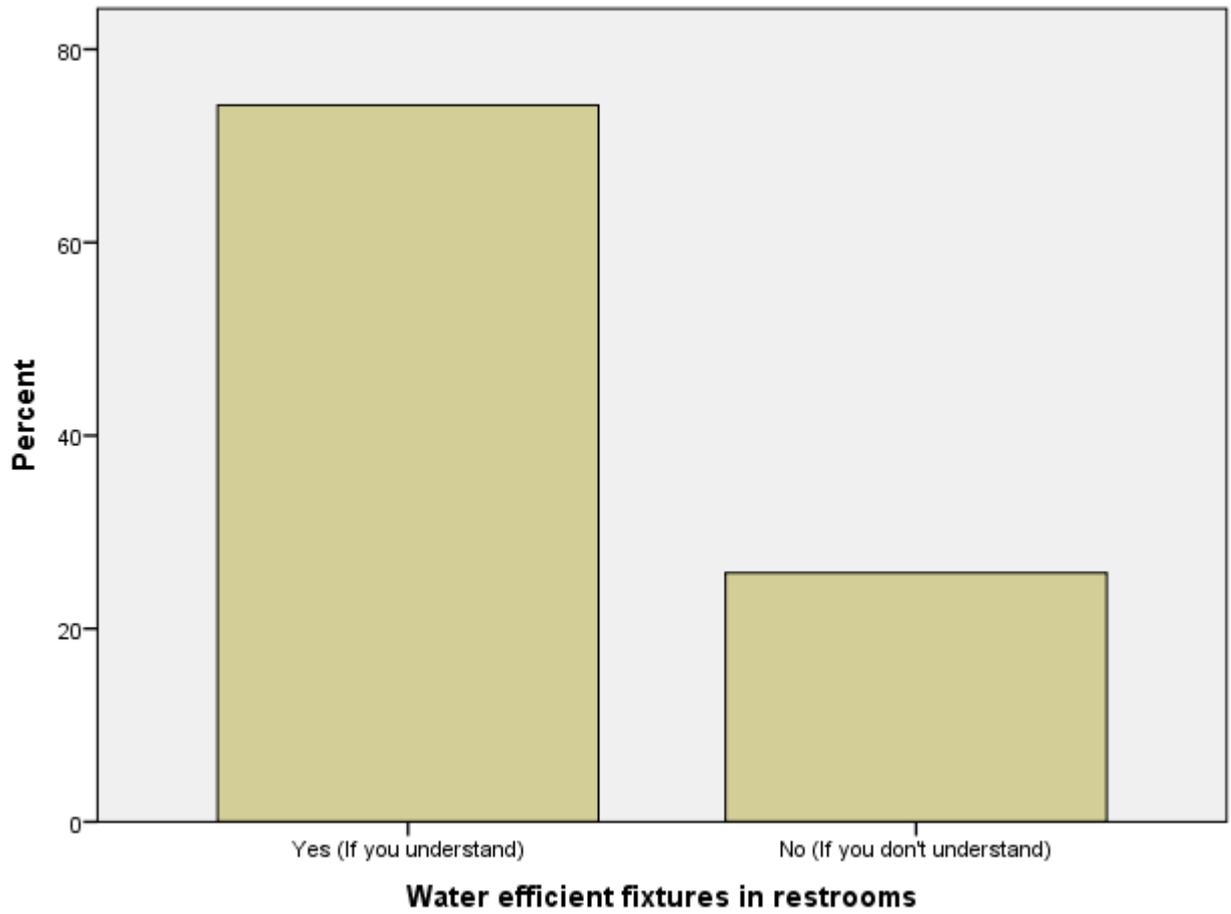
### Light off reminder stickers on switches



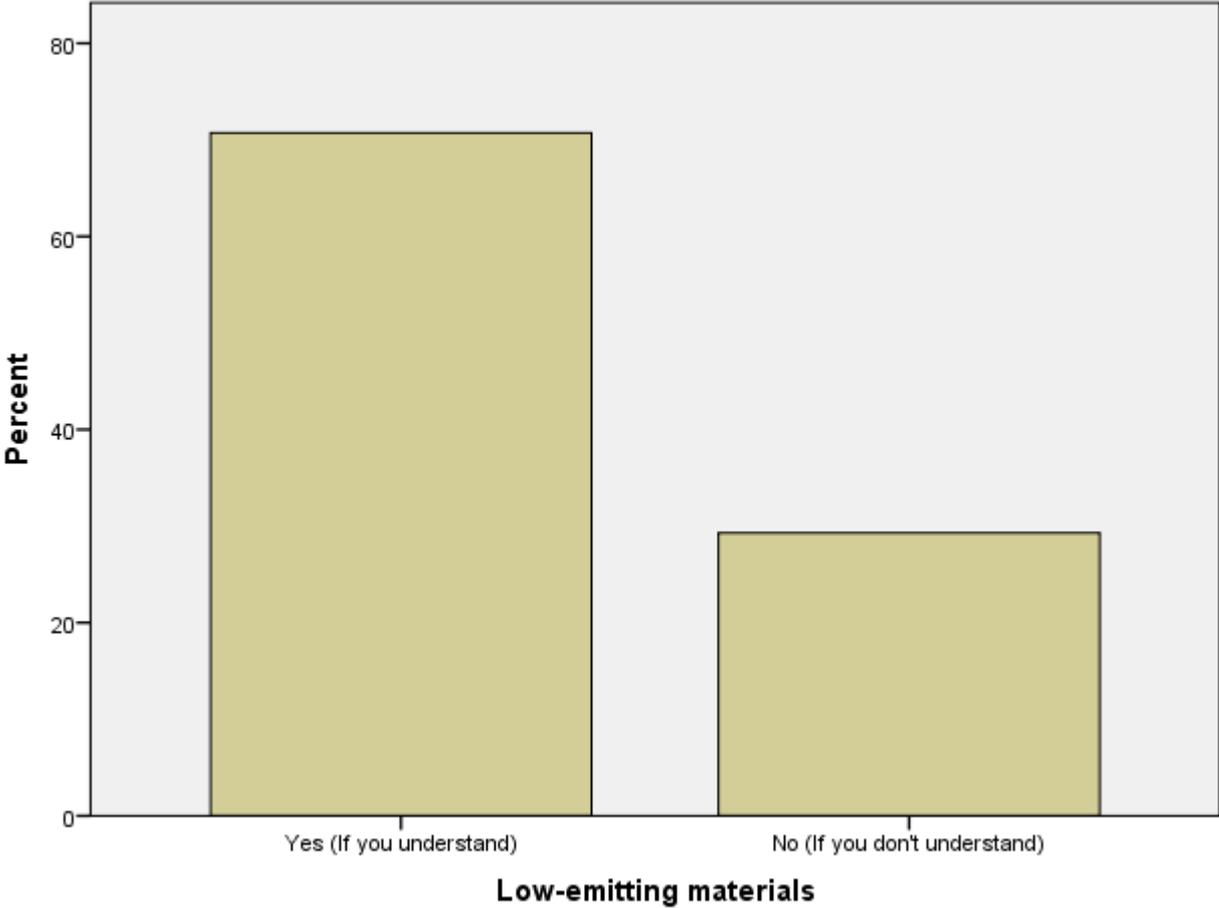
### Rainwater harvesting for dorms



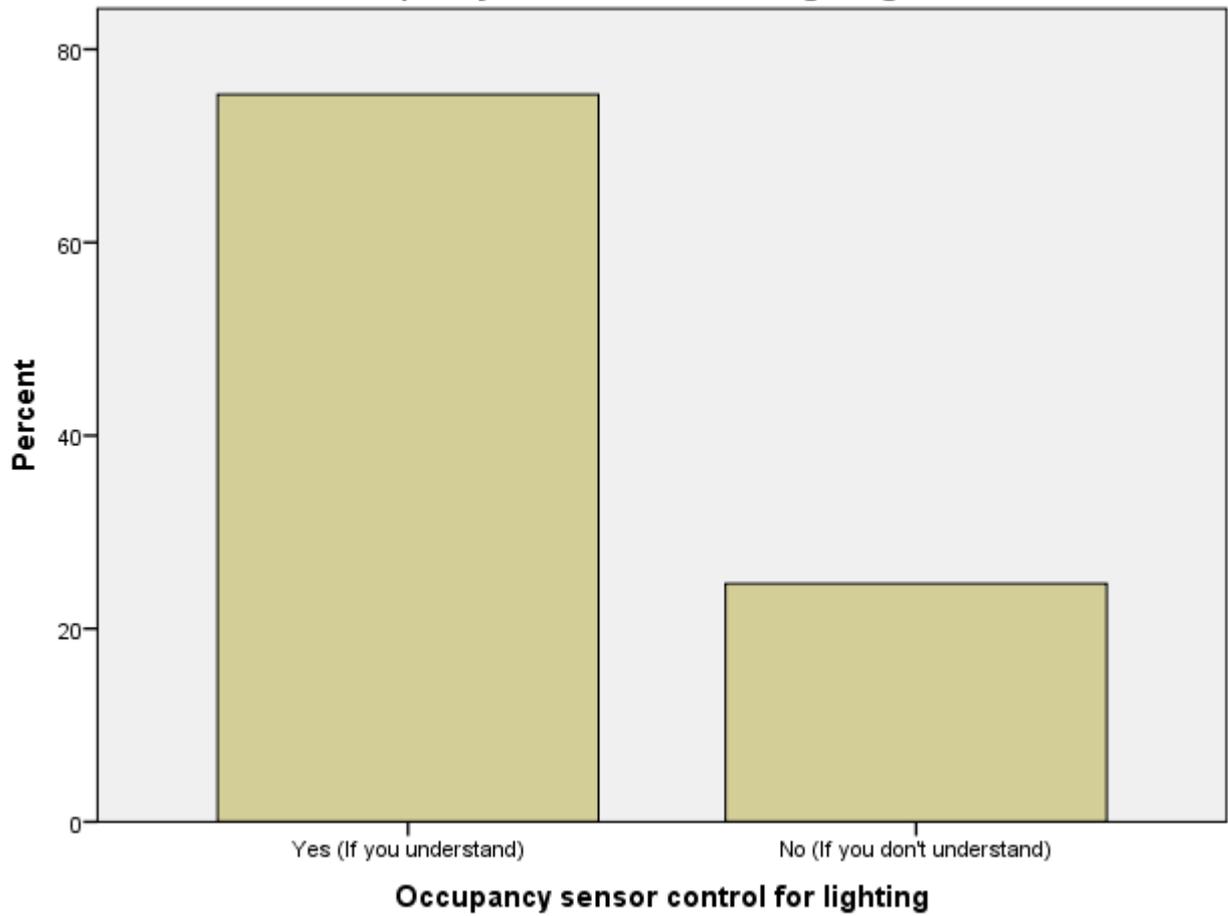
### Water efficient fixtures in restrooms



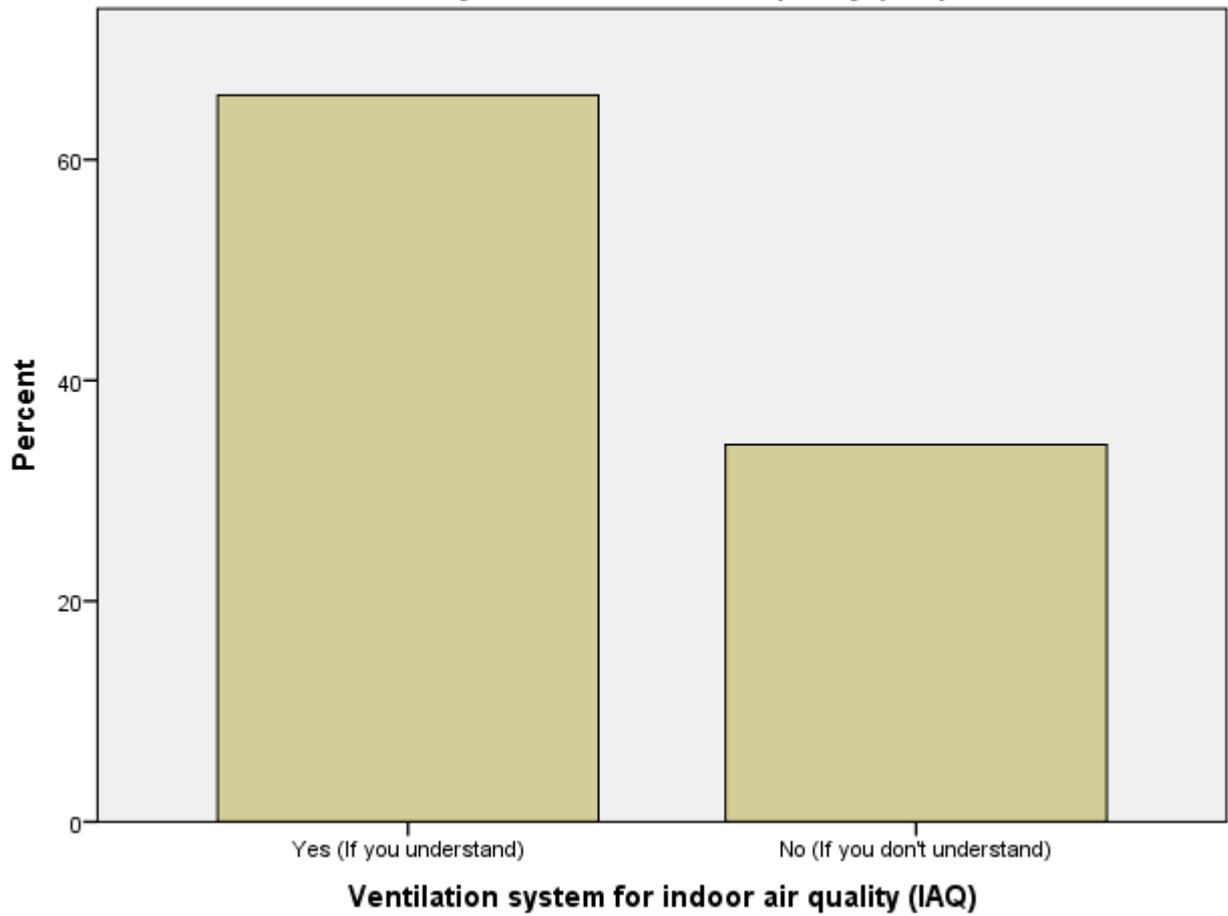
**Low-emitting materials**



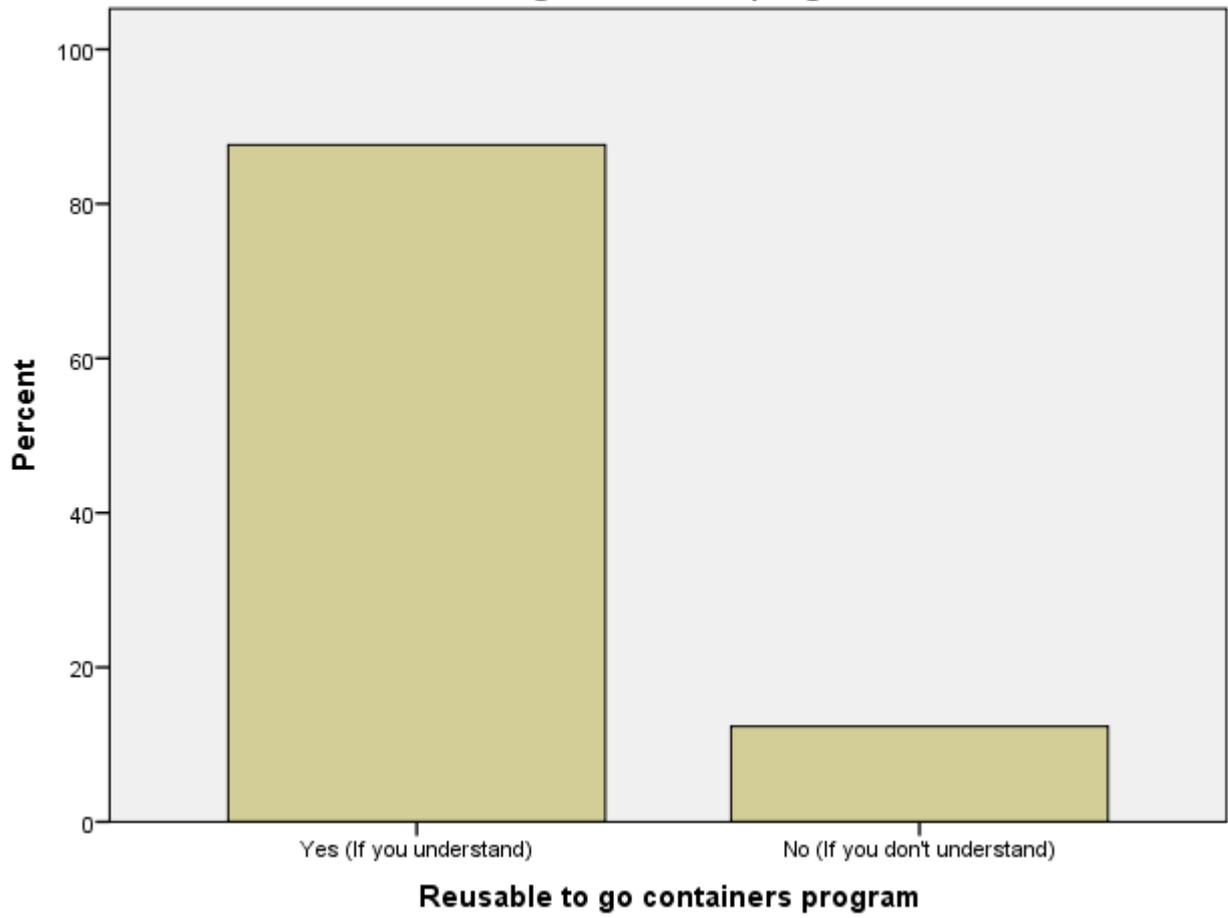
### Occupancy sensor control for lighting



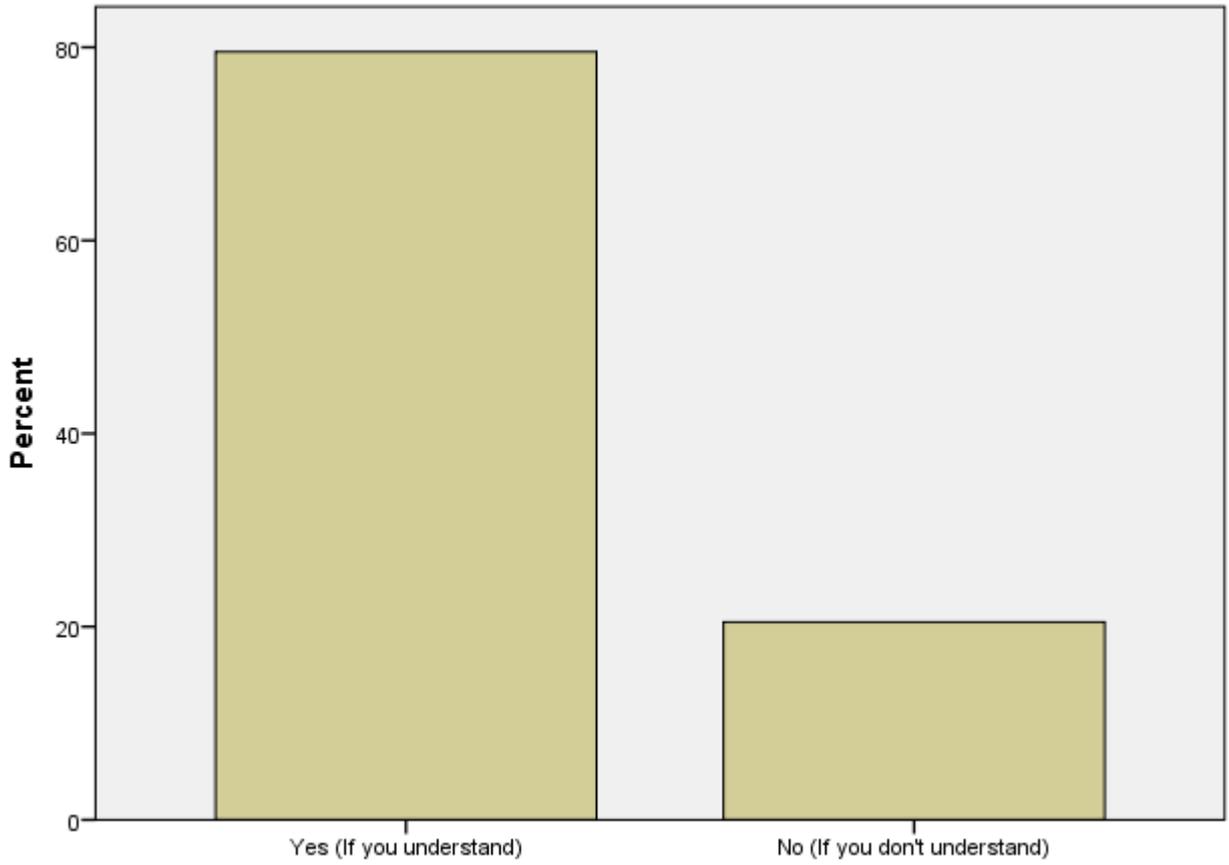
### Ventilation system for indoor air quality (IAQ)



### Reusable to go containers program

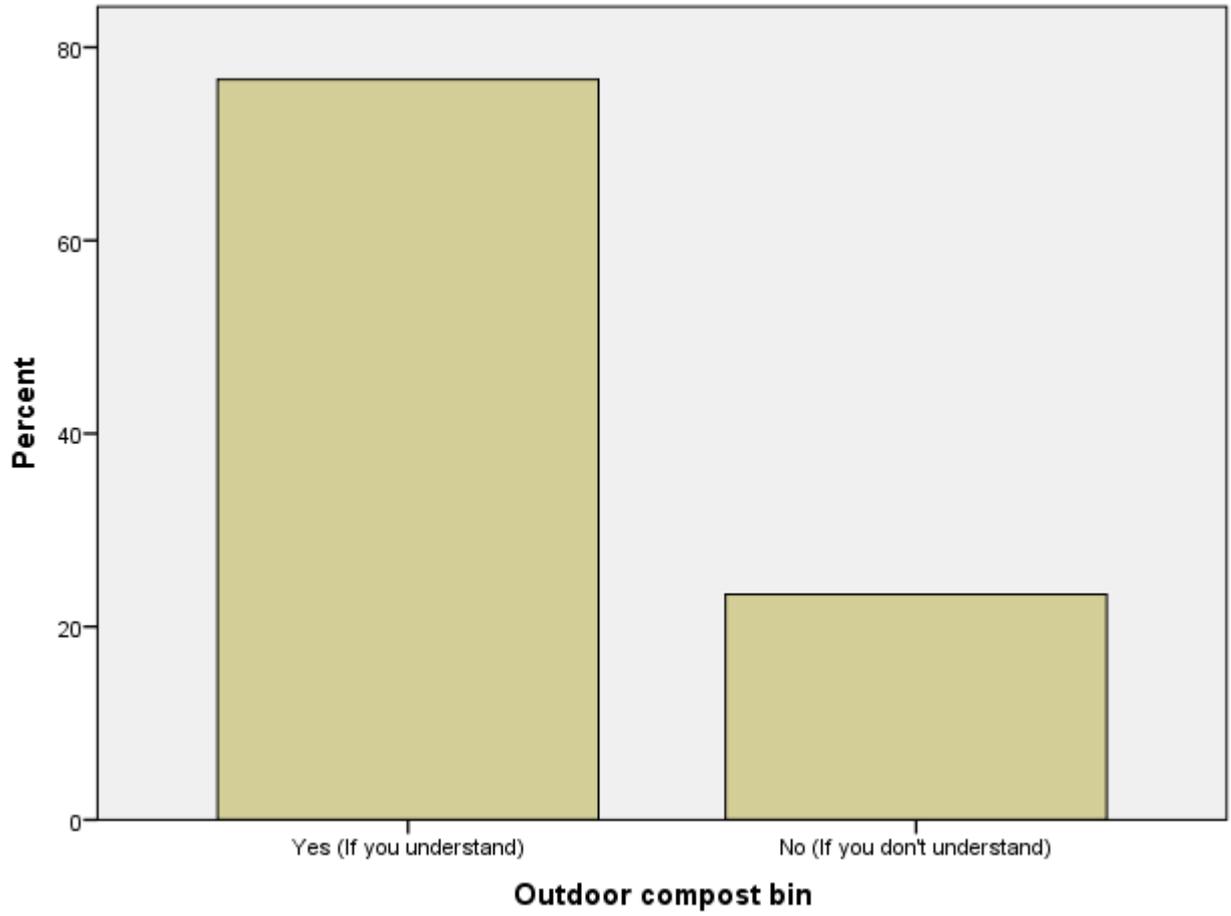


### Lending Library (online program)

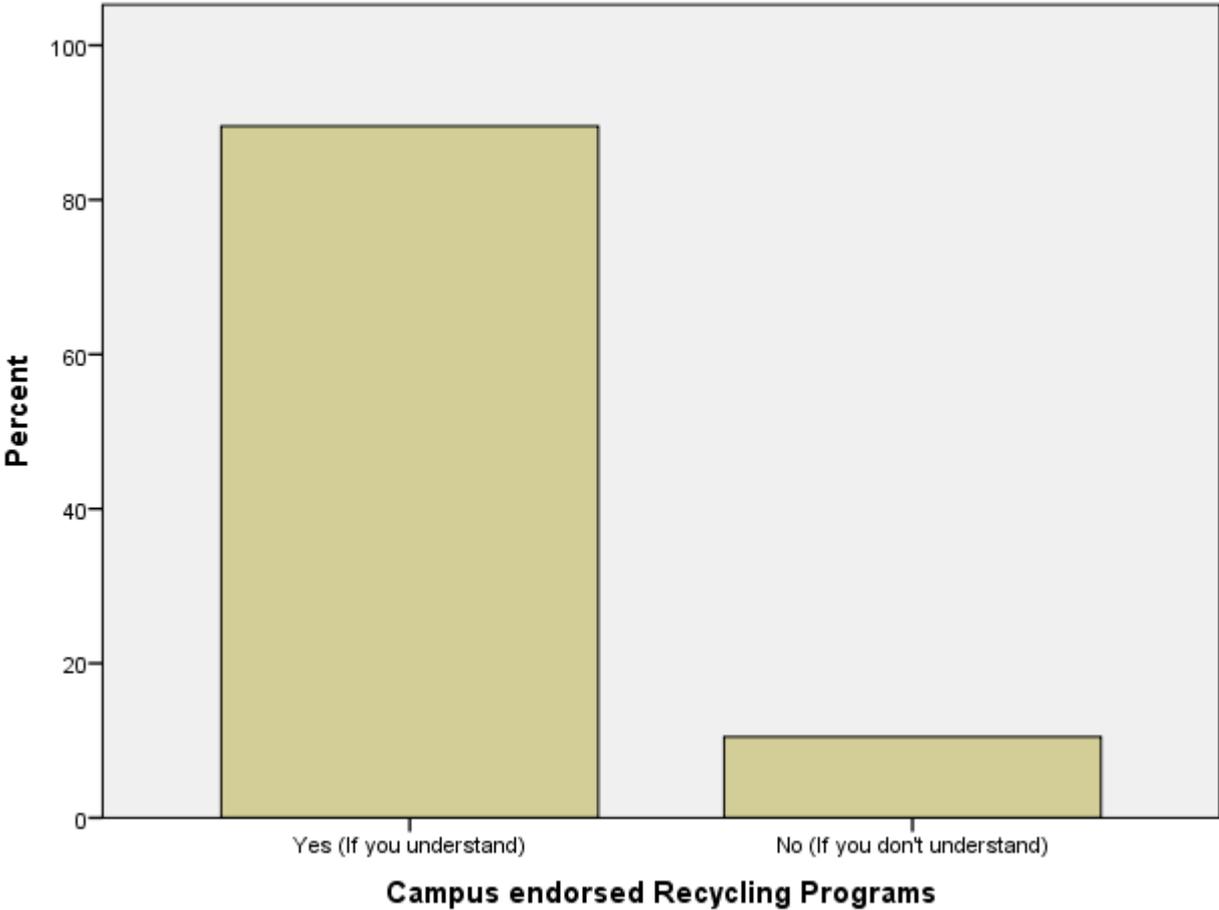


### Lending Library (online program)

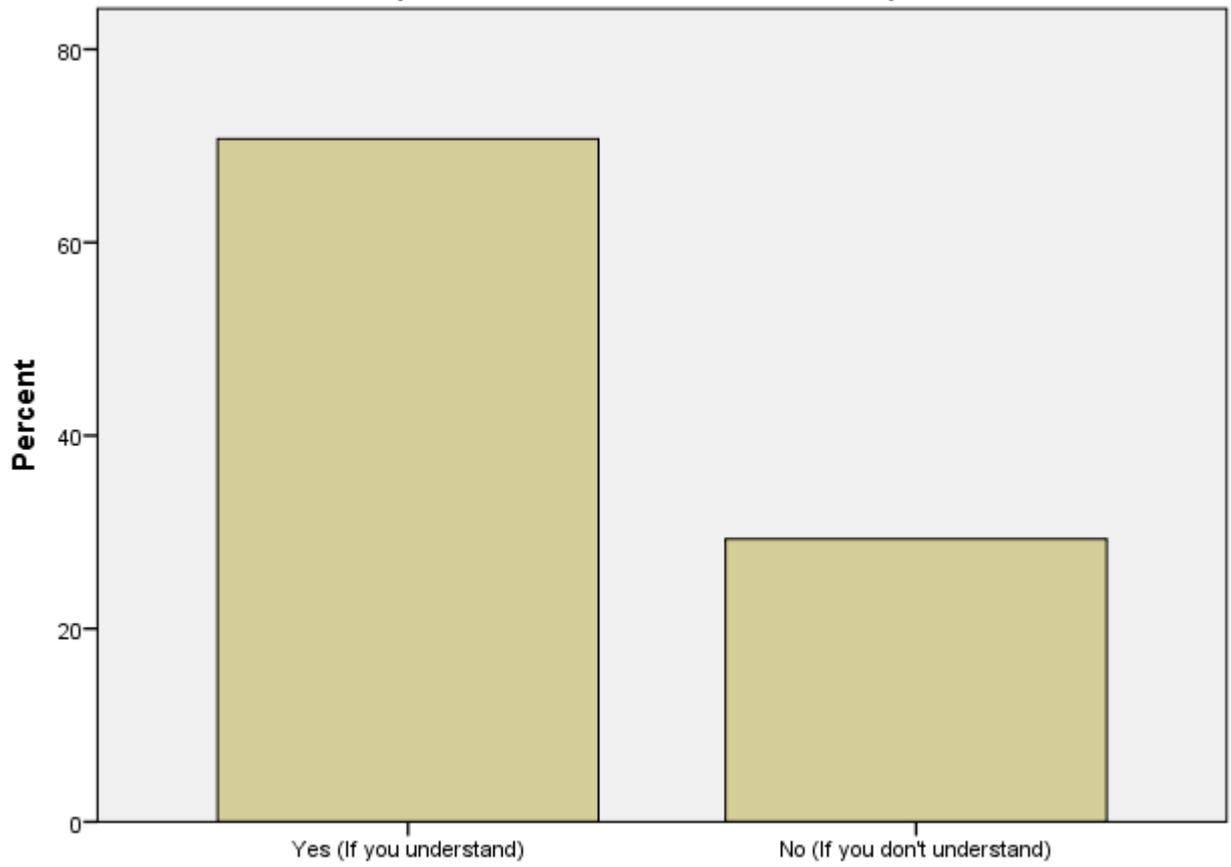
### Outdoor compost bin



### Campus endorsed Recycling Programs

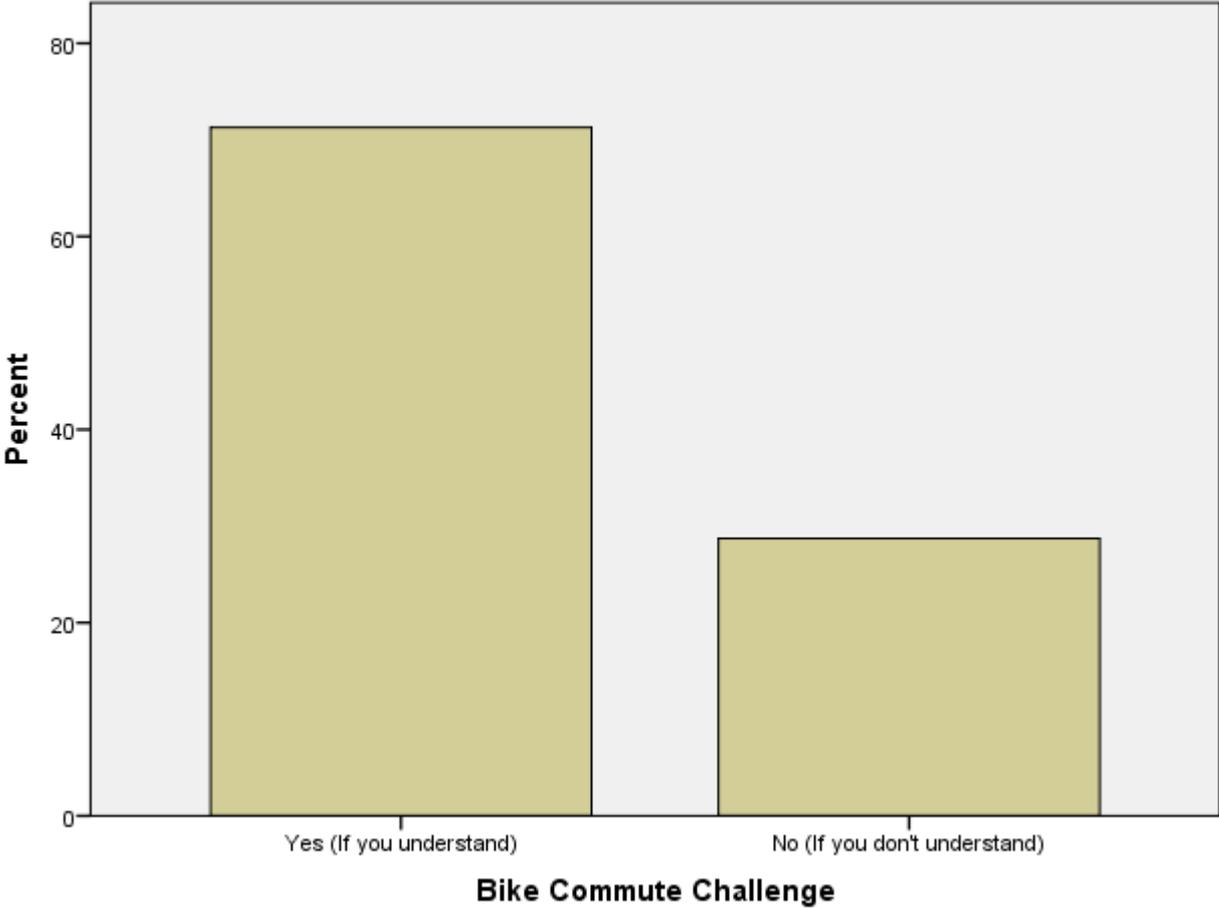


### Electric powered shuttle vehicles in campus

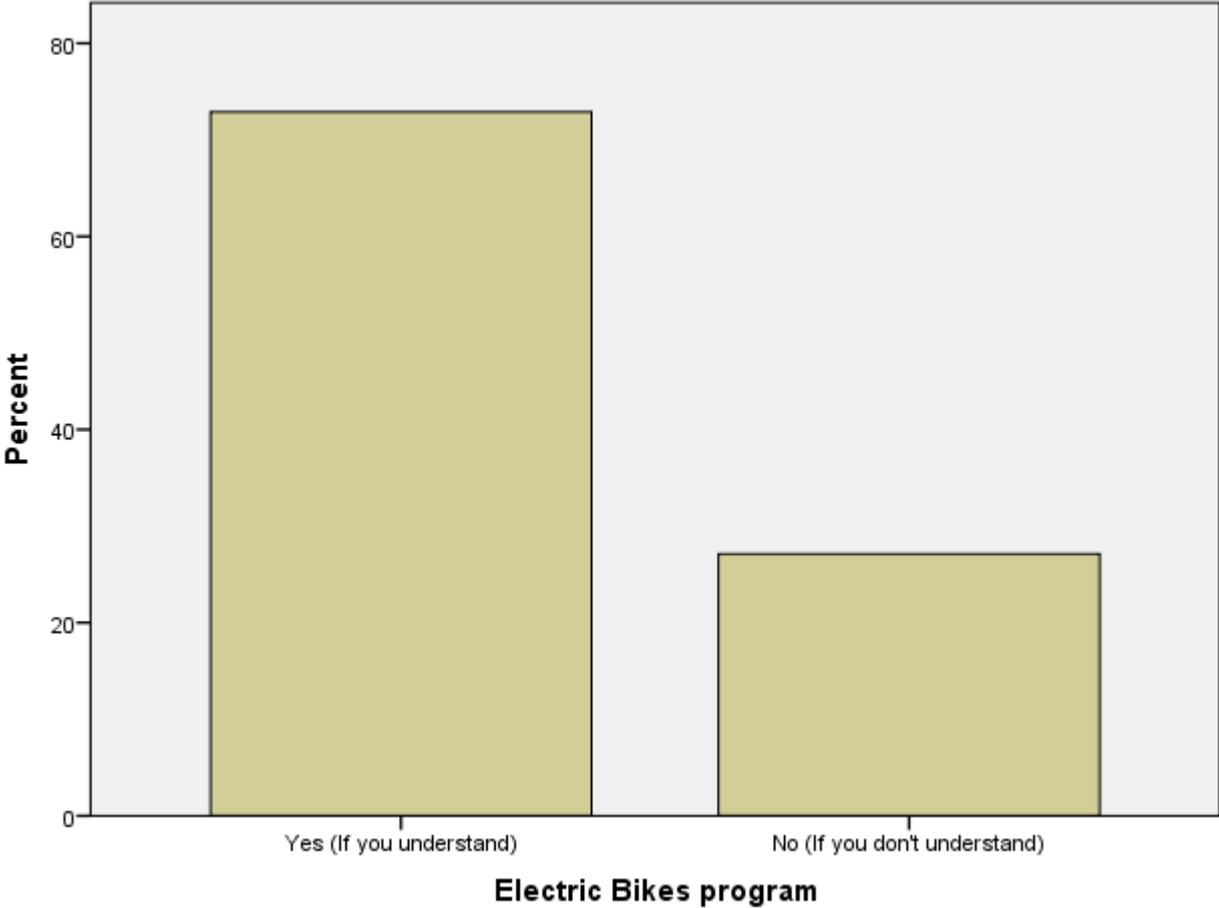


### Electric powered shuttle vehicles in campus

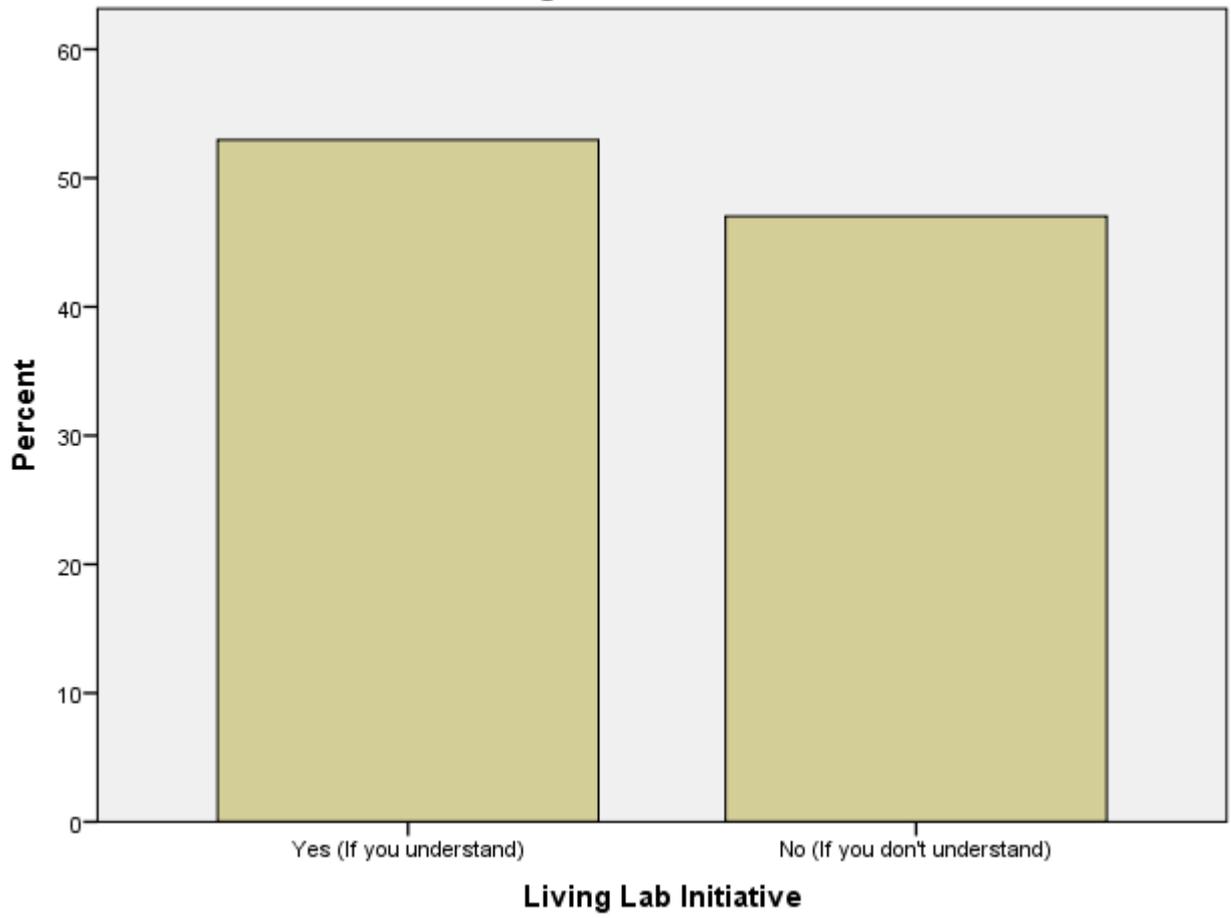
### Bike Commute Challenge



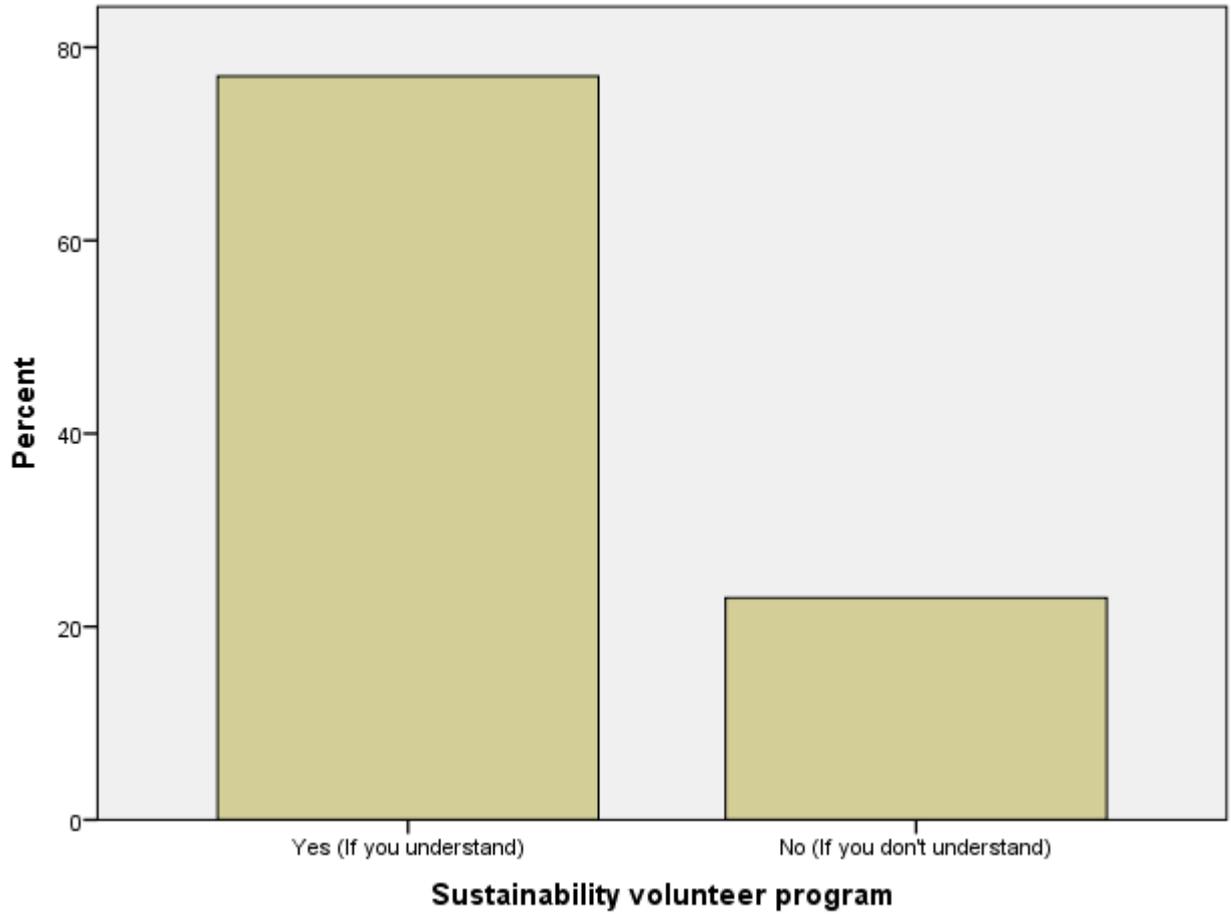
**Electric Bikes program**



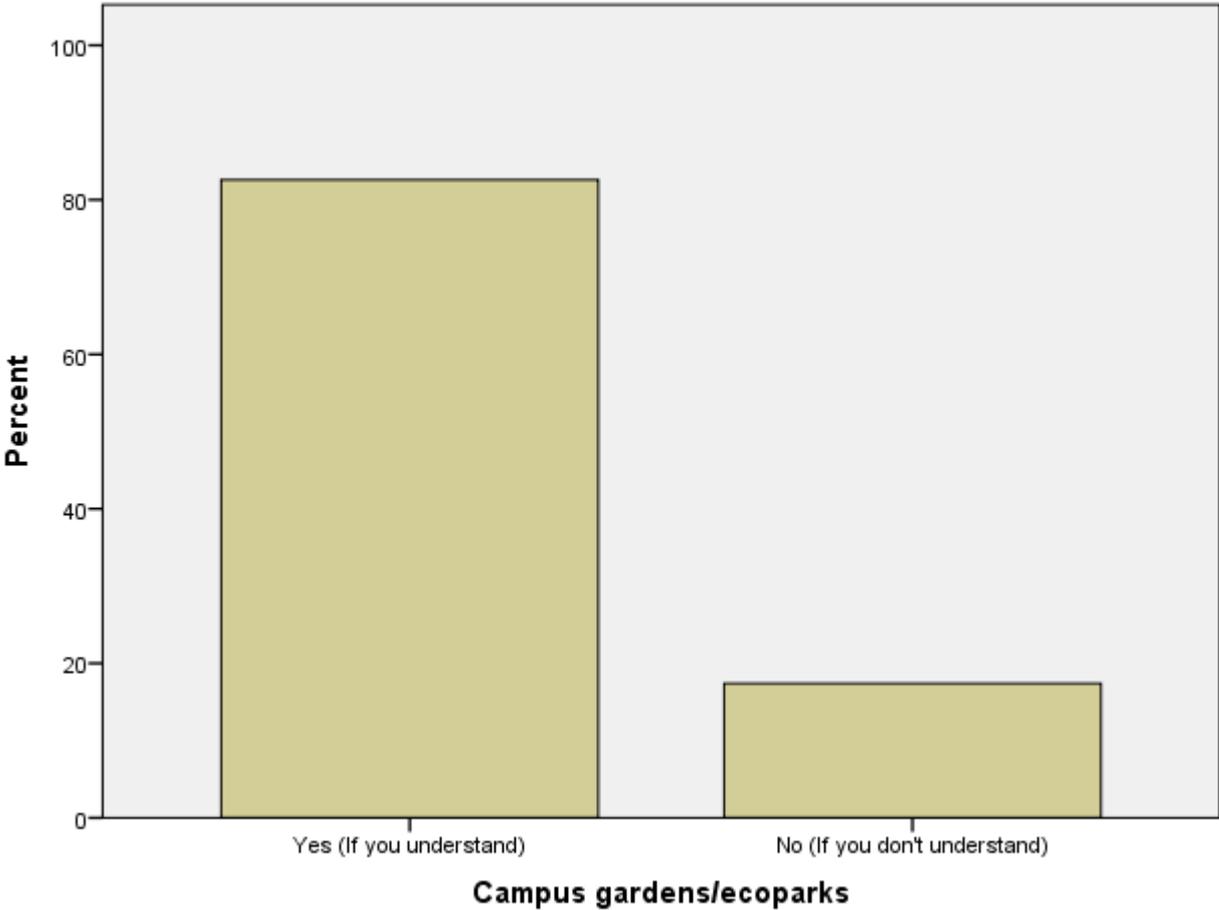
### Living Lab Initiative



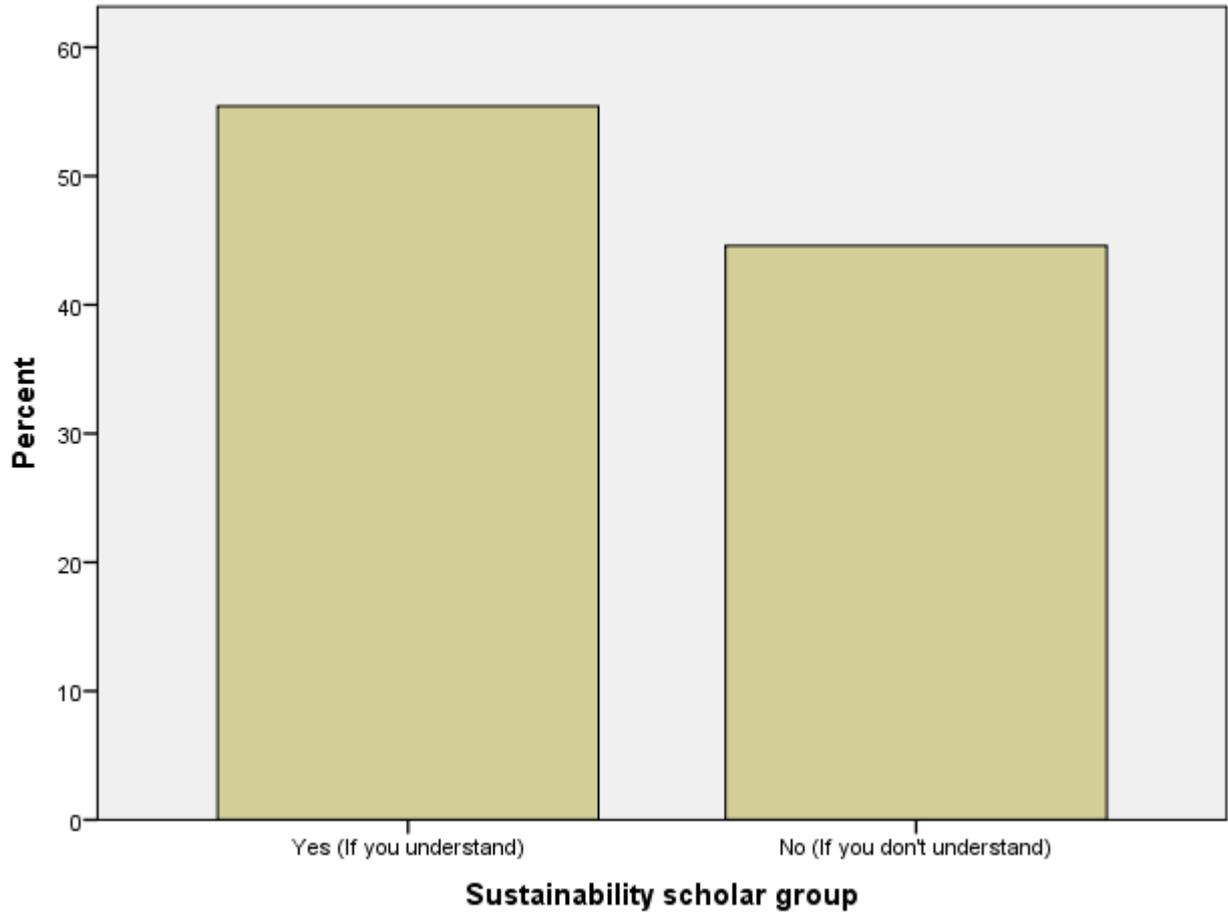
### Sustainability volunteer program



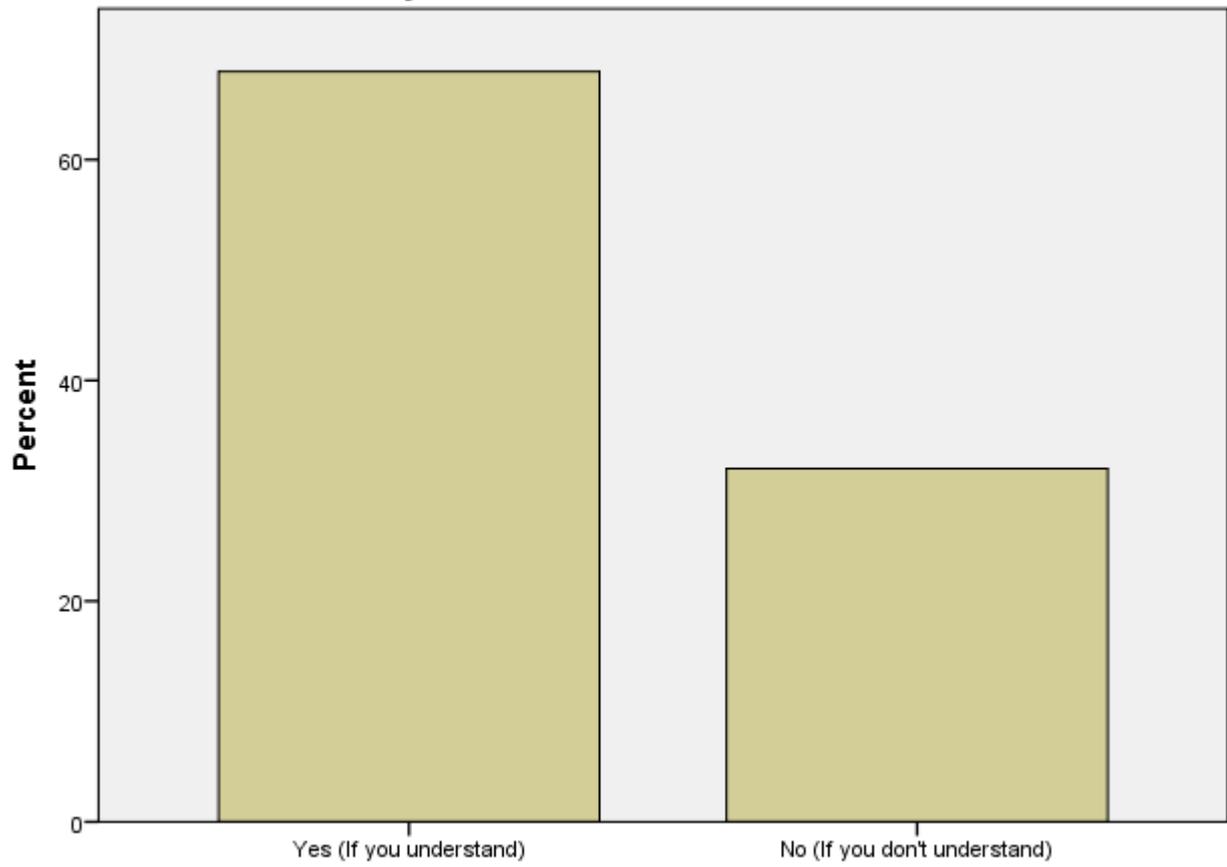
**Campus gardens/ecoparks**



### Sustainability scholar group

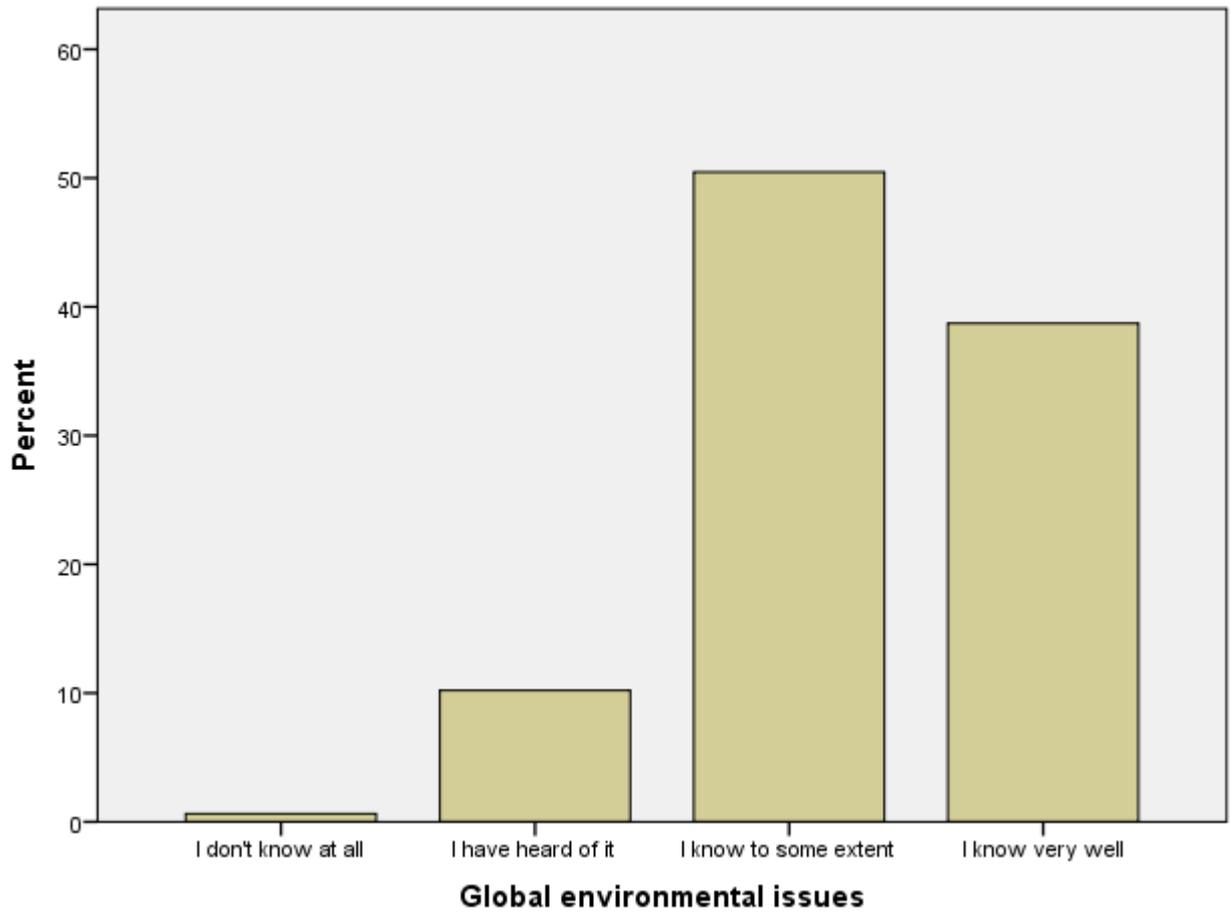


### Sustainability-related and focused courses/modules

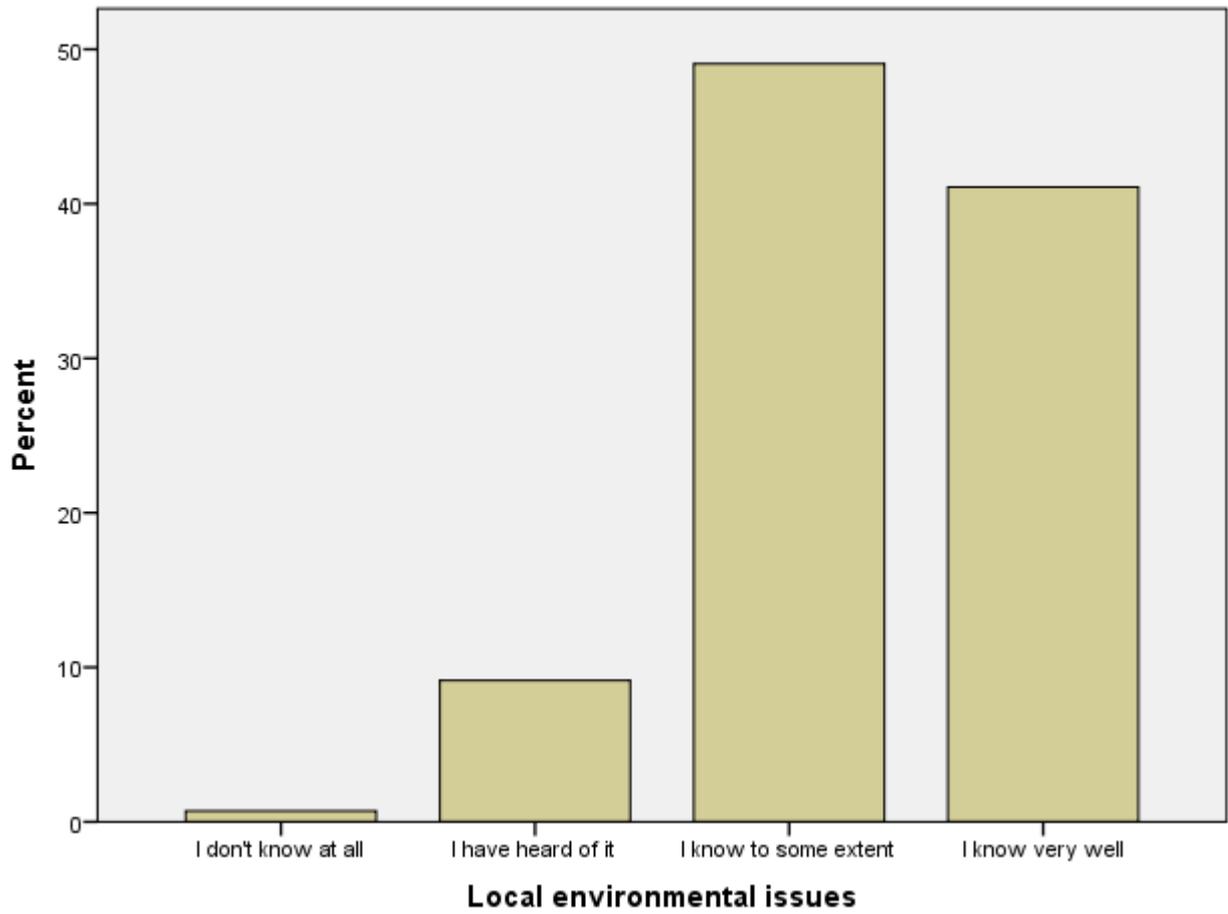


### Sustainability-related and focused courses/modules

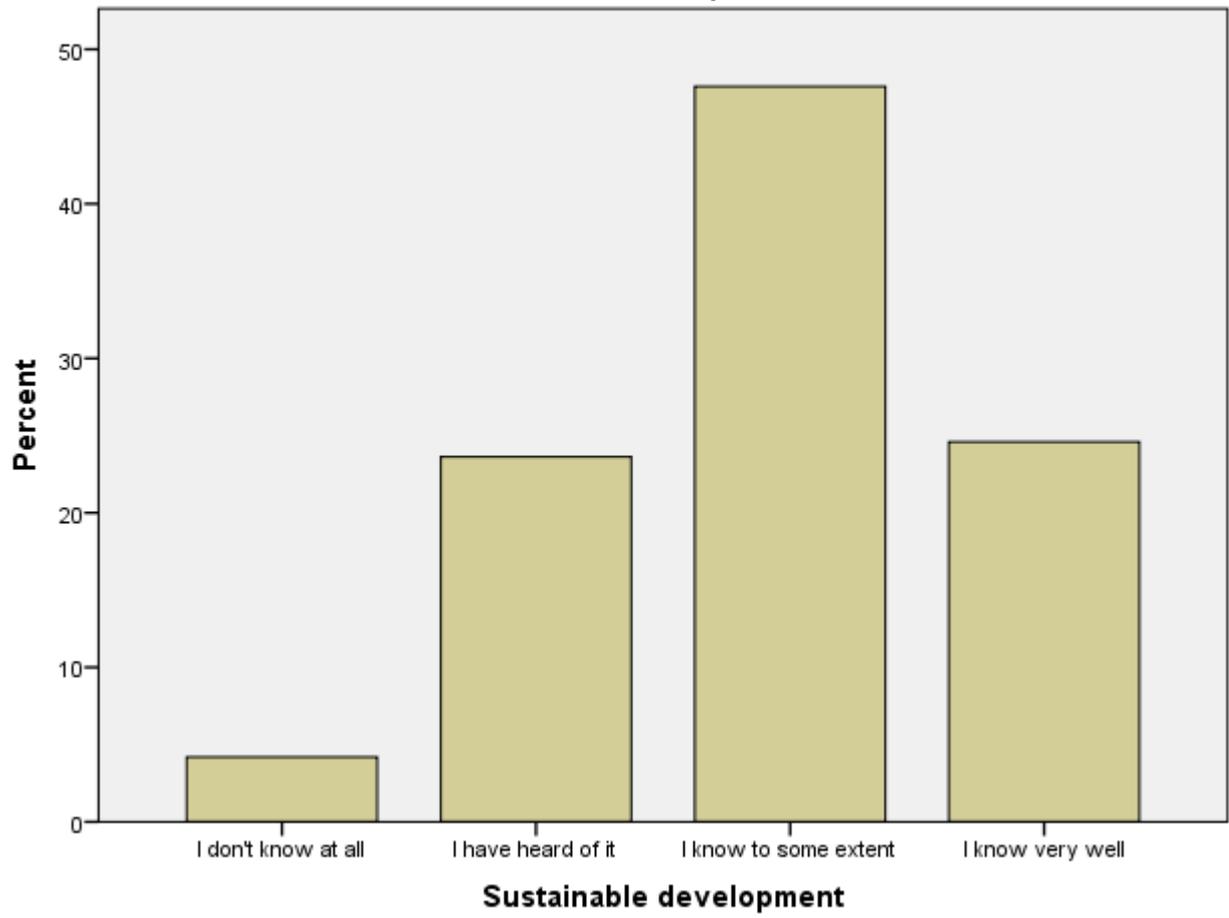
### Global environmental issues



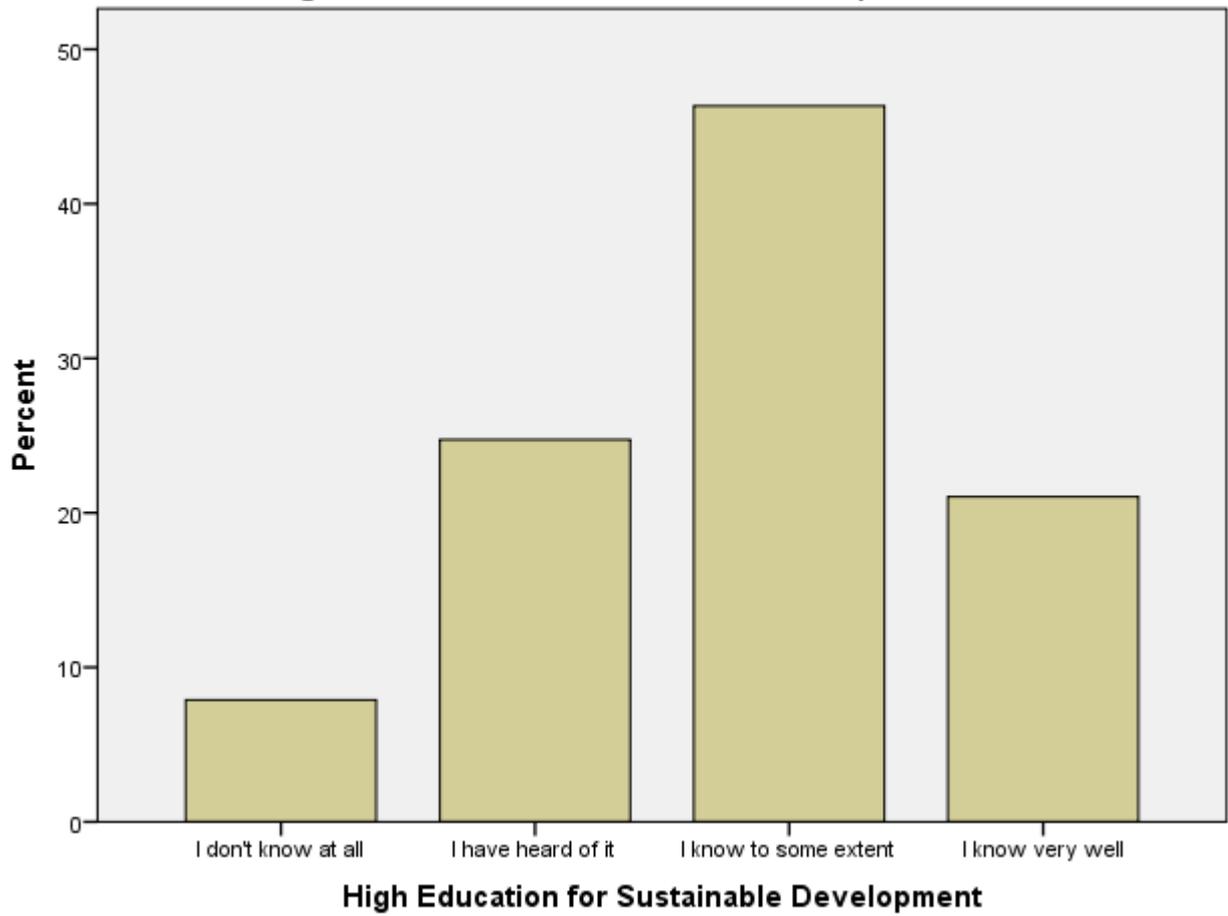
### Local environmental issues



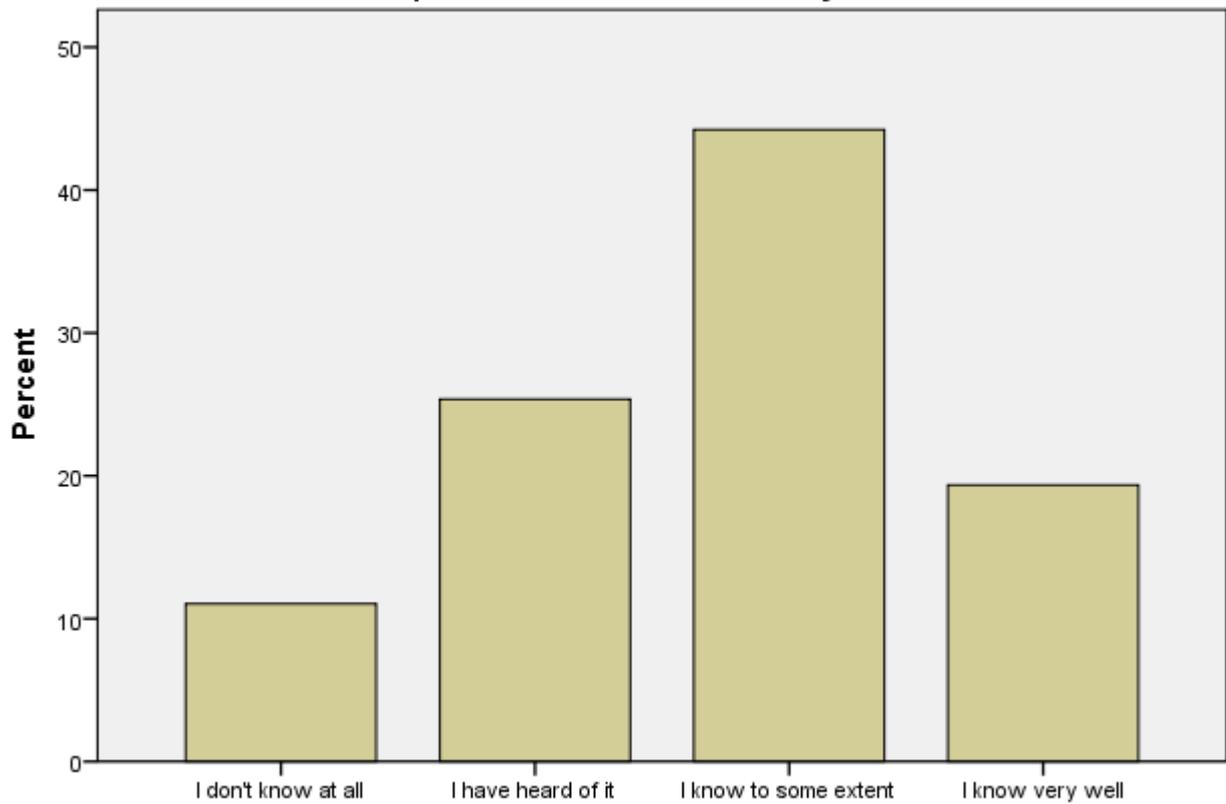
### Sustainable development



### High Education for Sustainable Development

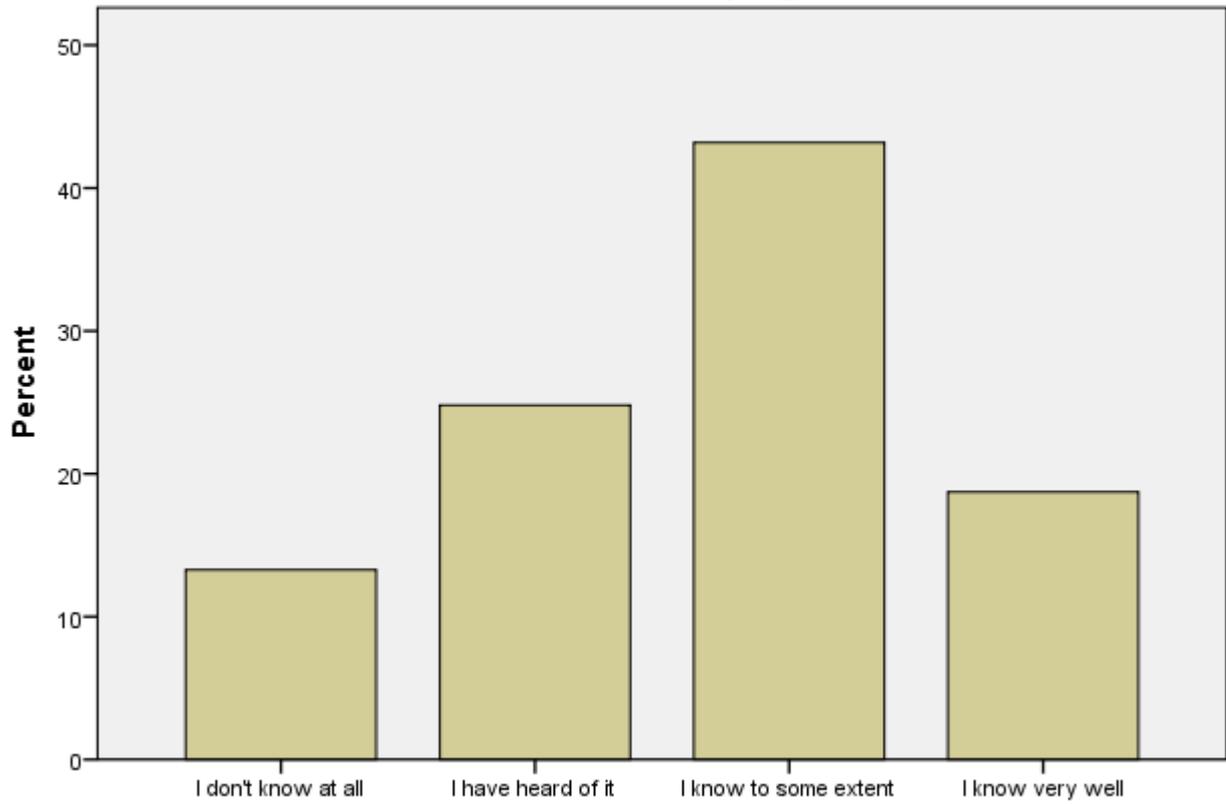


**The extent to which your college/department offers courses which address topics related to sustainability**



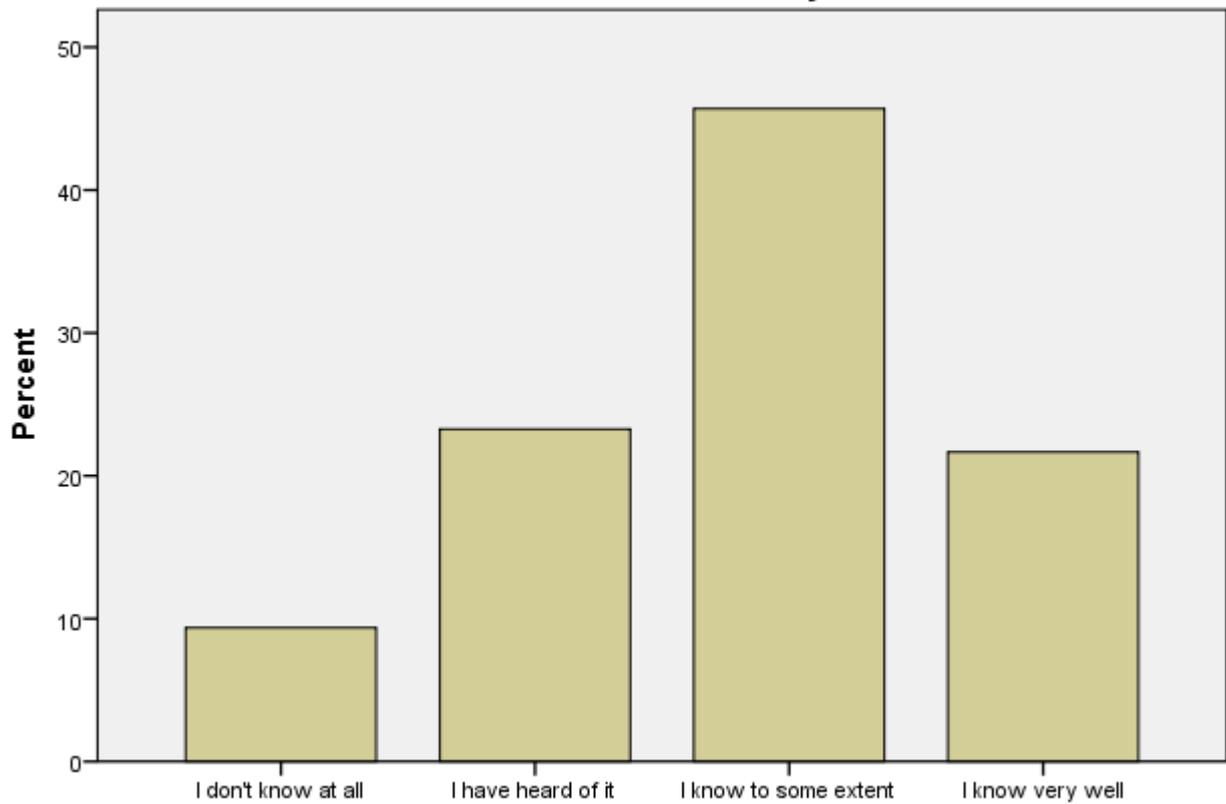
**The extent to which your college/department offers courses which address topics related to sustainability**

**The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program**



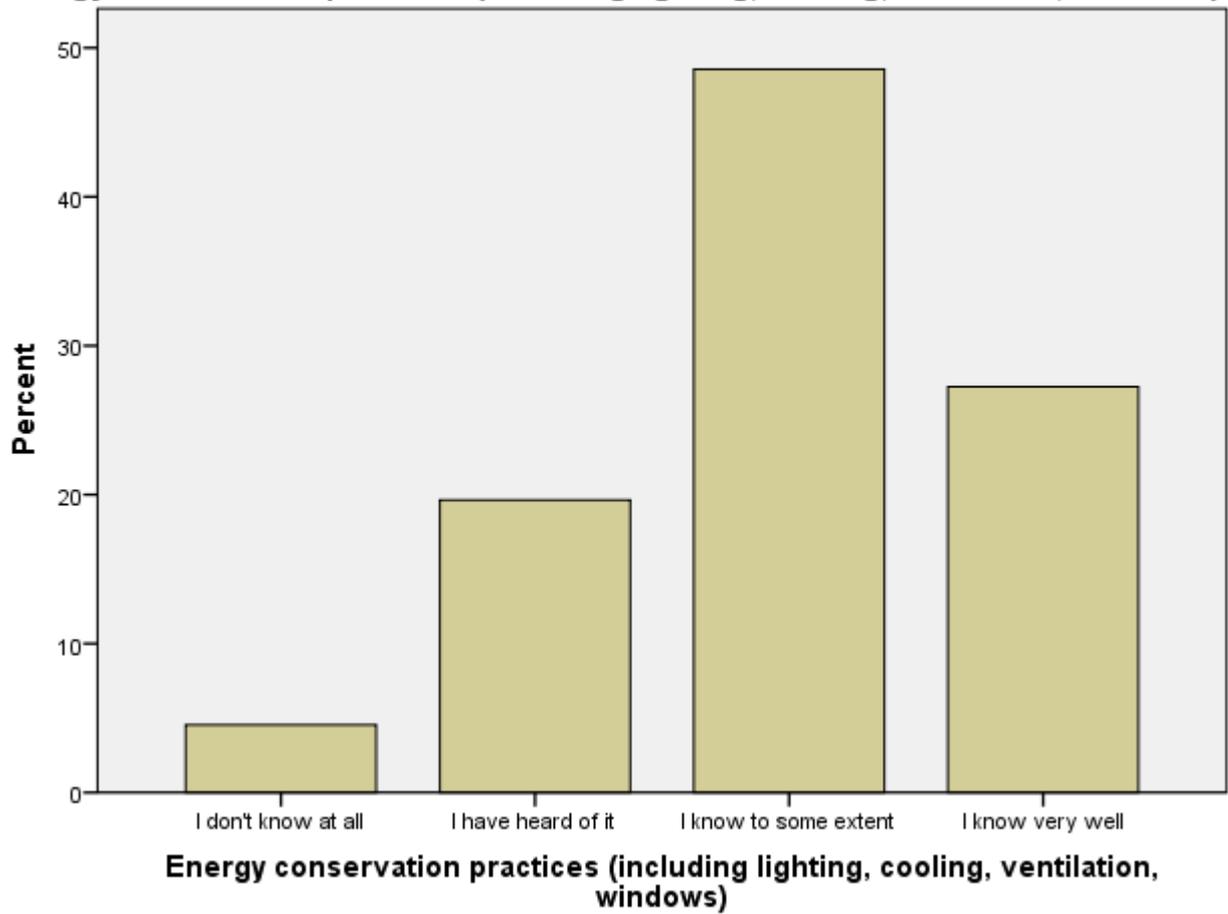
**The extent to which sustainability is a focus integrated into your Bachelor/Master's/PhD program**

**Involvement of your college/department in research and projects related to environmental sustainability**

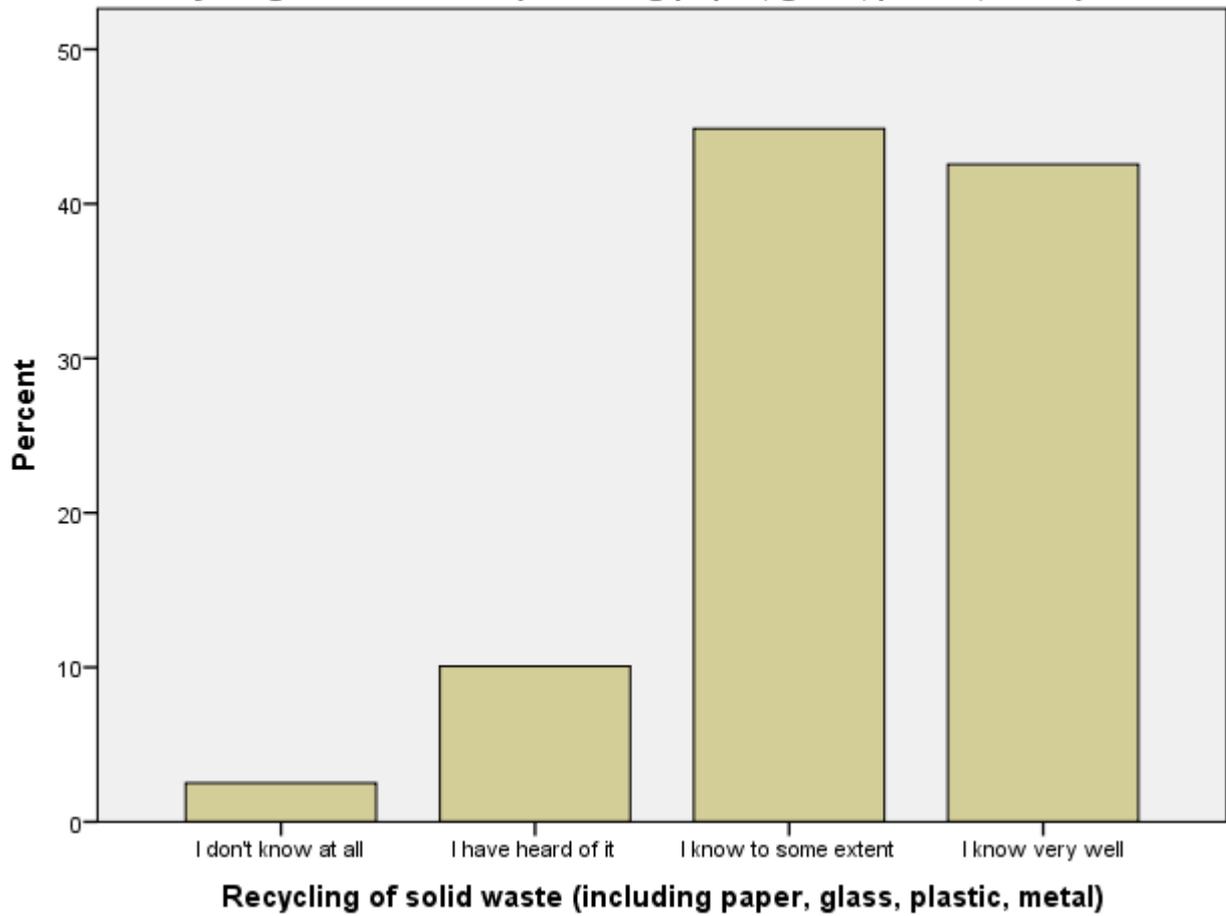


**Involvement of your college/department in research and projects related to environmental sustainability**

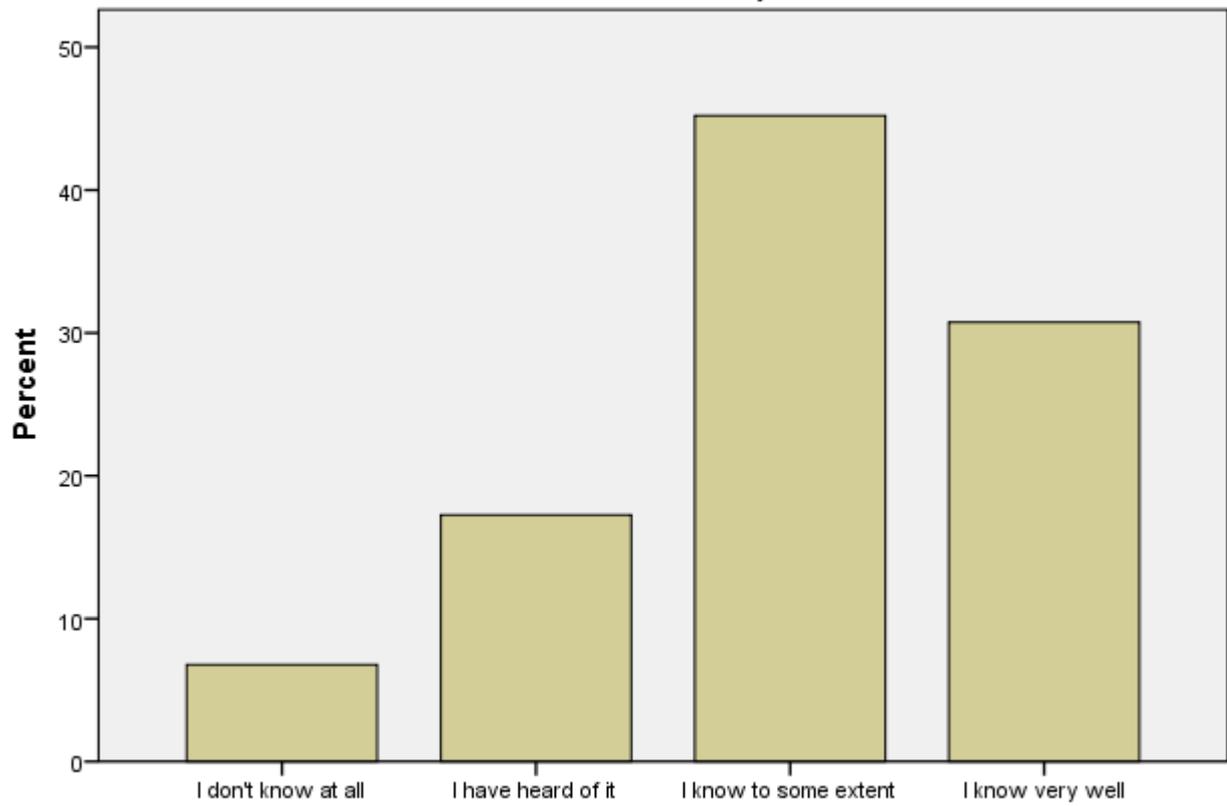
**Energy conservation practices (including lighting, cooling, ventilation, windows)**



### Recycling of solid waste (including paper, glass, plastic, metal)

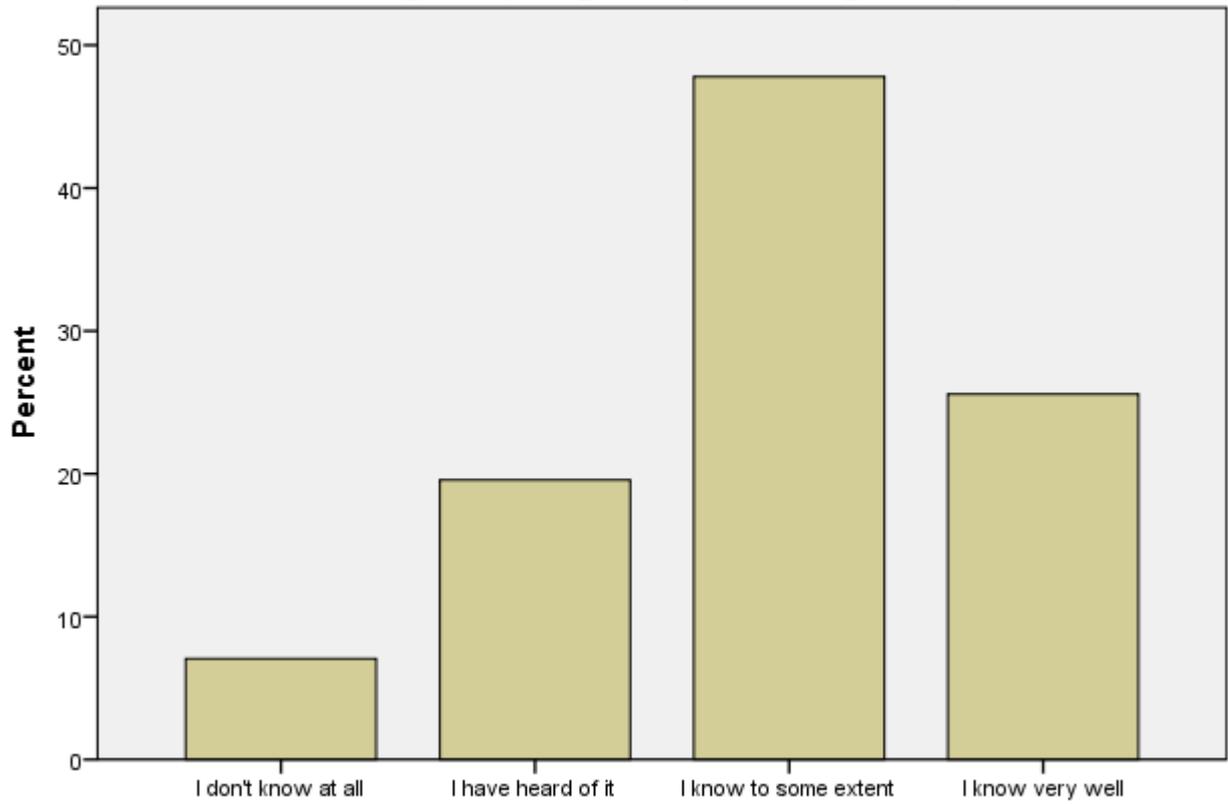


**Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)**



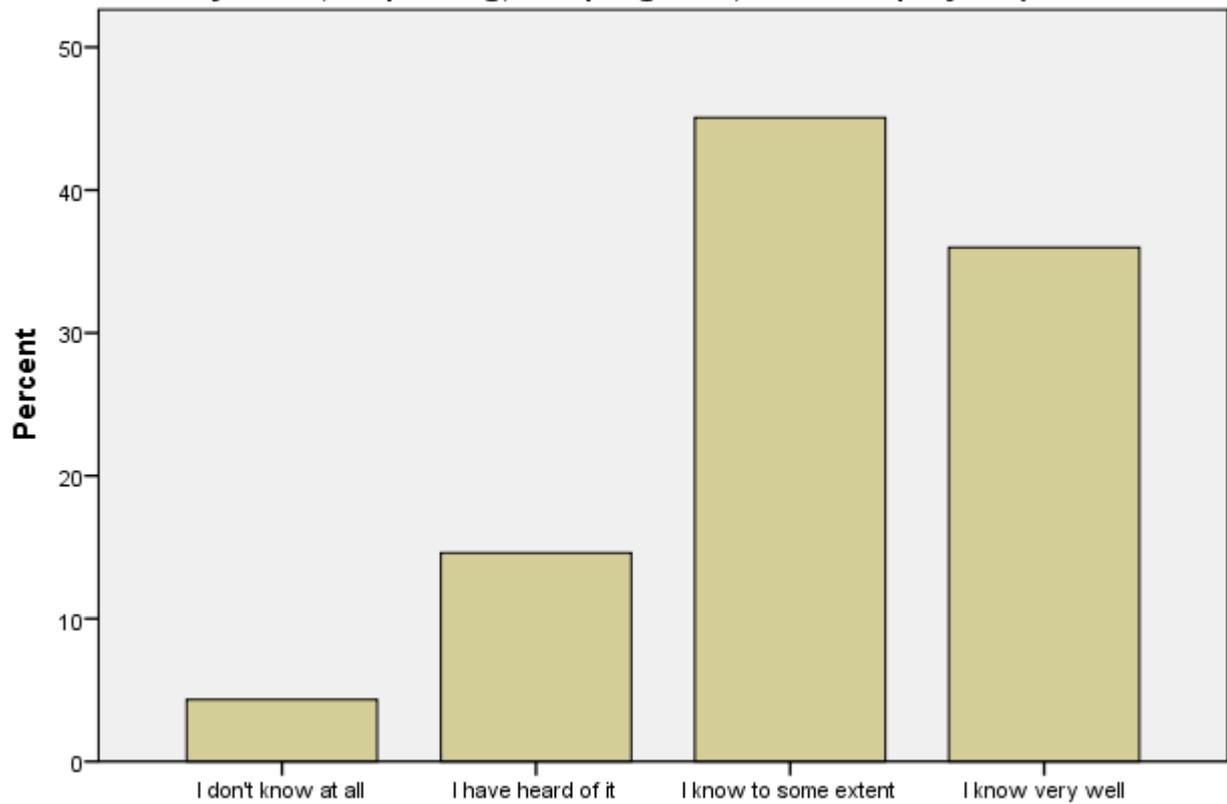
**Water conservation practices (including efficient toilets, minimal irrigation, harvested rainwater)**

**Sustainable landscaping (e.g., emphasizing native plants, biodiversity, minimising lawn, integrated pest management)**



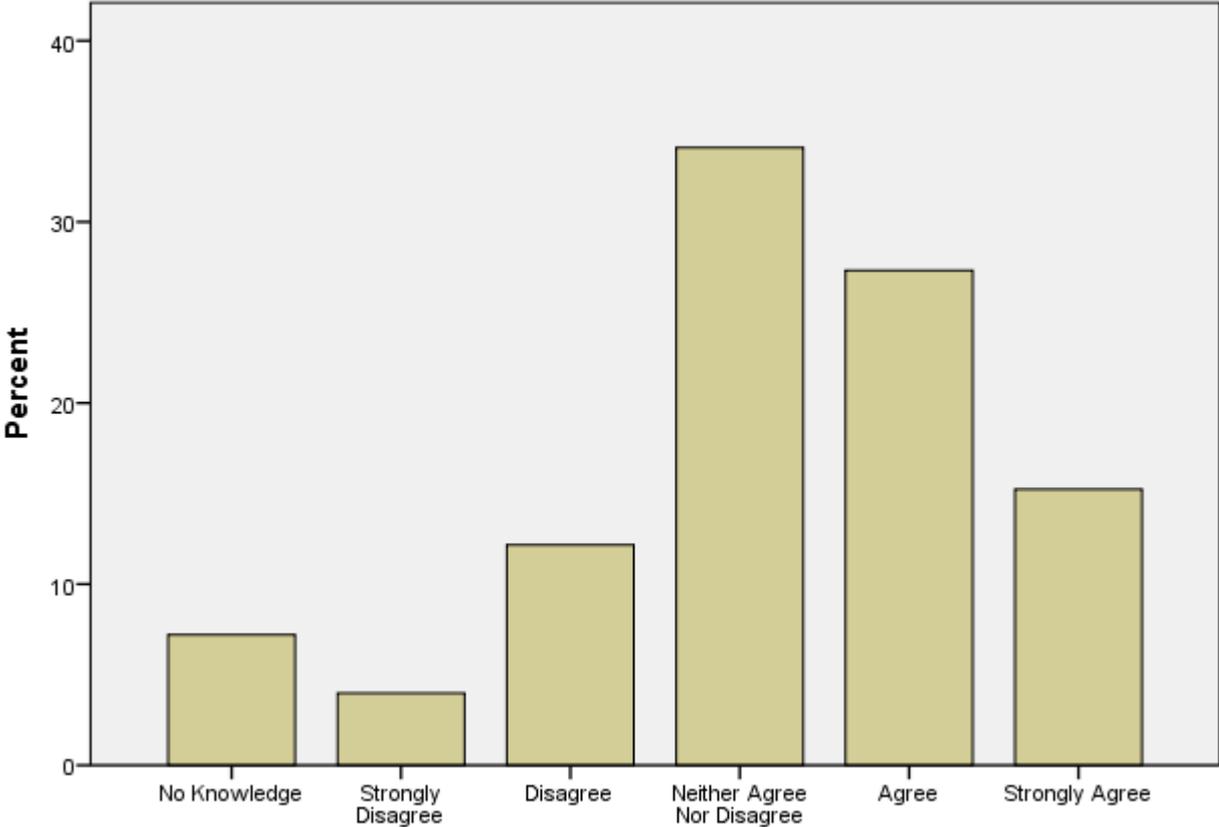
**Sustainable landscaping (e.g., emphasizing native plants, biodiversity, minimising lawn, integrated pest management)**

**Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects)**



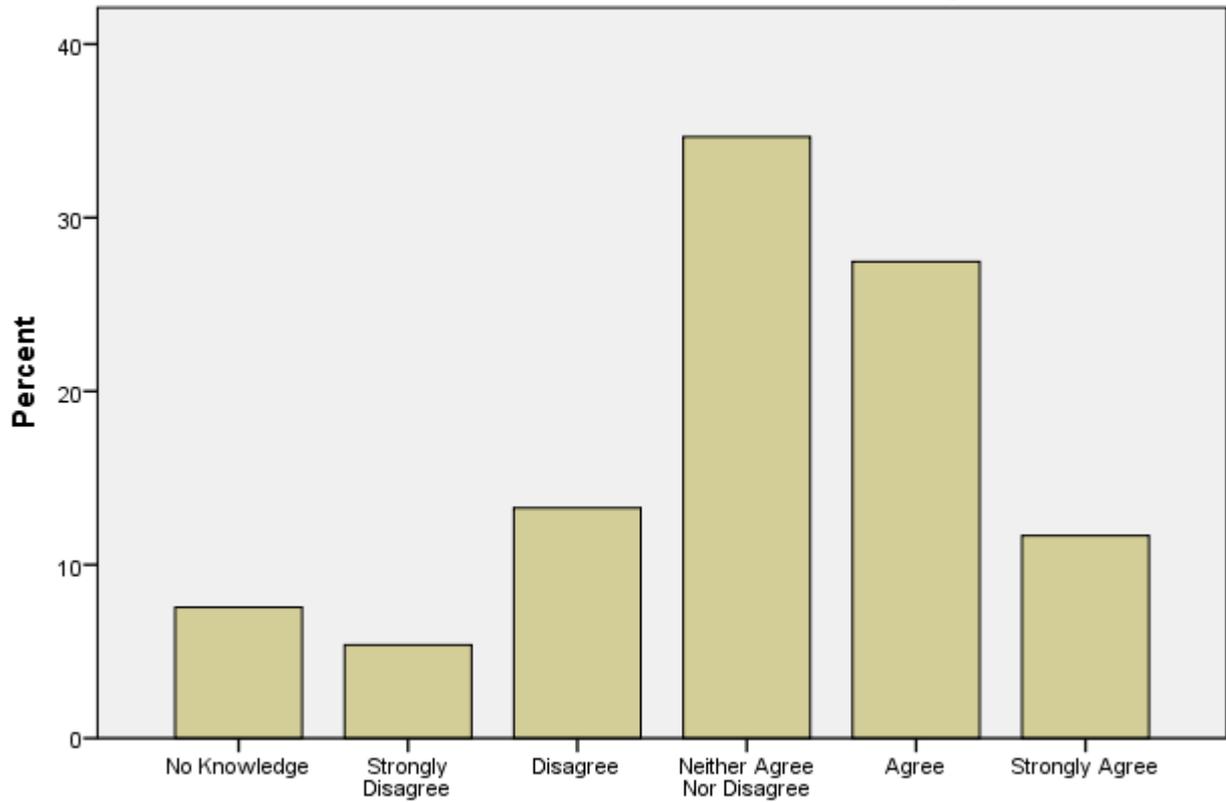
**Sustainable transportation program (such as bicycle and pedestrian friendly systems, carpooling, bus programs, biodiesel projects)**

**University has created a written statement of their commitment to sustainability**



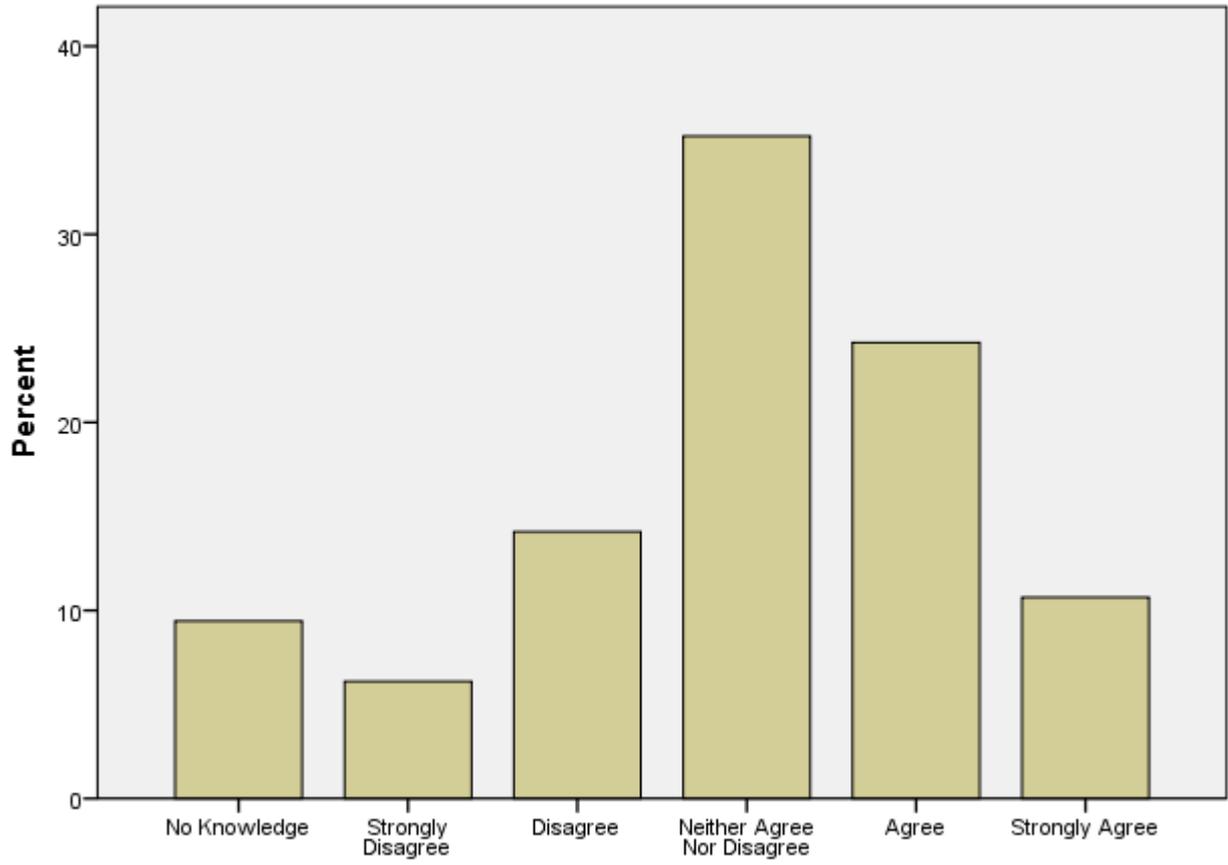
**University has created a written statement of their commitment to sustainability**

**Each department within the sustainable university has created its own written statement of their commitment to sustainability**



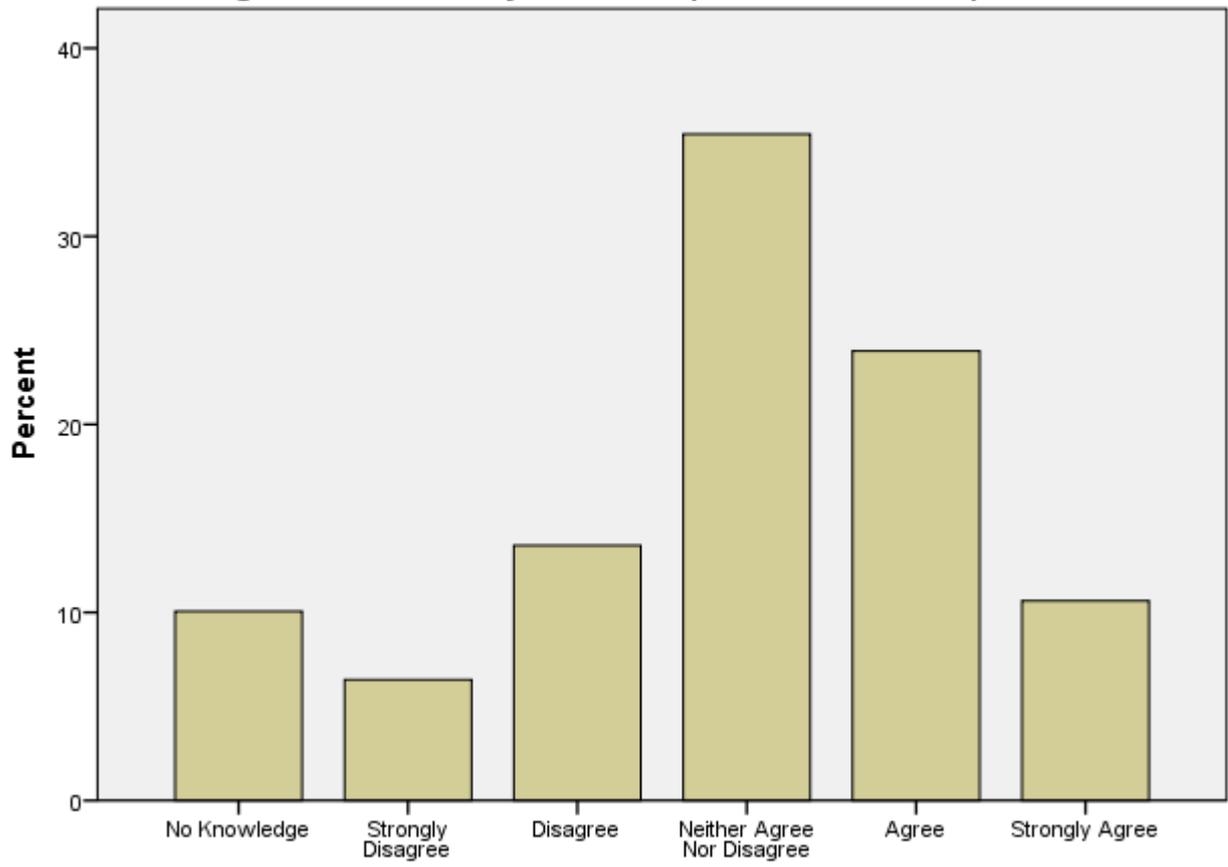
**Each department within the sustainable university has created its own written statement of their commitment to sustainability**

**Sustainability audits are performed on the surrounding community**



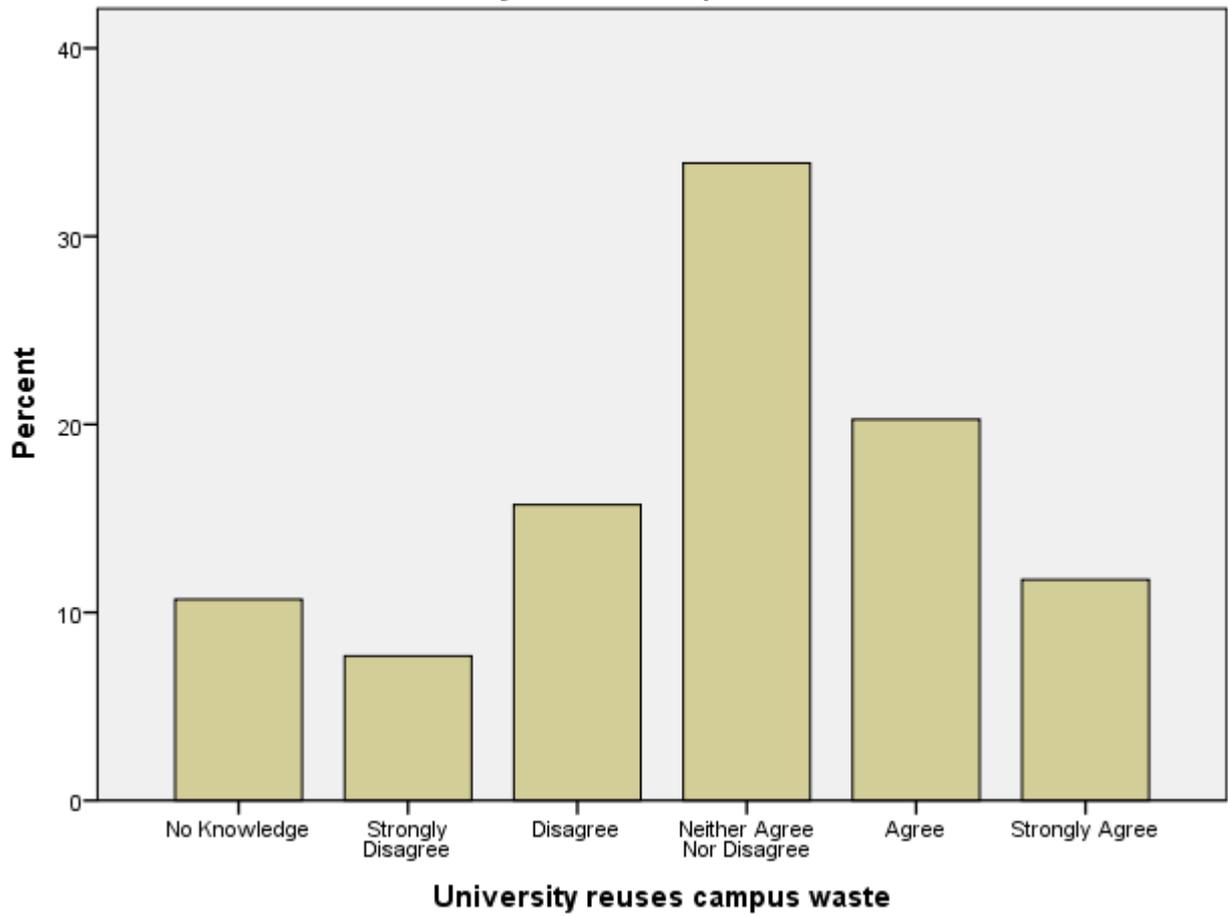
**Sustainability audits are performed on the surrounding community**

**Regular sustainability audits are performed on campus**

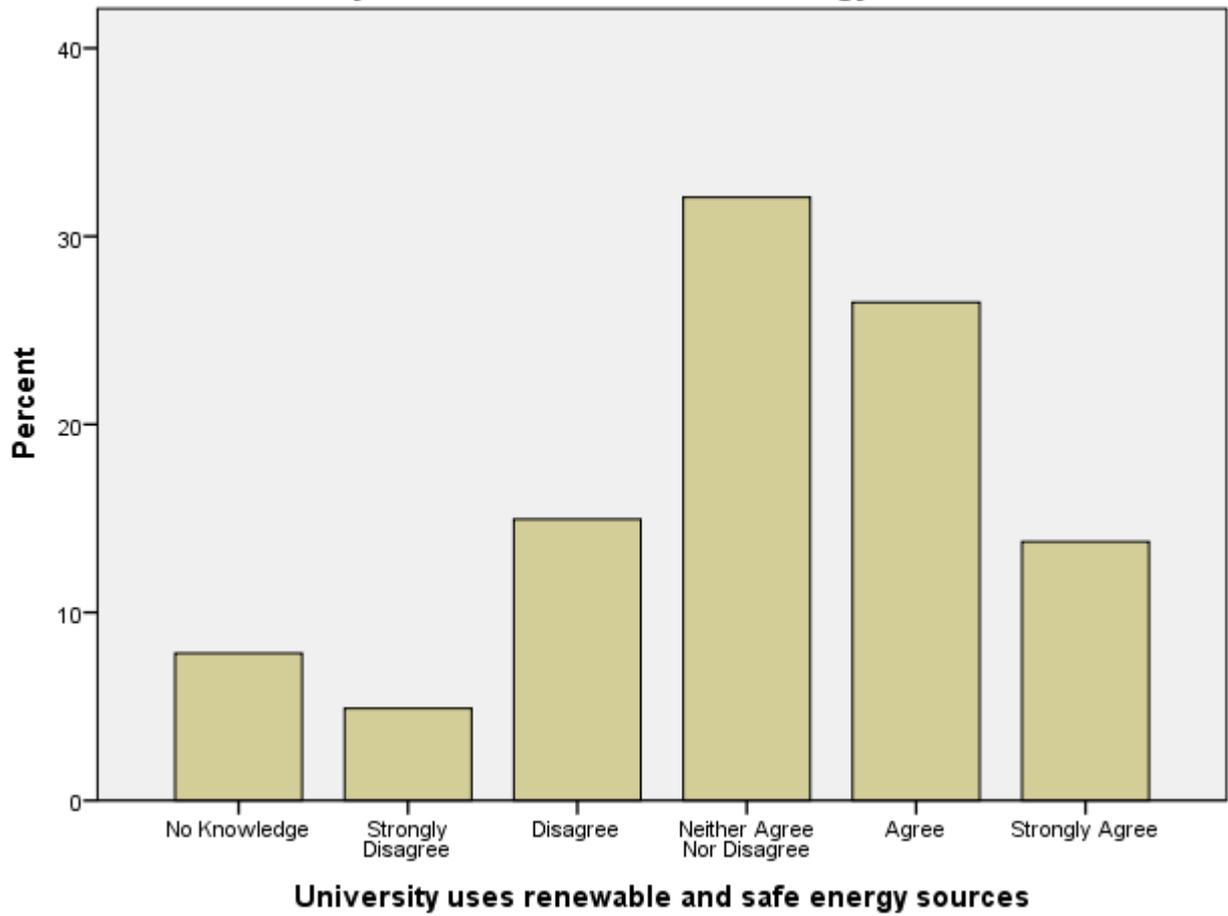


**Regular sustainability audits are performed on campus**

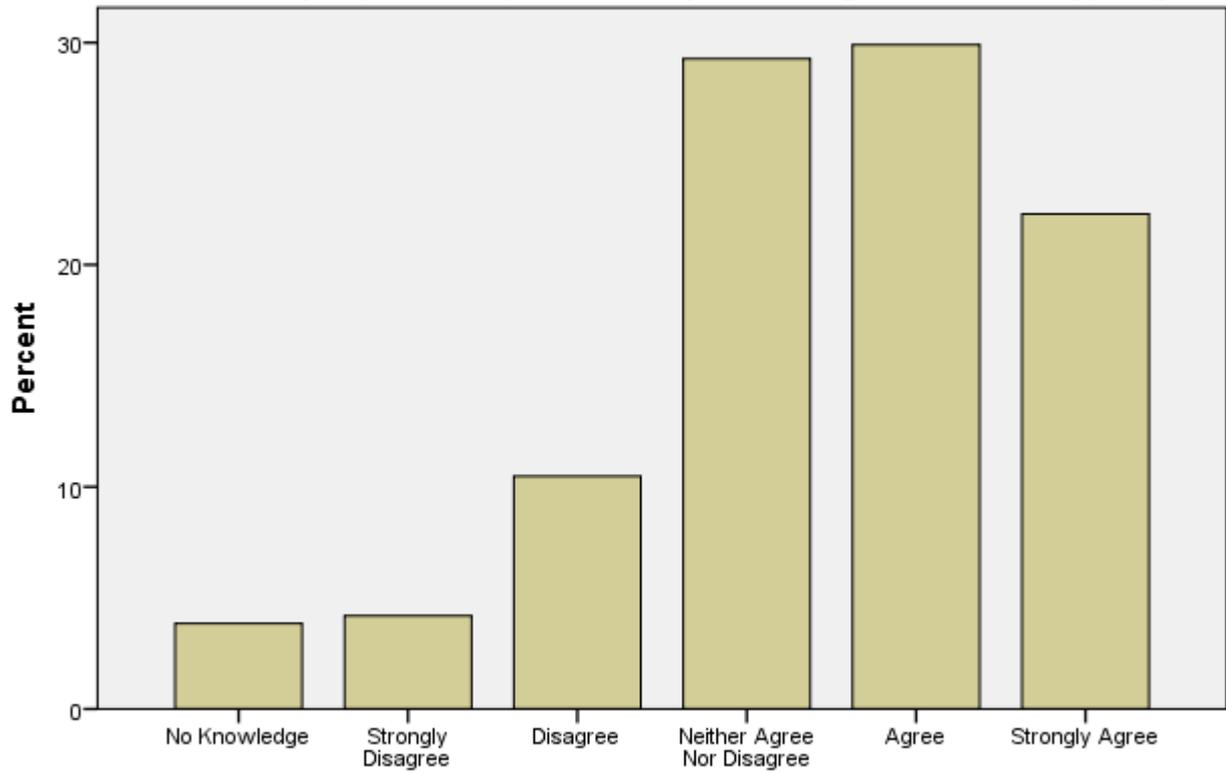
**University reuses campus waste**



### University uses renewable and safe energy sources

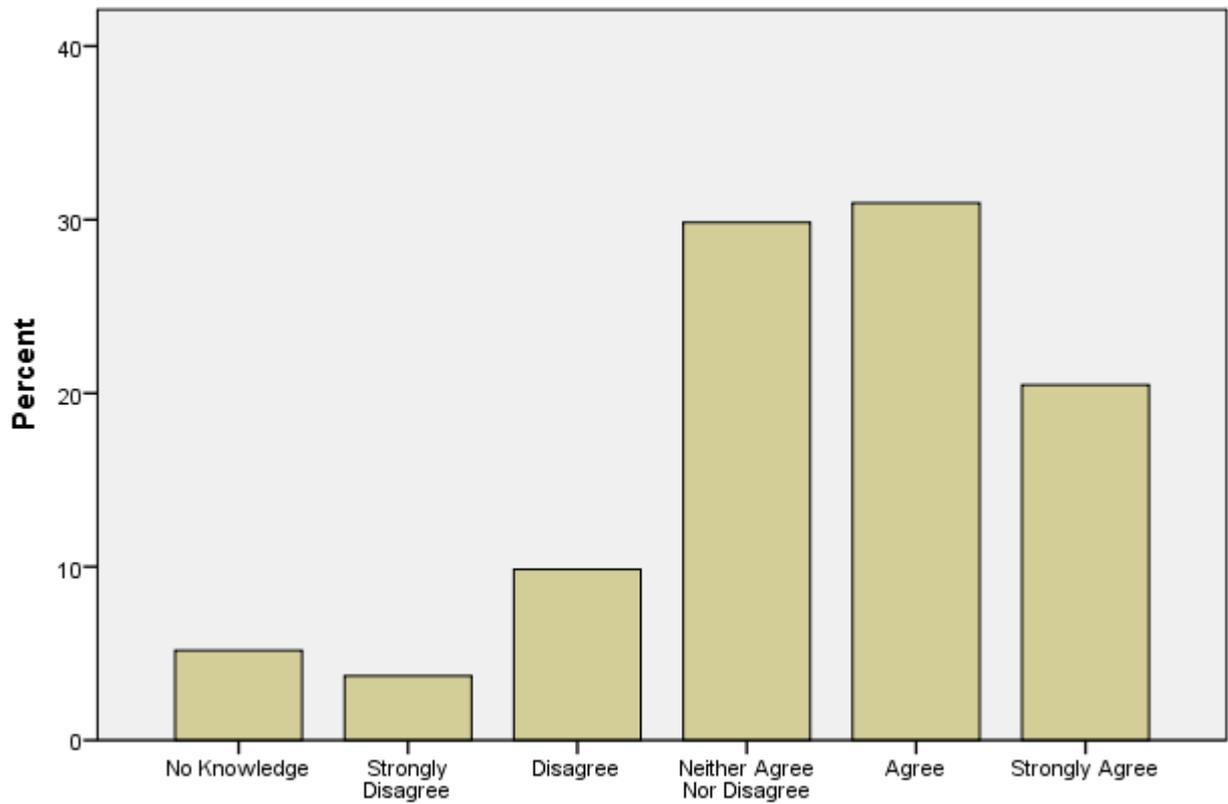


**University emphasises sustainability through support services(e.g. Recycling bins across campus, efficient public transport throughout university, etc.)**



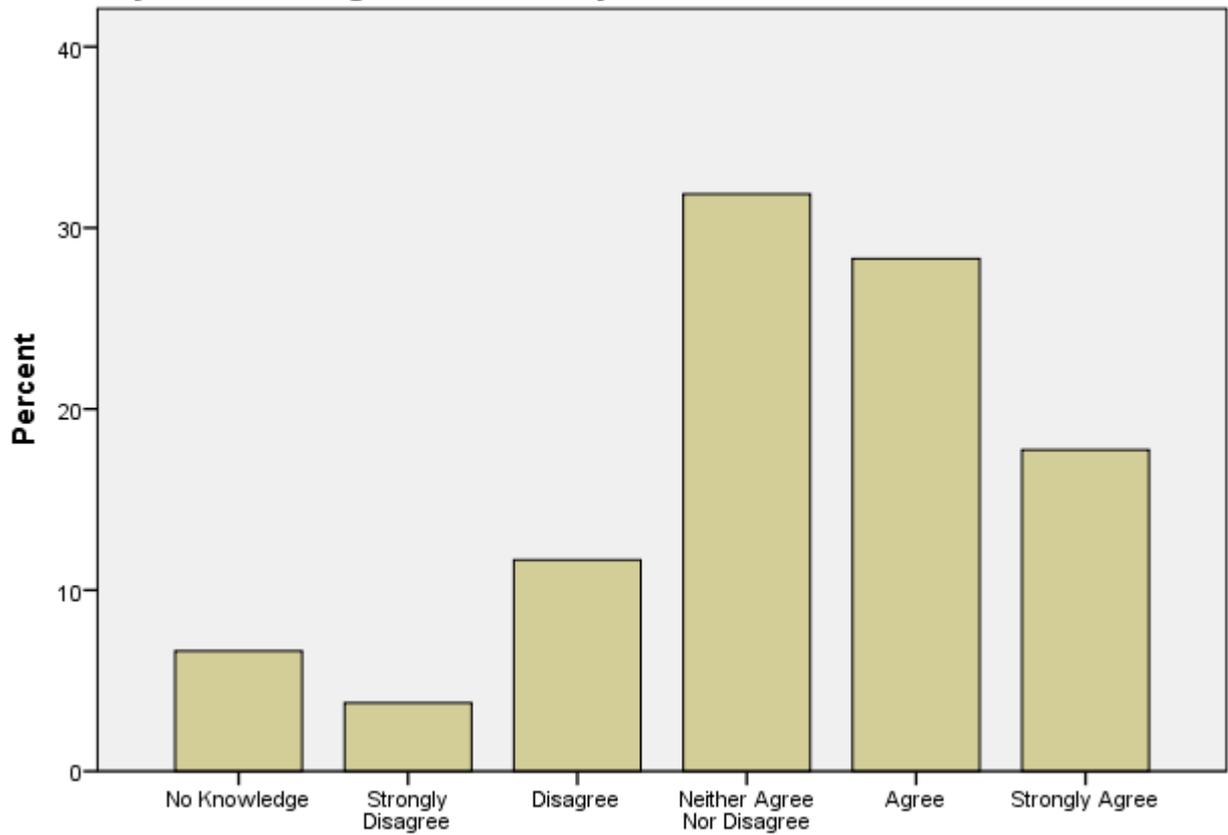
**University emphasises sustainability through support services(e.g. Recycling bins across campus, efficient public transport throughout university, etc.)**

**University engages in community outreach programs that benefit the local environment**



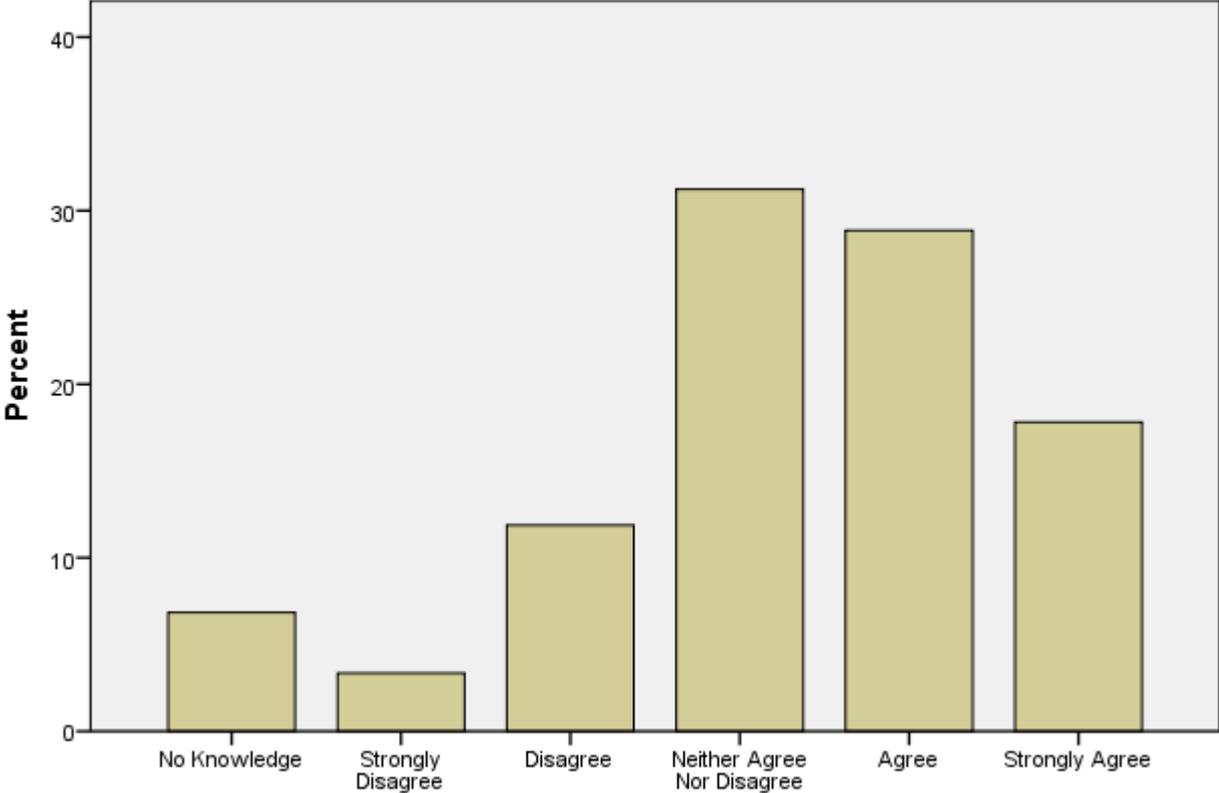
**University engages in community outreach programs that benefit the local environment**

**University has created green community centers to benefit the local environment**



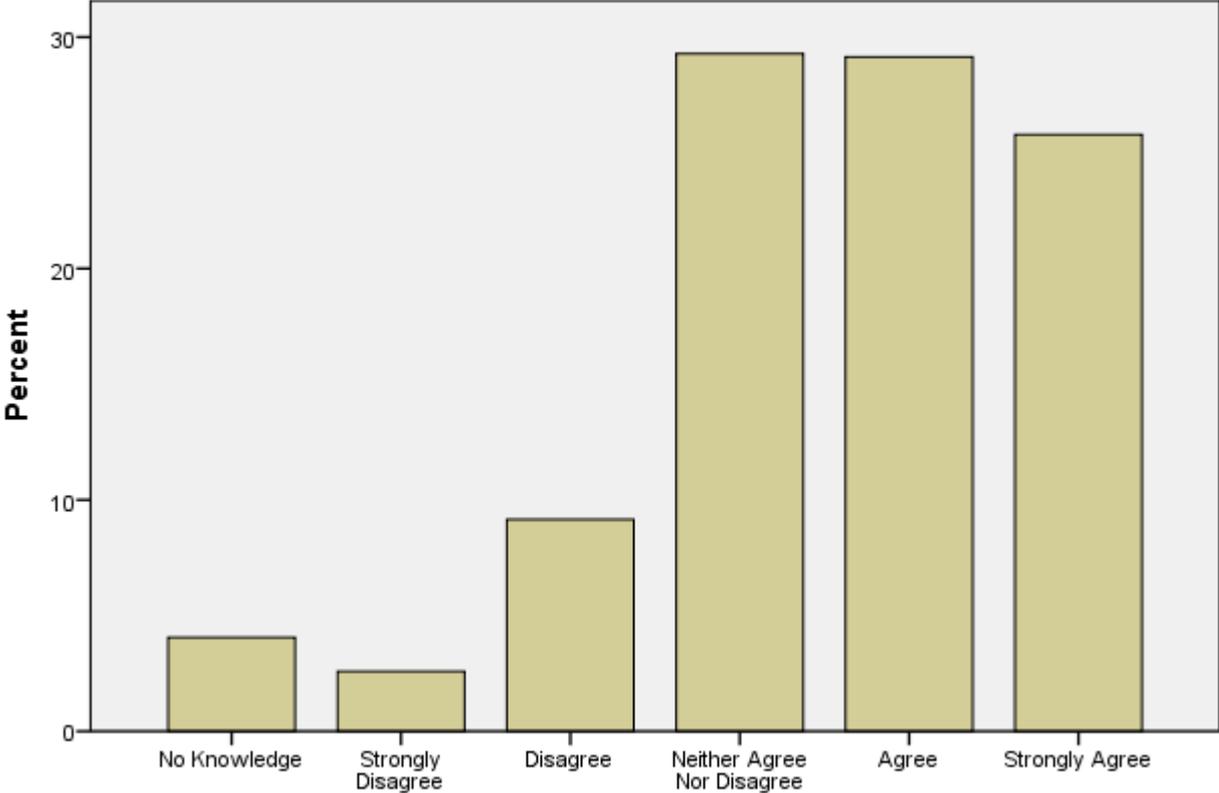
**University has created green community centers to benefit the local environment**

**University has created partnerships with government, non-governmental organisations, and industry working toward sustainability**



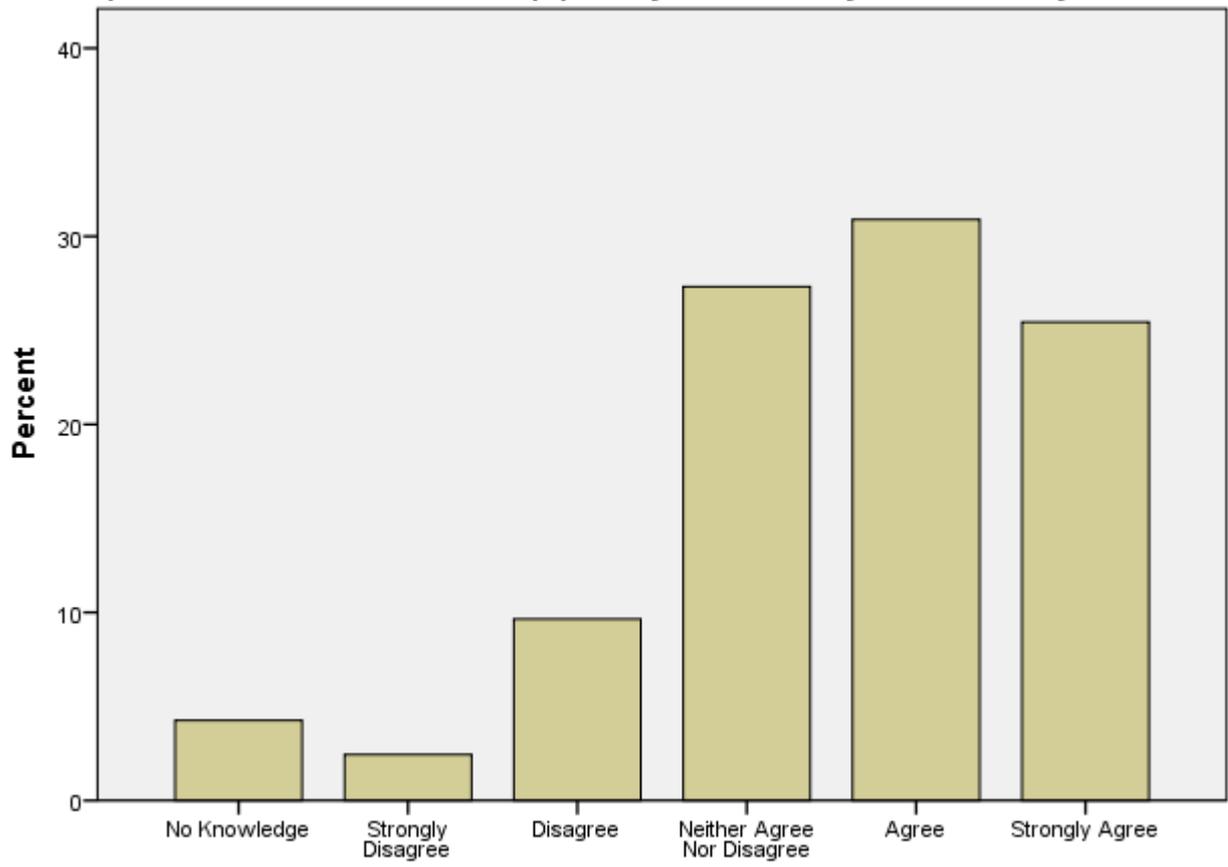
**University has created partnerships with government, non-governmental organisations, and industry working toward sustainability**

**Campus building planning should be a top priority in university sustainability issues**



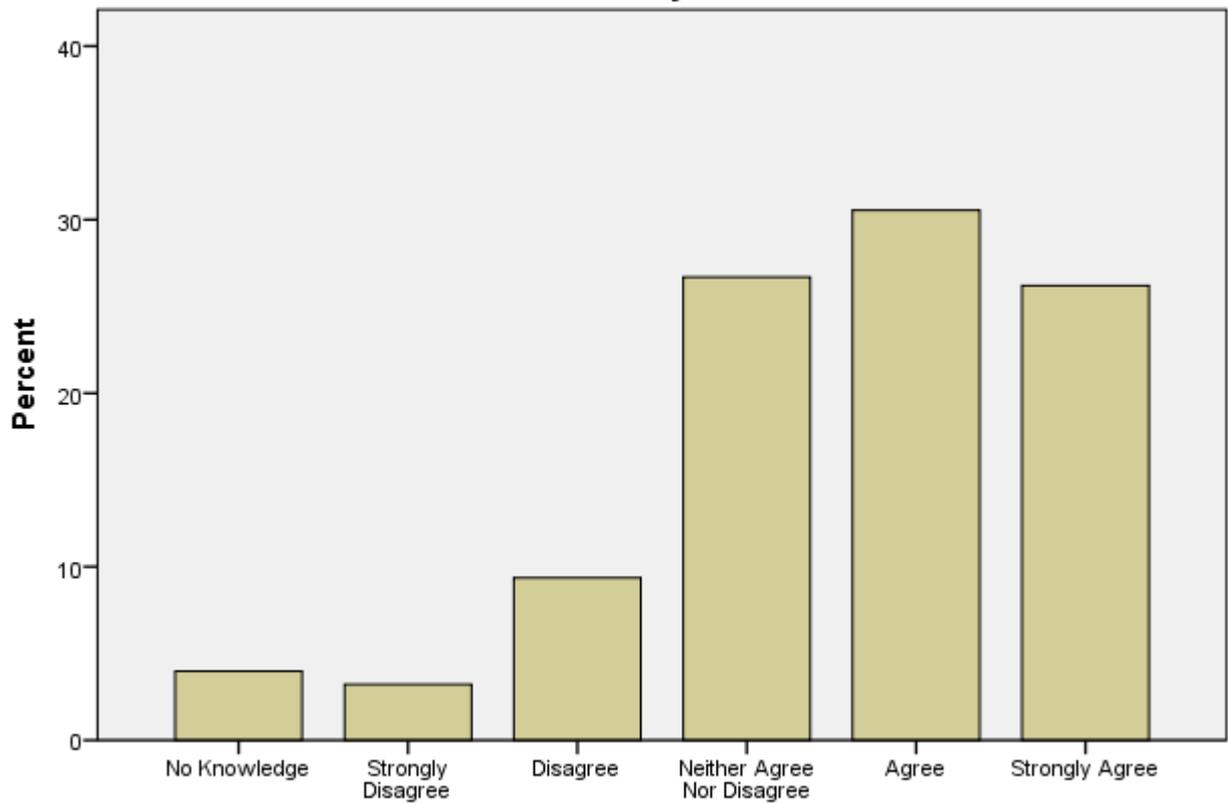
**Campus building planning should be a top priority in university sustainability issues**

**Campus land-use should be a top priority in university sustainability issues**



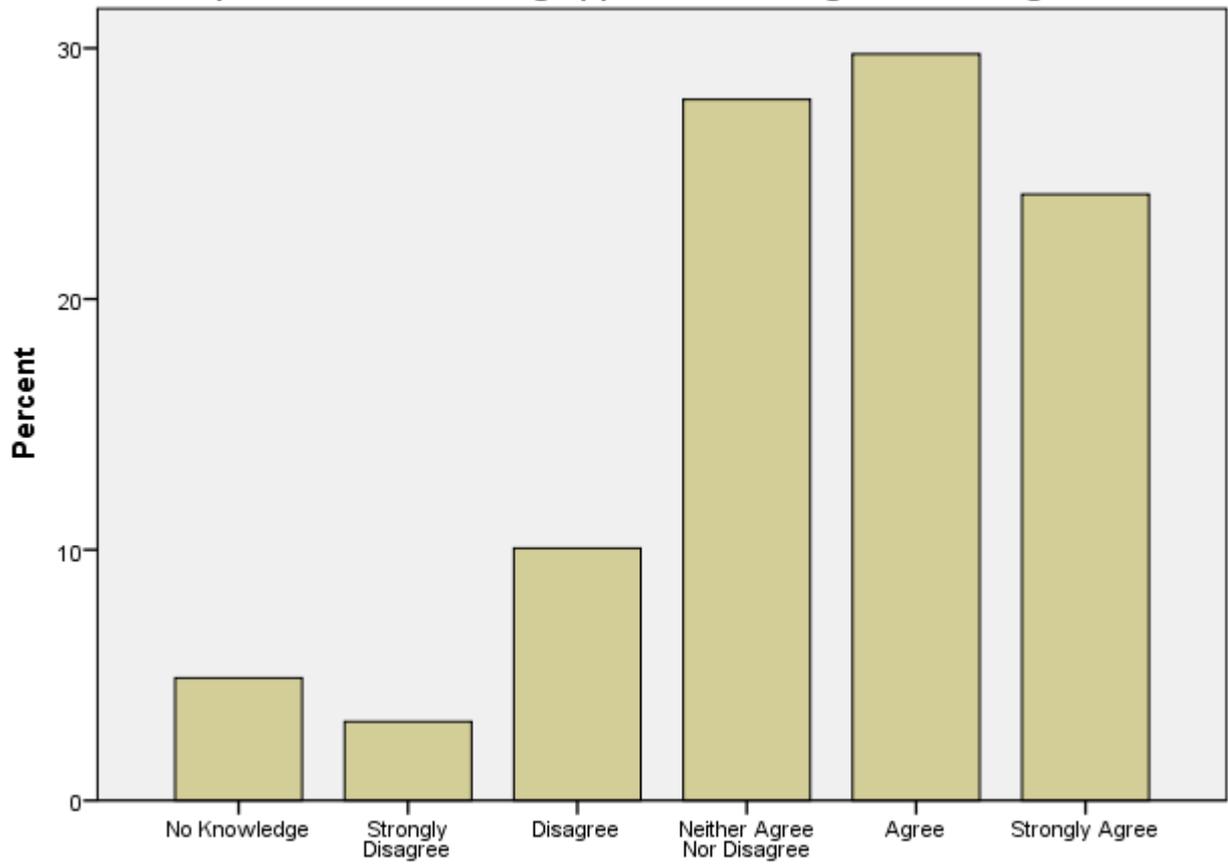
**Campus land-use should be a top priority in university sustainability issues**

**Supports students to examine the campus sustainability issues and report to the University**



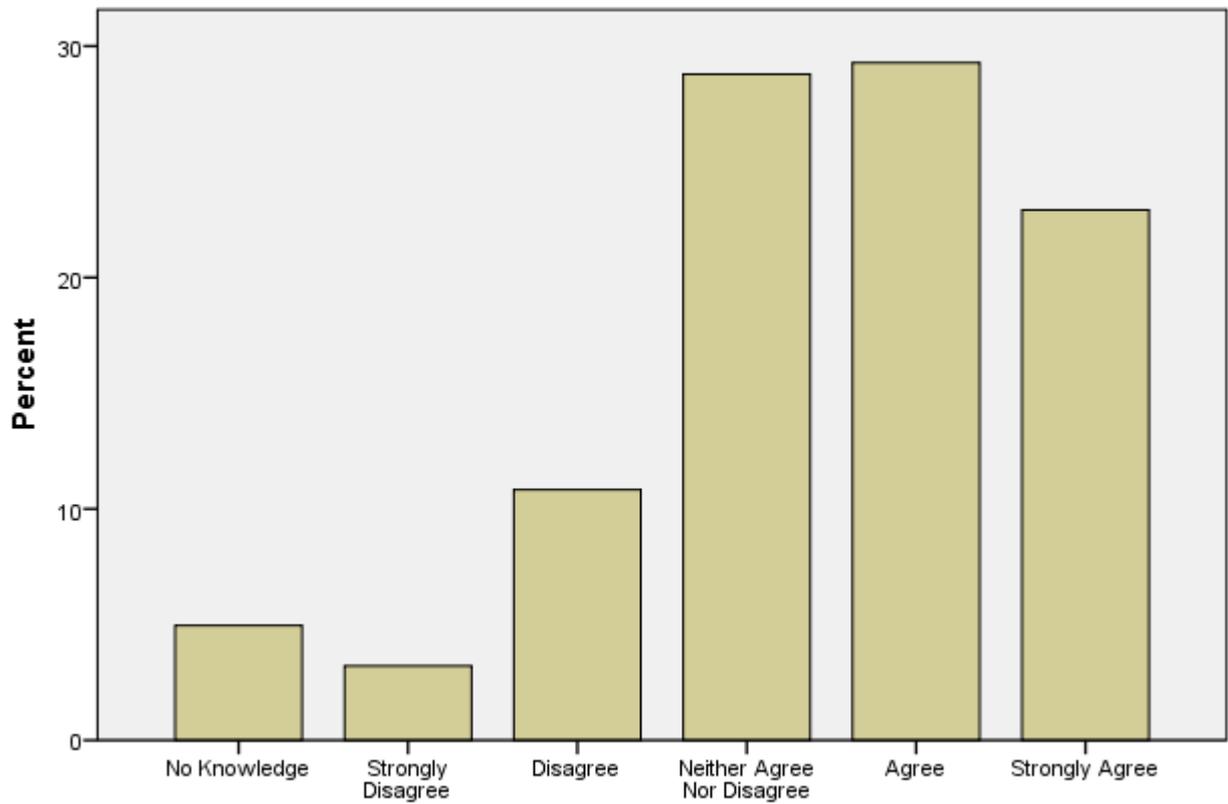
**Supports students to examine the campus sustainability issues and report to the University**

### Explore external funding opportunities for green building



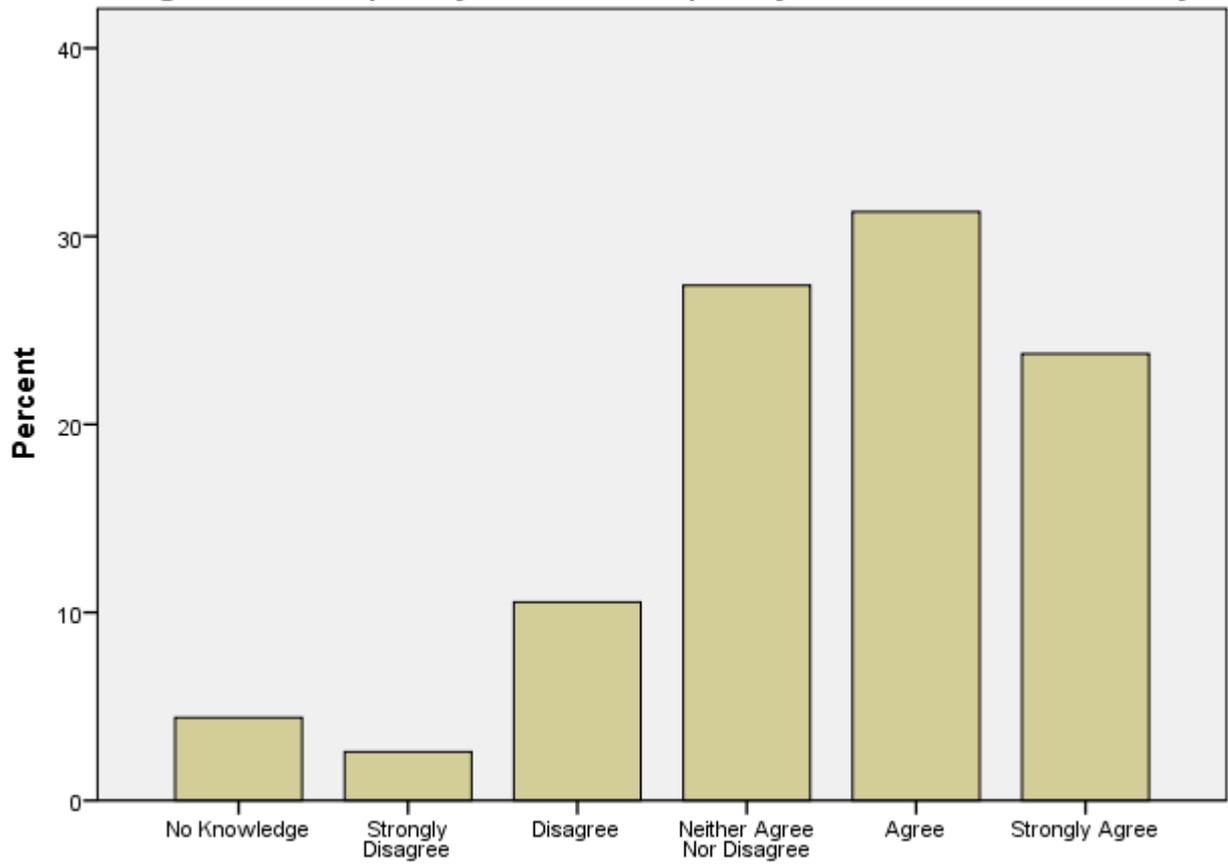
### Explore external funding opportunities for green building

**Engage in sustainable development network at regional, national or international levels**



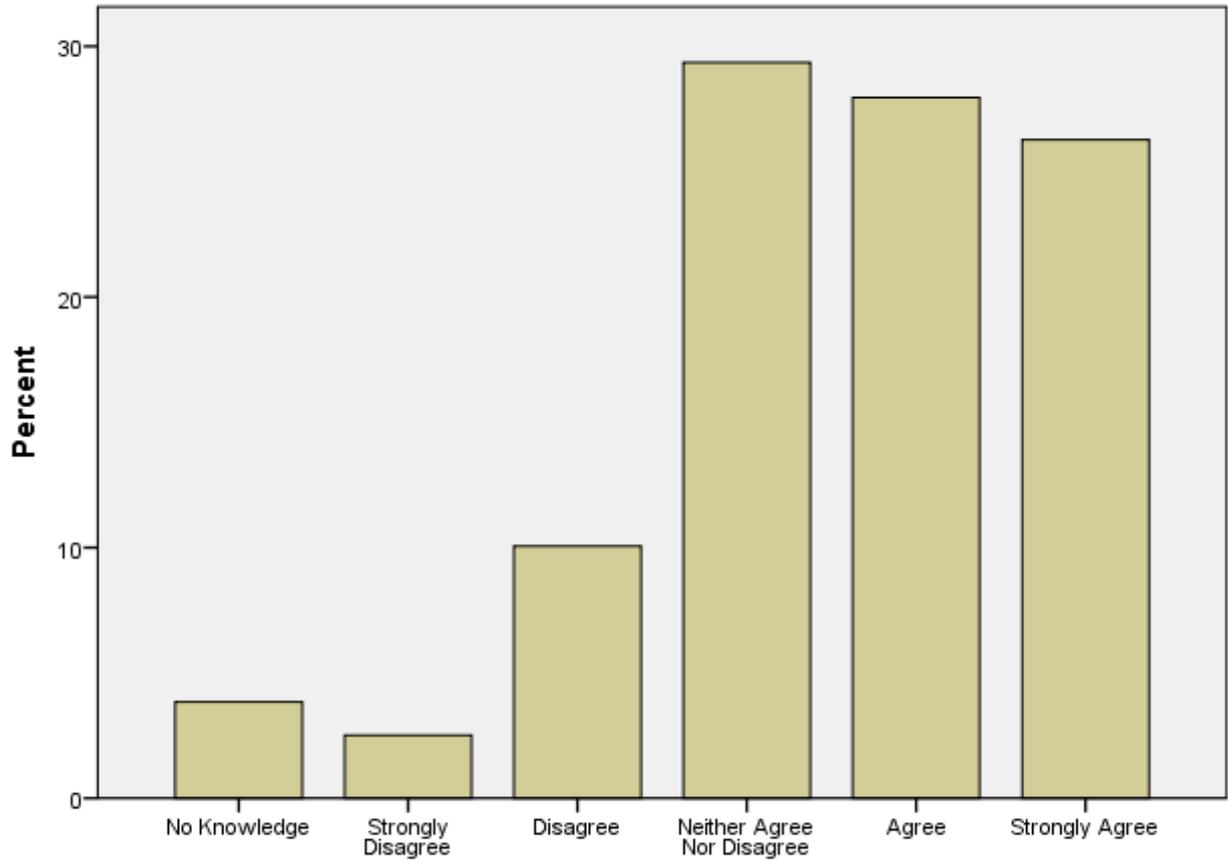
**Engage in sustainable development network at regional, national or international levels**

**Encourages multidisciplinary and interdisciplinary research on sustainability**



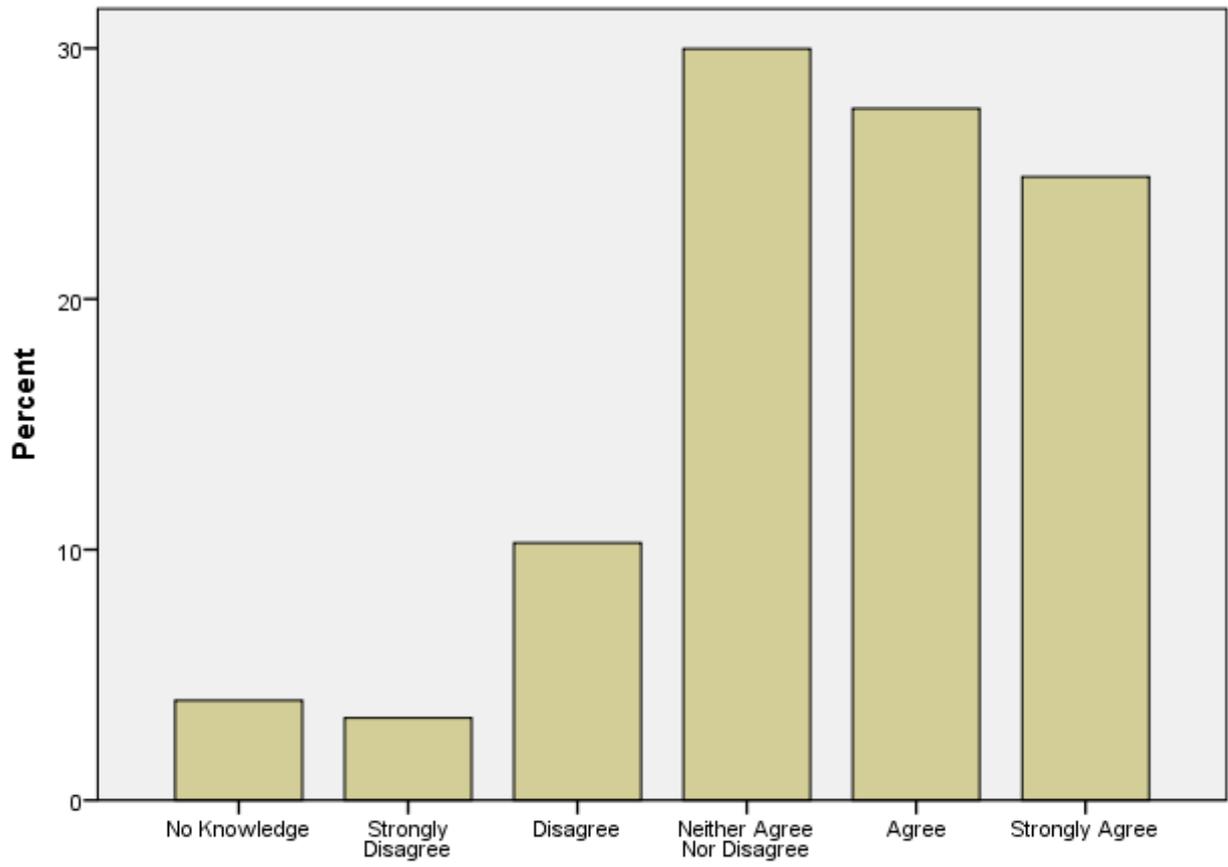
**Encourages multidisciplinary and interdisciplinary research on sustainability**

**Supports student initiatives such as environmental newsletter**



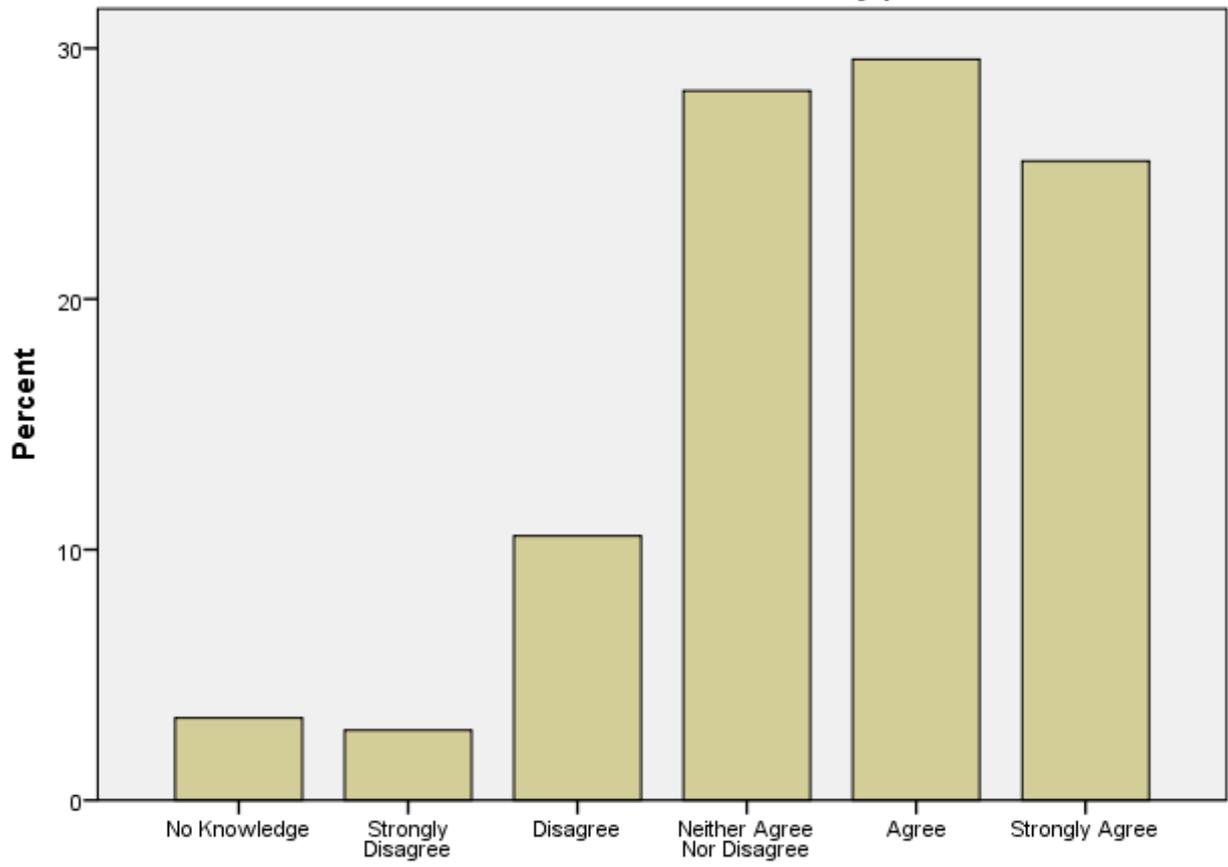
**Supports student initiatives such as environmental newsletter**

**Provides students with sustainable accommodation**



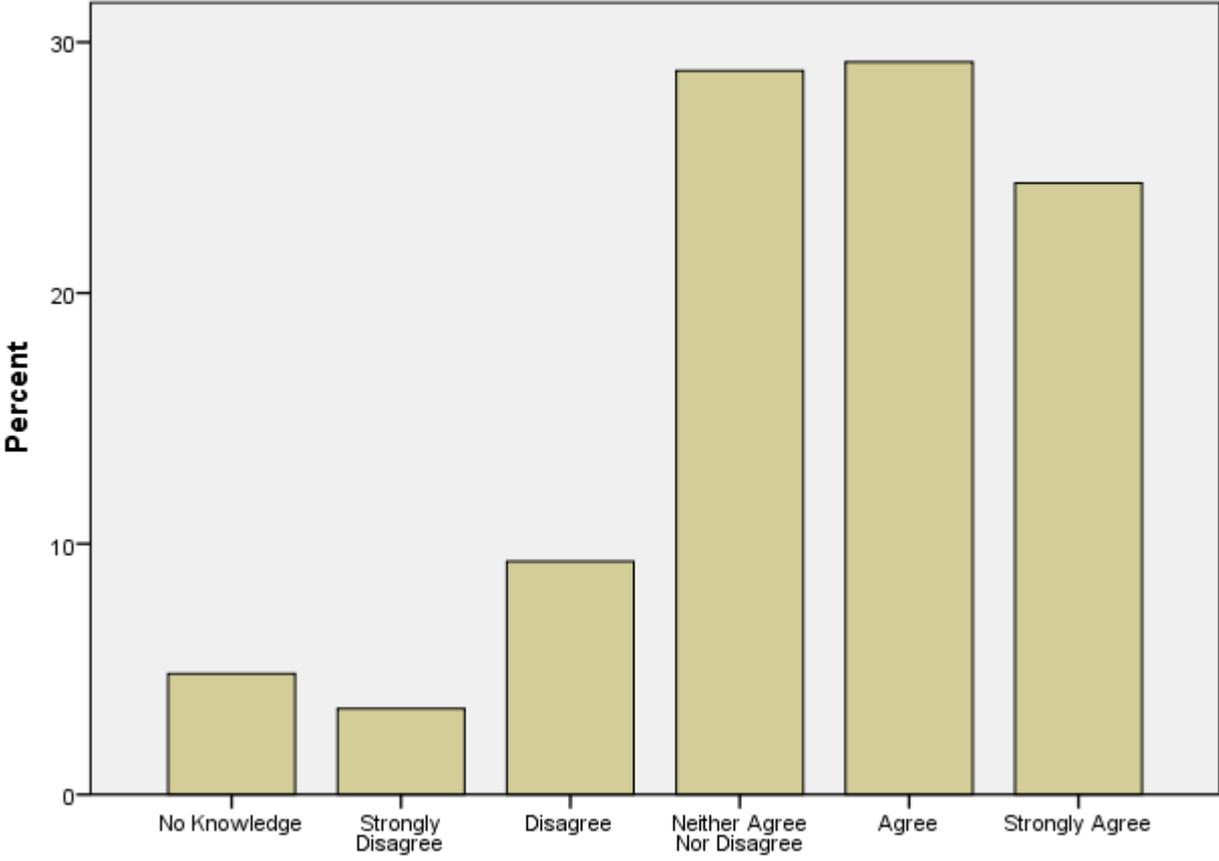
**Provides students with sustainable accommodation**

**Provides students with environmental sustainability practice facilities**



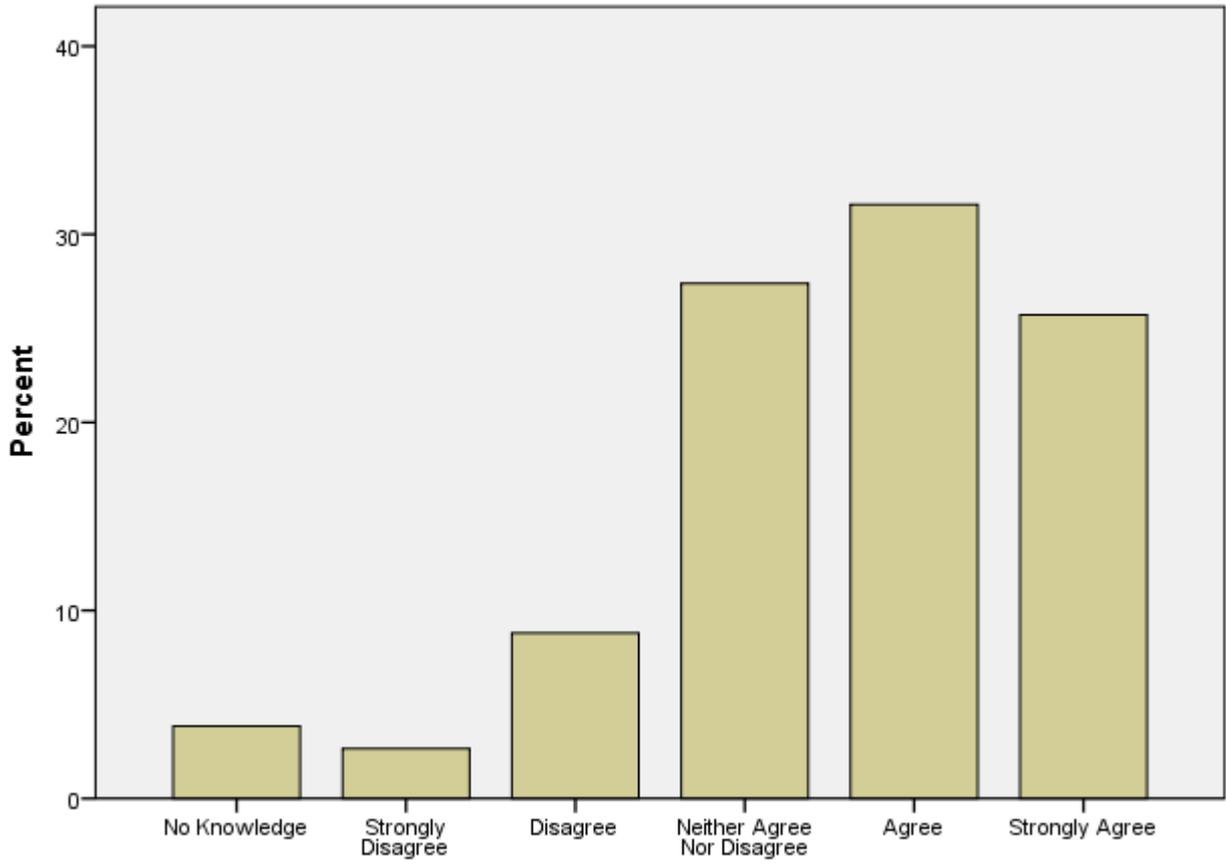
**Provides students with environmental sustainability practice facilities**

**Establishes student groups with sustainability focus**



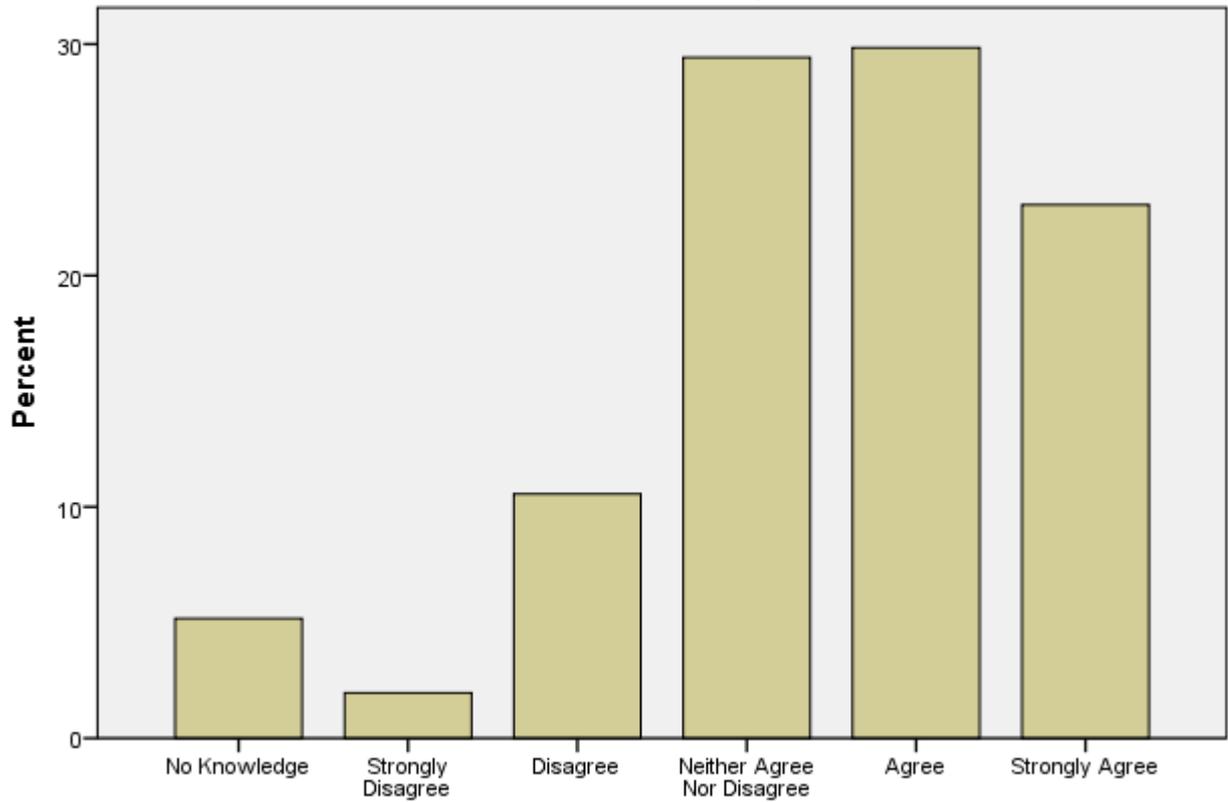
**Establishes student groups with sustainability focus**

**Encourages student groups to participate in sustainability initiatives**



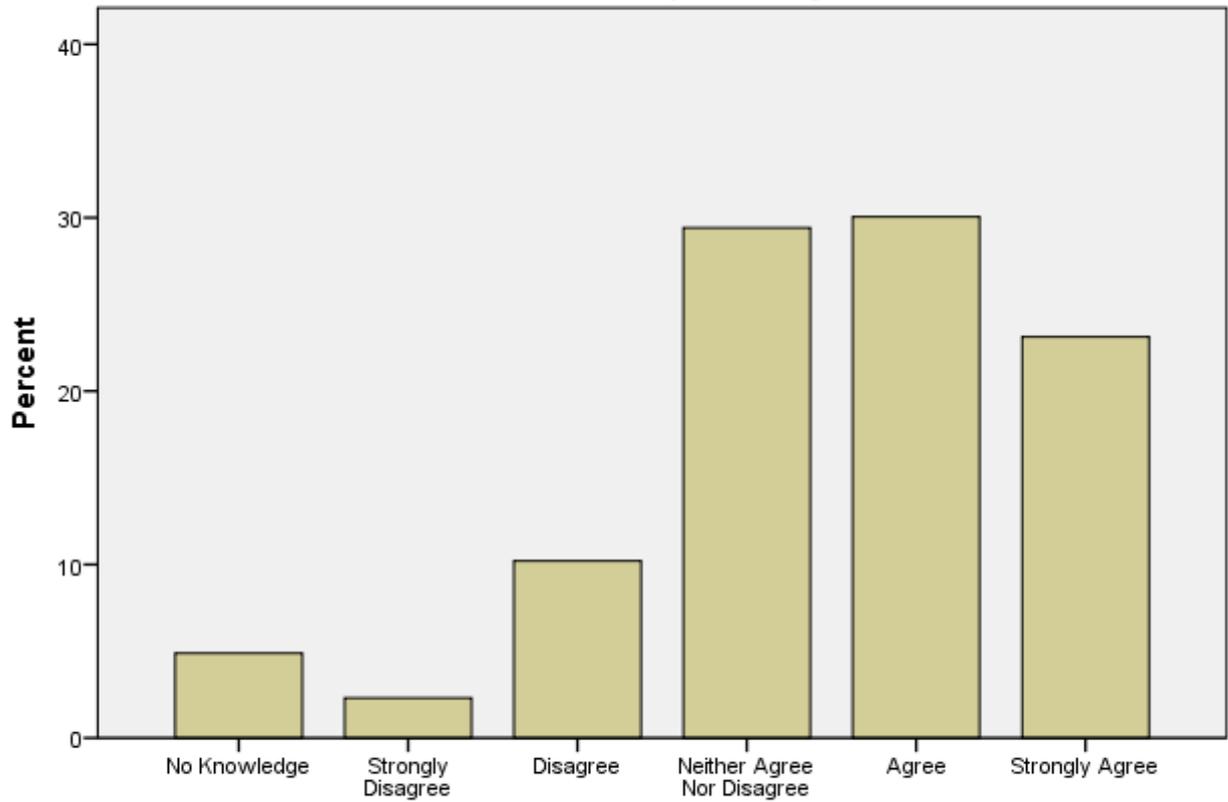
**Encourages student groups to participate in sustainability initiatives**

**Encourages students to consider job fairs and career counselling focused on work in sustainable enterprises**



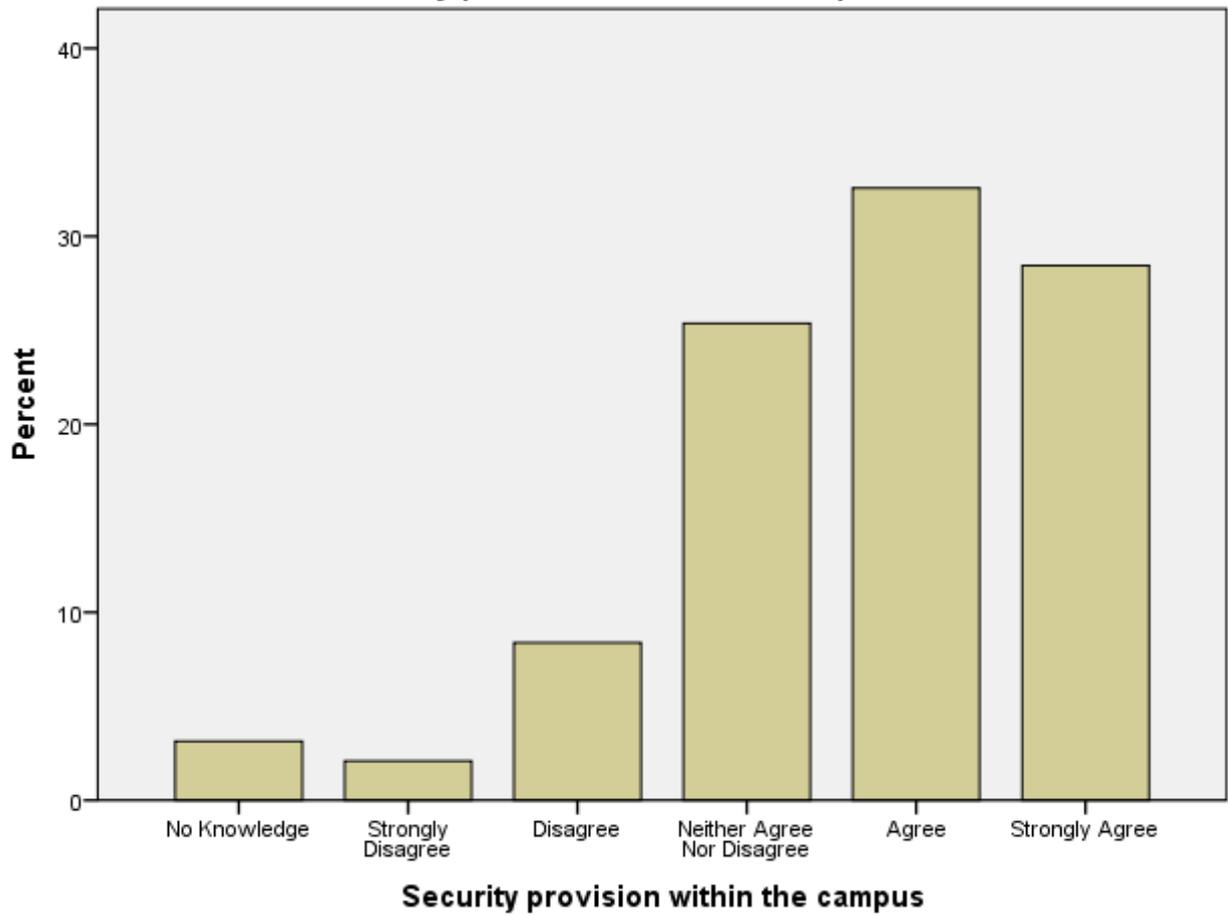
**Encourages students to consider job fairs and career counselling focused on work in sustainable enterprises**

**Encourages students to consider those enterprises with pledge of social and environmental responsibility**

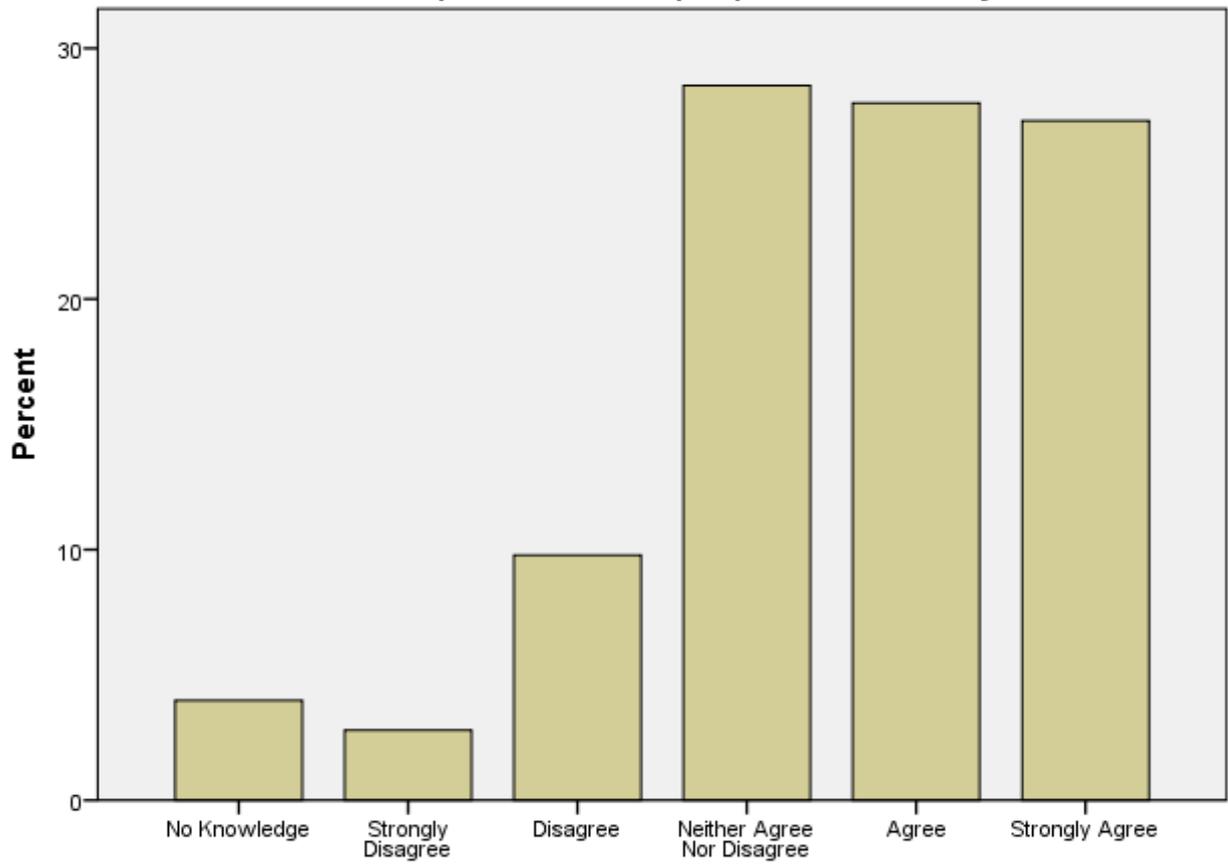


**Encourages students to consider those enterprises with pledge of social and environmental responsibility**

**Security provision within the campus**

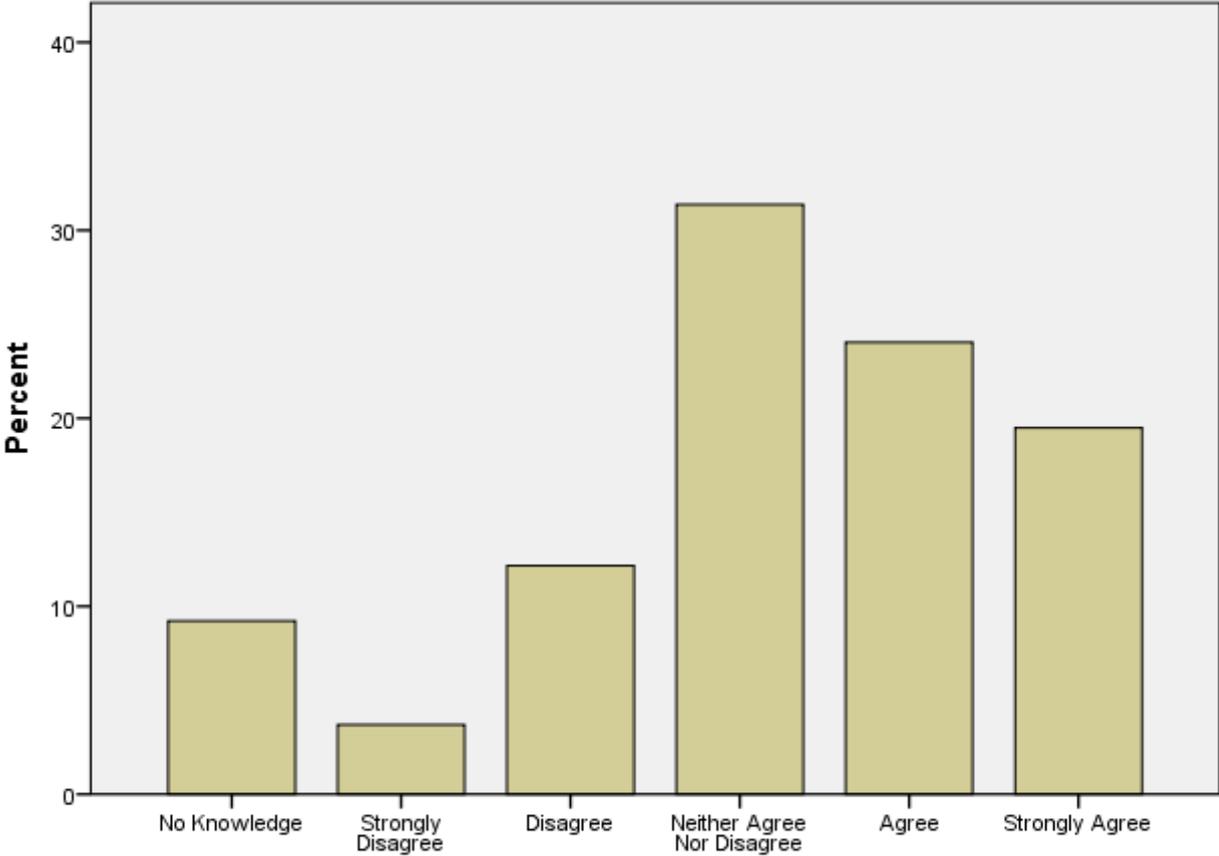


**Provides adequate access to people with disability**



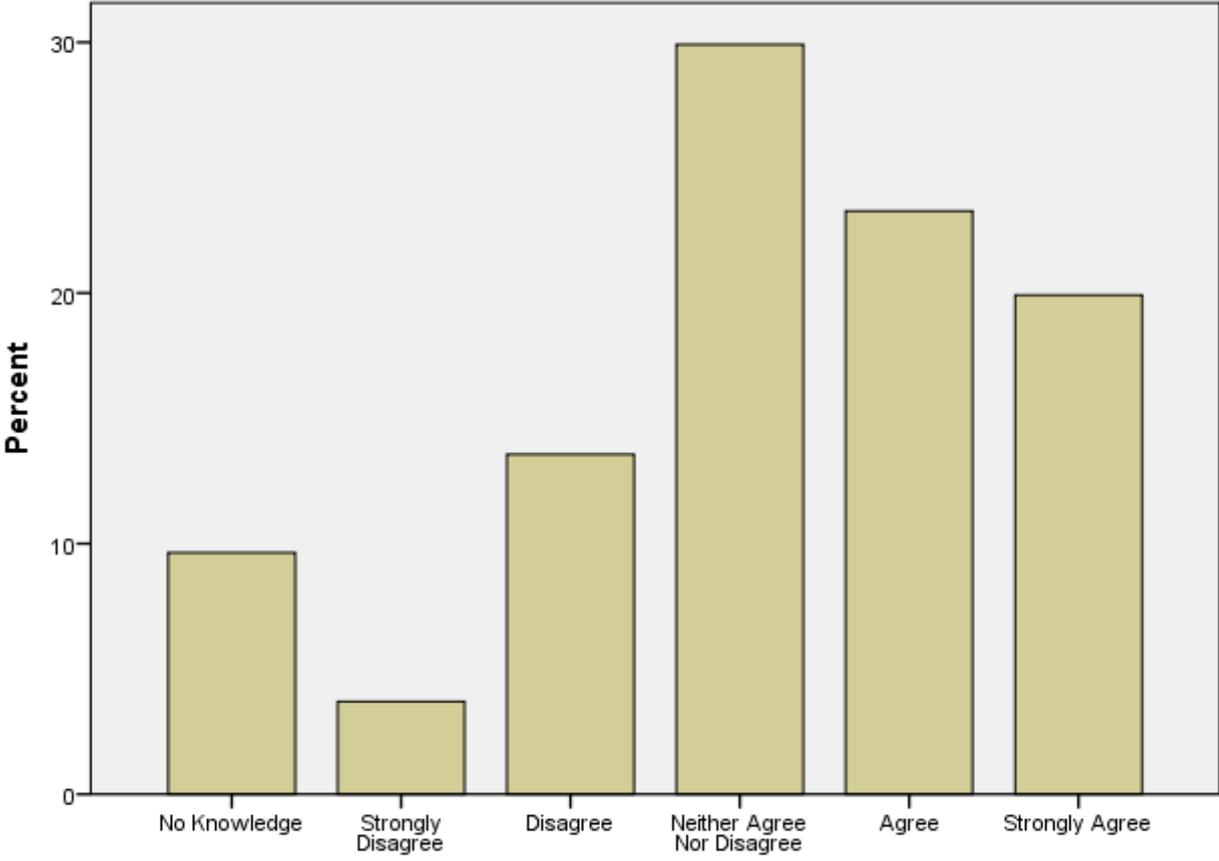
**Provides adequate access to people with disability**

**University publishes stand-alone sustainability report regularly**



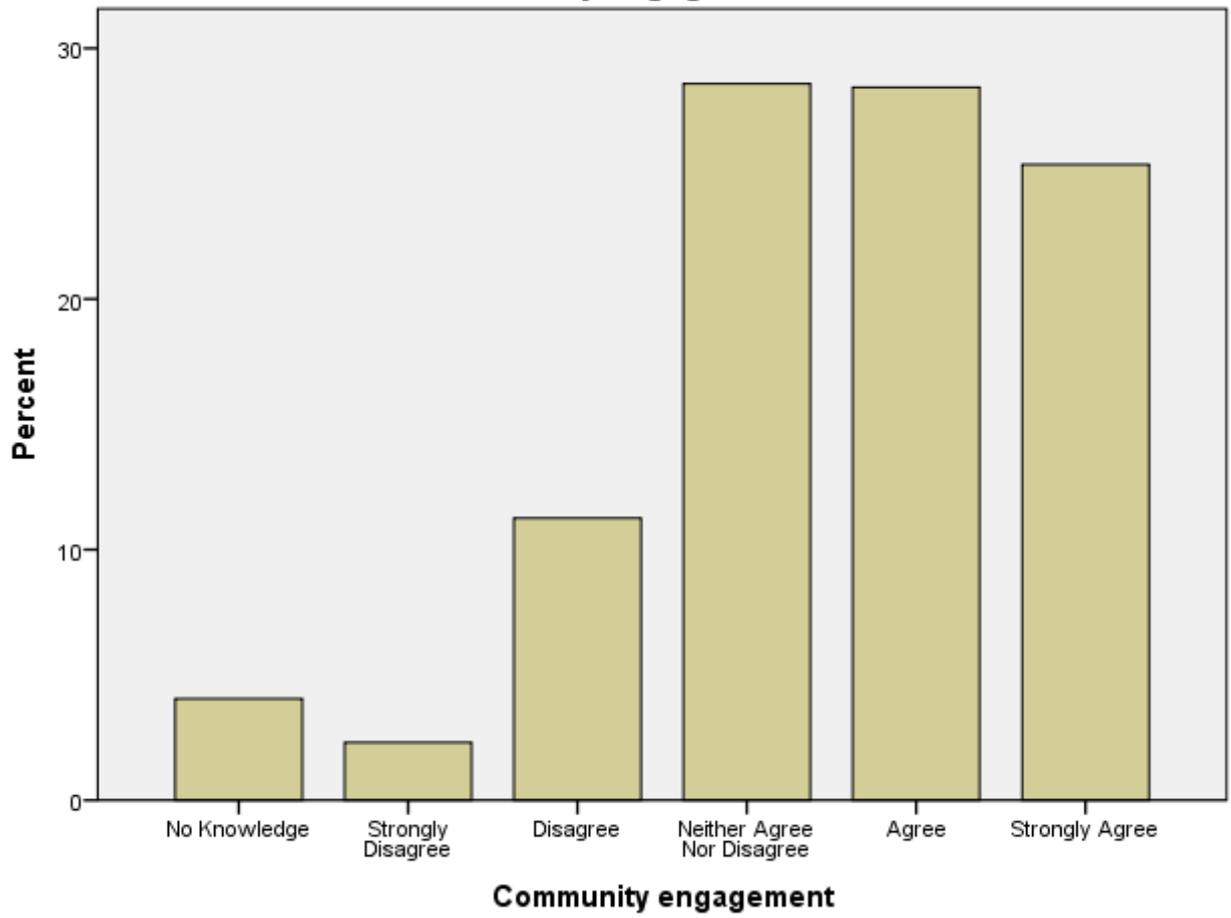
**University publishes stand-alone sustainability report regularly**

University has a dedicated website for campus sustainability

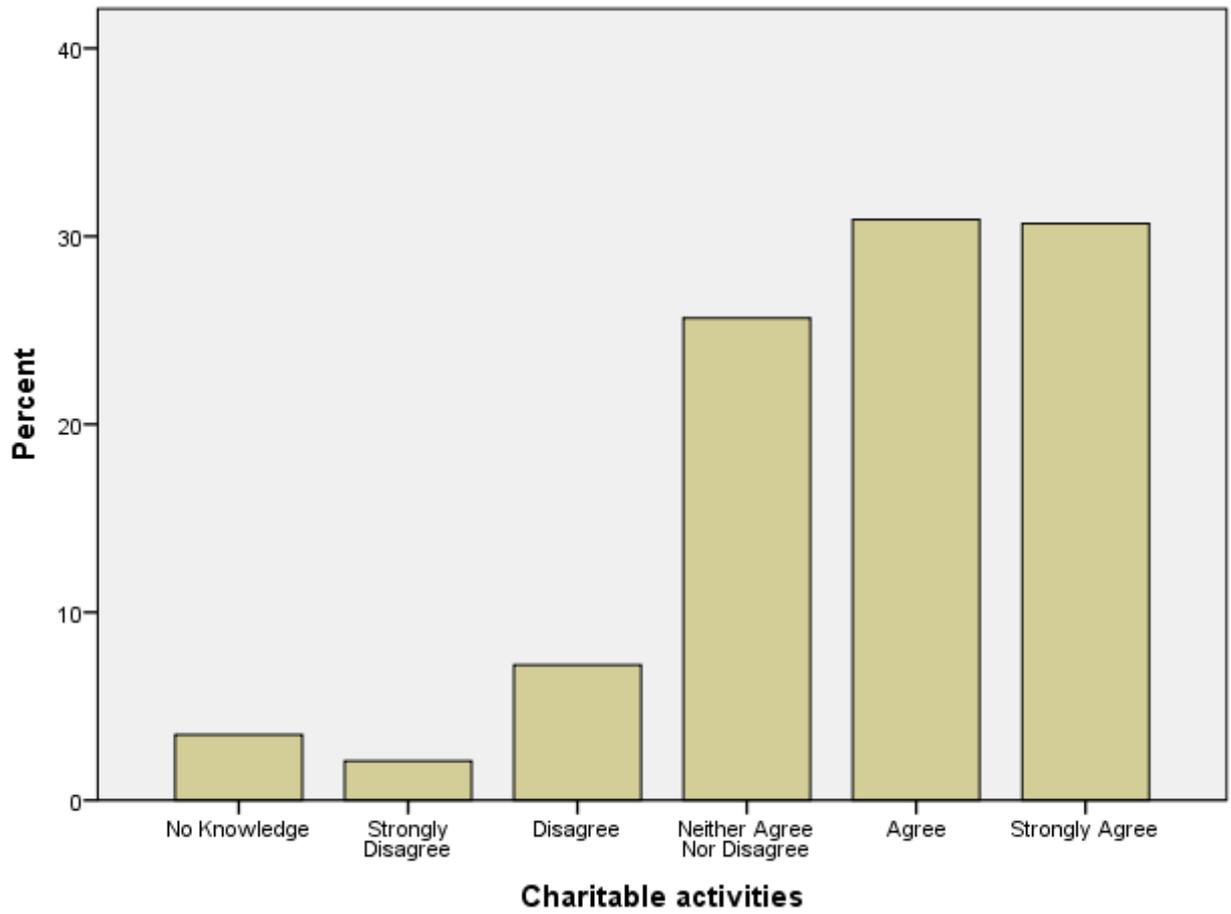


University has a dedicated website for campus sustainability

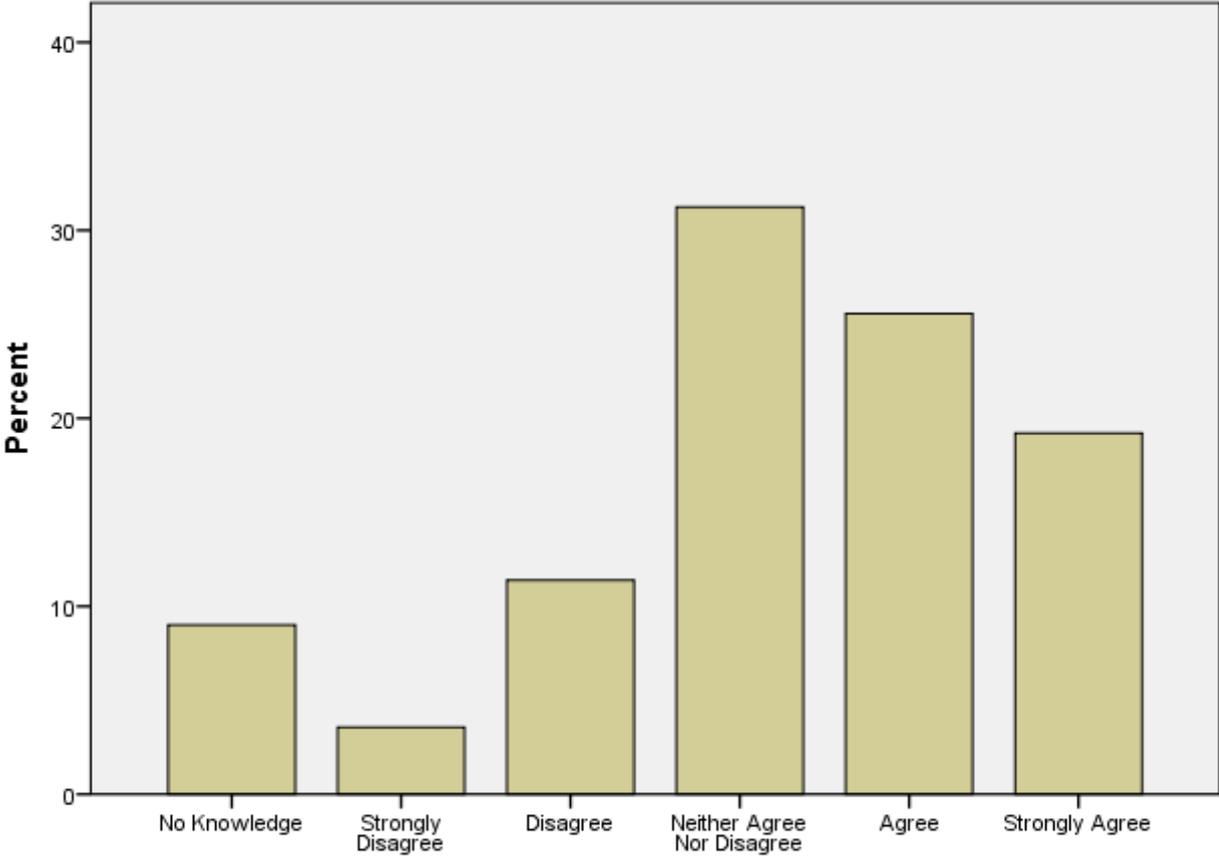
### Community engagement



### Charitable activities

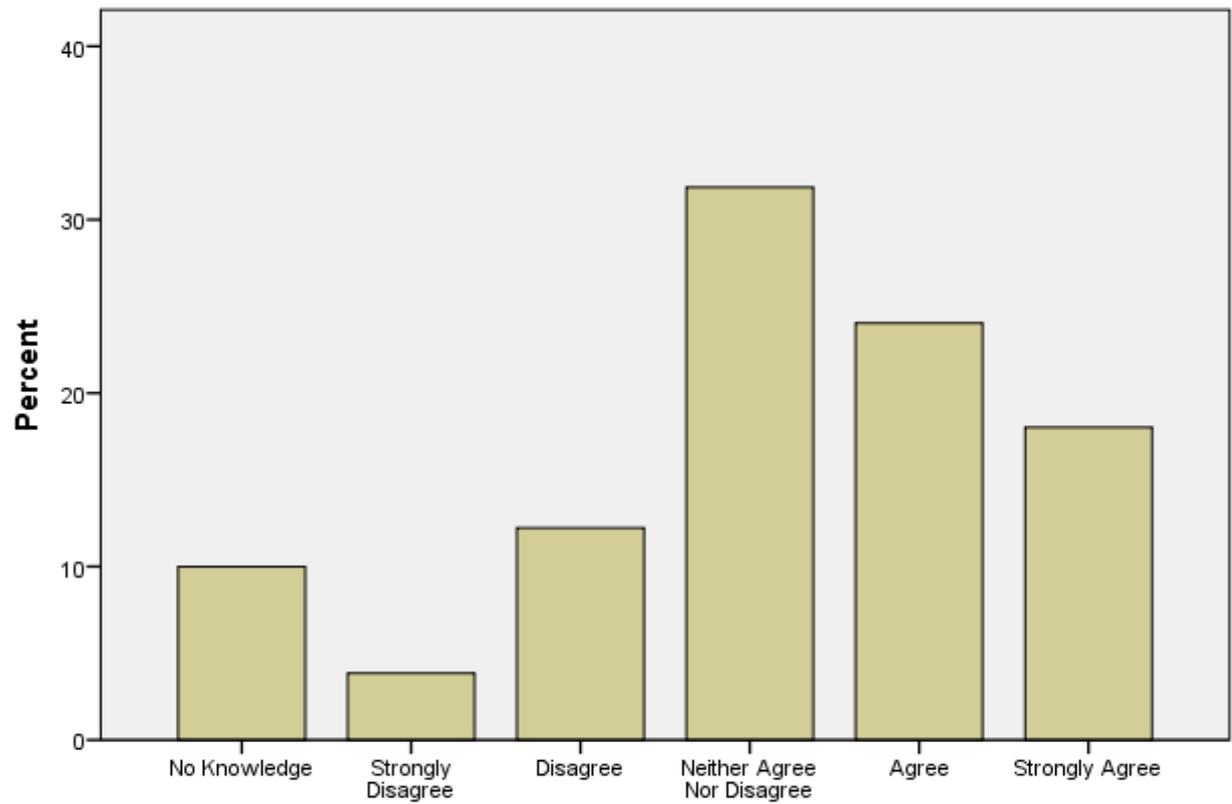


**Has a dedicated section in their annual report dedicated to sustainability**



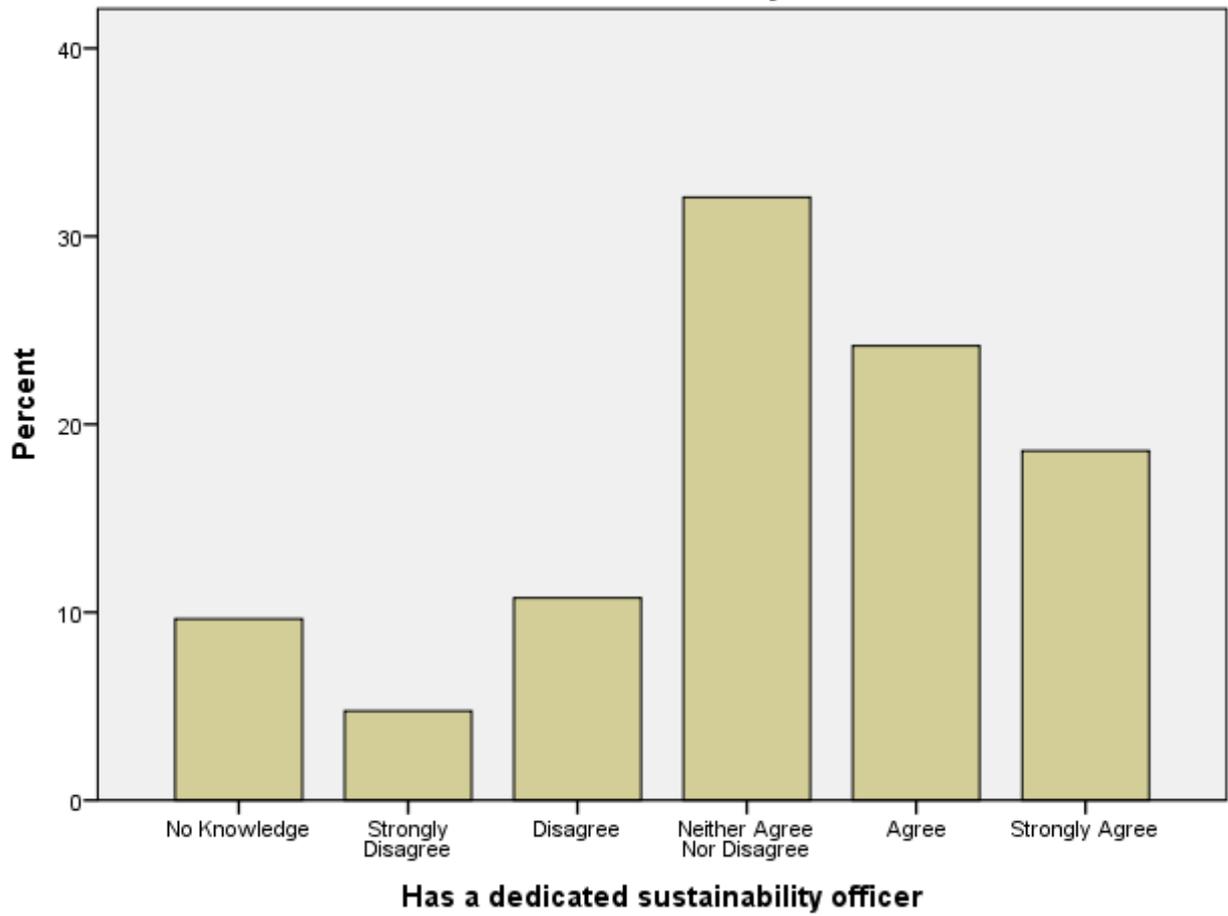
**Has a dedicated section in their annual report dedicated to sustainability**

**University is accredited by independent organisation such as Global Reporting Initiative**

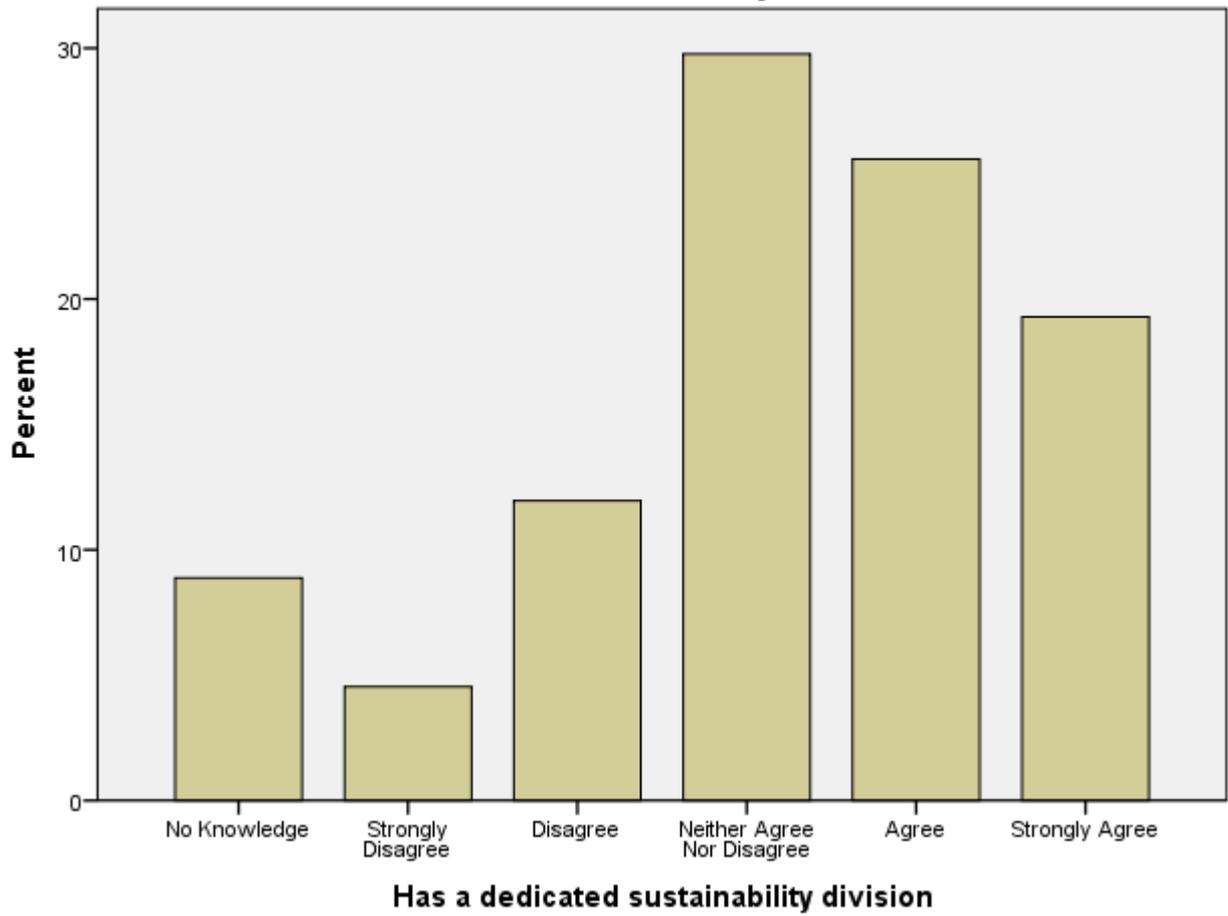


**University is accredited by independent organisation such as Global Reporting Initiative**

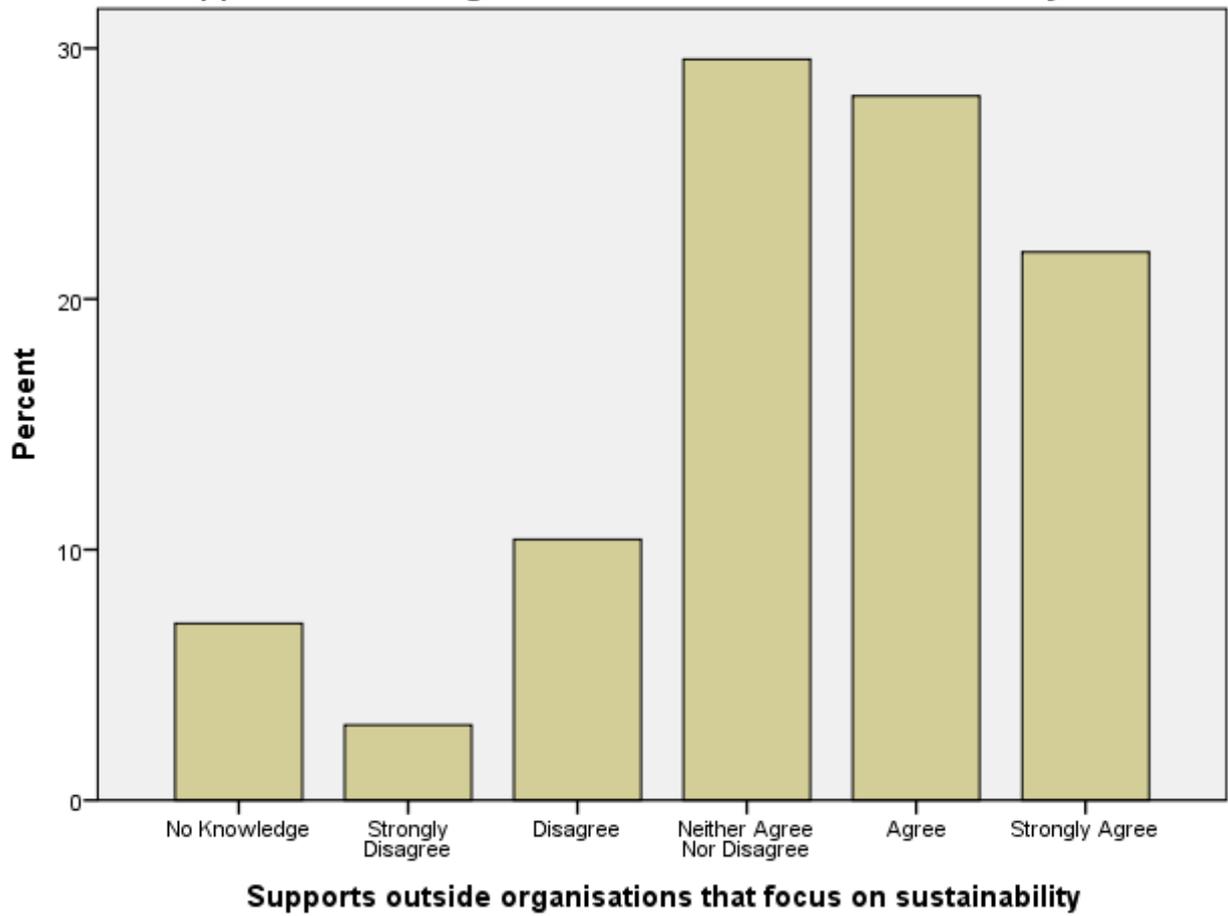
### Has a dedicated sustainability officer



### Has a dedicated sustainability division



**Supports outside organisations that focus on sustainability**



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Appendix 4.3

Staff Respondent Summary 20 October 2020

| University | Role | Number of Respondent |
|---|----------------------|-----------------------------|
| Multimedia University | Teaching Staff | 12 |
| | Management staff | 1 |
| | Administrative Staff | 6 |
| | Technical staff | 10 |
| | Librarians | 6 |
| | Consultant | 1 |
| | Students | 4 |
| Universiti Putra Malaysia (UPM) | Teaching Staff | 47 |
| | Management staff | 2 |
| | Administrative Staff | 14 |
| | Technical staff | 14 |
| | Lab Stuff | 2 |
| | Students | 4 |
| Universiti Teknologi Malaysia (UTM) | Teaching Staff | 21 |
| | Management staff | 11 |
| | Administrative Staff | 9 |
| | Technical staff | 26 |
| | Librarians | 1 |
| | Students | 2 |
| Melaka International College of Science and Technology (MICOST) | Teaching Staff | 12 |
| | Management staff | 5 |
| | Technical staff | 11 |
| Universiti Teknikal Malaysia Melaka (UTeM) | Teaching Staff | 11 |
| | Management staff | 4 |
| | Administrative Staff | 4 |
| | Technical staff | 21 |
| Universiti Tun Hussein Onn Malaysia (UTHM) | Teaching Staff | 26 |
| | Management staff | 5 |
| | Administrative Staff | 11 |
| | Technical staff | 14 |

| | | |
|--|----------------------|----|
| Universiti Sains Malaysia (USM) | Teaching Staff | 1 |
| | Administrative Staff | 1 |
| | Student | 1 |
| International College of Yayasan Melaka (ICYM) | Teaching Staff | 11 |
| | Management staff | 1 |
| | Administrative Staff | 1 |
| Kota Melaka Polytechnic (PKM), Malacca | Teaching Staff | 1 |
| Universiti Utara Malaysia (UUM) | Teaching Staff | 29 |
| | Management staff | 5 |
| | Administrative Staff | 11 |
| | Technical staff | 1 |
| Texas Instruments | Technical staff | 1 |
| Universiti Teknologi MARA (UiTM) | Teaching Staff | 79 |
| | Management staff | 16 |
| | Administrative Staff | 9 |
| | Technical staff | 5 |
| | Librarians | 3 |
| | Students | 1 |
| Kolej Vokasional Wakaf Tembesu | Administrative Staff | 1 |
| CERTIFICATE ELECTRONIC COMMUNICATION-POLISAS | Teaching Staff | 1 |
| | Technical staff | 1 |
| Universiti Pertahanan Nasional Malaysia (UPNM) | Teaching Staff | 7 |
| | Management staff | 2 |
| | Administrative Staff | 3 |
| | Technical staff | 1 |
| | Librarians | 1 |

| | | |
|---------------------------------|----------------------|---|
| Universiti Kuala Lumpur (UniKL) | Teaching Staff | 2 |
| | Management staff | 1 |
| | Administrative Staff | 1 |

| | | |
|-------------------------------------|----------------|---|
| Certificate Polytechnic Kota Melaka | Teaching Staff | 1 |
|-------------------------------------|----------------|---|

| | | |
|---------------------------|----------------------|----|
| University of Malaya (UM) | Teaching Staff | 14 |
| | Management staff | 5 |
| | Administrative Staff | 4 |
| | Librarians | 1 |
| | Students | 3 |

| | | |
|------------------------------------|----------------------|----|
| Kolej Teknikal Yayasan Sabah(KTYS) | Teaching Staff | 18 |
| | Management staff | 1 |
| | Administrative Staff | 3 |
| | Technical staff | 3 |

| | | |
|--|----------------------|----|
| University of Malaysia, Sarawak (UNIMAS) | Teaching Staff | 40 |
| | Management staff | 9 |
| | Administrative Staff | 16 |
| | Technical staff | 15 |
| | Librarians | 2 |
| | Students | 4 |

| | | |
|----------------------------------|----------------------|---|
| Universiti Malaysia Pahang (UMP) | Teaching Staff | 6 |
| | Management staff | 3 |
| | Administrative Staff | 1 |
| | Technical staff | 1 |

| | | |
|--|----------------|---|
| Universiti Sains Islam Malaysia (USIM) | Teaching Staff | 1 |
|--|----------------|---|

| | | |
|--|----------------------|----|
| Universiti Sultan Zainal Abidin (UniSZA) | Teaching Staff | 20 |
| | Management staff | 6 |
| | Administrative Staff | 1 |

| | | |
|---------------------------------|----------------------|----|
| University Malaysia Sabah (UMS) | Teaching Staff | 10 |
| | Management staff | 8 |
| | Administrative Staff | 7 |
| | Technical staff | 18 |
| | Students | 8 |

| | | |
|--|----------------------|----|
| International Islamic University Malaysia (IIUM) | Teaching Staff | 16 |
| | Management staff | 4 |
| | Administrative Staff | 6 |
| | Hospital | 1 |
| | Students | 2 |

| | | |
|-------------------------|------------------|---|
| Wawasan Open University | Management staff | 1 |
|-------------------------|------------------|---|

| | | |
|--|----------------|---|
| UNITAR International University (UNITAR) | Teaching Staff | 1 |
|--|----------------|---|

| | | |
|--------------------------------------|----------------------|---|
| University Malaysia Terengganu (UMT) | Teaching Staff | 6 |
| | Management staff | 7 |
| | Administrative Staff | 1 |
| | Technical staff | 3 |

| | | |
|-------------------------------------|------------------|----|
| Universiti Malaysia Perlis (UNIMAP) | Teaching Staff | 10 |
| | Management staff | 2 |

| | | |
|---|----------------------|---|
| Universiti Teknologi MARA Cawangan Sabah (UiTM Sabah) | Teaching Staff | 9 |
| | Management staff | 2 |
| | Administrative Staff | 4 |
| | Technical staff | 7 |
| | Librarians | 3 |

| | | |
|------------------------------------|----------------|---|
| Universiti Malaysia Kelantan (UMK) | Teaching Staff | 3 |
|------------------------------------|----------------|---|

| | | |
|--|----------------------|---|
| MARA University of Technology Kelantan (Kampus UiTM Machang) | Management staff | 1 |
| | Administrative Staff | 3 |

| | | |
|--|------------------|---|
| Universiti Teknologi MARA Cawangan Melaka Kampus Jasin (Kamp | Management staff | 1 |
|--|------------------|---|

| | | |
|--|------------------|---|
| University College Sabah Foundation, Sanzac, Sabah. (UCSF) | Teaching Staff | 1 |
| | Management staff | 1 |

| | | |
|---|------------------|----|
| Universiti Teknologi MARA Shah Alam (UiTM Sha Alam) | Teaching Staff | 11 |
| | Management staff | 2 |

| | | |
|--|----------------------|---|
| Tunku Abdul Rahman University College, Sabah Branch (TAR UC) | Teaching Staff | 7 |
| | Administrative Staff | 6 |
| | Technical staff | 2 |

| | | |
|-------------------------------------|------------------|----|
| Universiti Tenaga Nasional (UNITEN) | Teaching Staff | 10 |
| | Management staff | 2 |
| | Technical staff | 8 |

| | | |
|--|----------------------|---|
| Universiti Putra Malaysia Bintulu Campus (Universiti Putra Malaysia) | Teaching Staff | 3 |
| | Management staff | 2 |
| | Administrative Staff | 2 |
| | Technical staff | 3 |

| | | |
|--|----------------------|----|
| UiTM Cawangan Johor, Kampus Pasir Gudang | Teaching Staff | 16 |
| | Administrative Staff | 4 |
| | Technical staff | 3 |

| | | |
|--|----------------|---|
| Universiti Islam Antarabangsa Sultan Abdul Halim Mu'adzam Shah (| Teaching Staff | 2 |
|--|----------------|---|

| | | |
|----------------------------|----------------------|---|
| Curtin University Malaysia | Administrative Staff | 2 |
|----------------------------|----------------------|---|

Appendix 4.4

Analysis Report\_Staff

Table of Contents

| | |
|--|----|
| Report: Survey from University Staff | 3 |
| Table: Allocation of Questions | 3 |
| 1.0 Governance (15, 16, 17, 20) | 3 |
| Table 1.1: Do your university have any specific unit on sustainability? | 3 |
| Table 1.2 Please describe the greatest strengths of your institution in terms of sustainability. | 4 |
| Table 1.3: Please describe the greatest weaknesses of your institution in terms of sustainability. . | 9 |
| Table 1.4: Do you think your university should strengthen/improve its action on sustainability?.. | 15 |
| 2.0 Awareness (8, 9, 13)..... | 16 |
| Table 2.1: Your awareness of sustainability effort in the campus..... | 17 |
| Table 2.2: Your awareness of specific office for sustainability in the campus | 17 |
| Table 2.3: Provides students with sustainable accommodation | 17 |
| Table 2.4: Provides students with environmental sustainability practice facilities..... | 18 |
| Table 2.5: Establish student groups with a focus on sustainability | 18 |
| Table 2.6: Encourage student groups to participate in sustainability initiatives..... | 18 |
| Table 2.7: Encourage students to consider job fairs and career counselling focused on work in
sustainable enterprises..... | 19 |
| Table 2.8: Encourage students to support enterprises that pledge to be socially and
environmentally responsible | 19 |
| 3.0 Motivation (14, 18) | 20 |
| Table 3.1: Security within the campus..... | 21 |
| Table 3.2: Provide adequate access to people with disability | 21 |
| Table 3.3: University publishes stand-alone sustainability report regularly | 21 |
| Table 3.4: University has a dedicated website for campus sustainability | 22 |
| Table 3.5: Community engagement..... | 22 |
| Table 3.6: Charitable activities..... | 23 |
| Table 3.7: Has a dedicated section in their annual report dedicated to sustainability | 23 |
| Table 3.8: University is accredited by independent organisation such as Global Reporting Initiative
..... | 23 |
| Table 3.9: Has a dedicated sustainability officer | 24 |
| Table 3.10: Has a dedicated sustainability division | 24 |
| Table 3.11: Supports outside organisations that focus on sustainability | 24 |
| Table 3.12: Please describe the key factors that support the advancement of environmental and
sustainability issues on your campus..... | 25 |
| 4.0 Design (12, 19) | 32 |
| Table 4.1: Significant level of research directly on sustainability is conducted | 33 |

| | |
|--|-----|
| Table 4.2: Significant research funding is allocated to sustainability | 33 |
| Table 4.3: Student research opportunities in sustainability are offered | 33 |
| Table 4.4: An institute(s) focusing on researching/teaching sustainability exists | 34 |
| Table 4.5: A collaboration with industries to create a better sustainability direction | 34 |
| Table 4.6: Living laboratory should be encouraging in overcoming a growing and emerging sustainability challenges | 34 |
| 5.0 Budget (11 Subsection 5) | 41 |
| Table 5.1: Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide..... | 41 |
| Table 5.2: Funding is the main problem to implement sustainable development initiatives in my campus..... | 41 |
| 6.0 Conclusion..... | 42 |
| Appendix | 45 |
| Figure 6.1: Model Fitness..... | 45 |
| Table 6.1: Model Fit Summary..... | 46 |
| Table 6.2: Correlations: (Group number 1 - Default model) | 47 |
| Figures of scale distributions for all individual items..... | 48 |
| ~~~ End of Page ~~~ | 105 |

Report: Survey from University Staff

Table: Allocation of Questions

University Staff

| Dimension | Questions | % |
|----------------|-------------------|------|
| 1.0 Governance | 15, 16, 17, 20 | 5.7 |
| 2.0 Awareness | 8, 9, 13 | 49 |
| 3.0 Motivation | 14, 18 | 30.5 |
| 4.0 Design | 12, 19 | 11.8 |
| 5.0 Budget | 11 (Subsection 5) | 3 |

1.0 Governance (15, 16, 17, 20)

Table 1.1 indicates that 321 respondents (47.3%) agreed that their university has specific unit on sustainability while 102 respondents (15.0%) has the opinion that their university has no specific unit on sustainability. A total of 256 (37.7%) respondents have no idea whether university has any specific unit on sustainability.

Table 1.1: Do your university have any specific unit on sustainability?

| Statistics | |
|--|--------|
| Do your university have any specific unit on sustainability? | |
| Skewness | .123 |
| Std. Error of Skewness | .081 |
| Kurtosis | -1.813 |
| Std. Error of Kurtosis | .161 |

| Do your university have any specific unit on sustainability? | | | | | |
|--|--------------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Yes | 420 | 45.7 | 45.7 | 45.7 |
| | No | 136 | 14.8 | 14.8 | 60.5 |
| | I Don't Know | 363 | 39.5 | 39.5 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 1.2 indicates 219 different answers from respondents when they were asked to indicate their institution's greatest sustainability strength.

Table 1.2 Please describe the greatest strengths of your institution in terms of sustainability.

| |
|--|
| 1) Encouraging and promote sustainability |
| 2) Green buffer zone |
| 3) Well organized activities |
| 4) green |
| 5) My university has an environmental sustainability team who raise awareness of environmental sustainability across the institution |
| 6) Research scholars and academicians input |
| 7) Recycling activities |
| 8) The VC |
| 9) Energy Management |
| 10) Used to win sustainability award at the international level. |
| 11) My institution works towards SDG Goals; staff and researchers are asked to work towards that goals. |
| 12) High |
| 13) It contains a lot of green fields. |
| 14) Visible and active centre in UTM |
| 15) Committed staff initiating sustainable activities. |
| 16) Dedicated Unit with passionate staff |
| 17) LEADERSHIP, RESOURCES, NETWORKING |
| 18) Dedicated Unit with passionate staff |
| 19) Practising sustainability the best possible amongst all staff and students |
| 20) technologist |
| 21) Mandatory |
| 22) Iot technology |
| 23) VERY GOOD |
| 24) Kawasan yang luas |
| 25) It n multimedia |
| 26) Do the best |
| 27) We provide the best Customer Service towards our users |
| 28) Aware on the electricity and water usage (having monthly monitoring record and regular audit) |
| 29) Customer Services |
| 30) We implemented certain link for the student to make use in order to make things sort out as simple as possible |
| 31) Engagement with stake holders |
| 32) A Great Green Campus |

| |
|---|
| 33) Mandatory Sustainability subject to all students |
| 34) Sorry I'm working |
| 35) skills |
| 36) Survey is good sustainability and all university need this |
| 37) The practice of zero-waste plastic |
| 38) Experts in sustainability and Community Outreach Program |
| 39) Green initiative campaign to reduce paper usage. |
| 40) Green Environment |
| 41) tiada bilik |
| 42) Ensure access to affordable, reliable, sustainable and modern energy. |
| 43) I can see a green campus, ,birds flying, no burning smoke, litter free campus. |
| 44) 50% Green Area; Community Engagement; |
| 45) It encourages a better, balanced world and focuses on economic, environmental, and social problems |
| 46) economic, social and environmental – in a balanced |
| 47) Address Today's Global Challenges |
| 48) quality education and promote lifelong learning opportunities for all |
| 49) access to affordable, reliable, sustainable and modern energy |
| 50) Promotes sustainable practices through work process & activities, research and related activities. |
| 51) Sustainable cluster for programme development |
| 52) Good Team works |
| 53) transportation and material |
| 54) ECOCAMPUS CENTRE |
| 55) Reducing use of plastic straws and plastic bags |
| 56) PASSION |
| 57) Diverse expertise and networks in areas that could contribute to think-tank addressing fundamental and genuine issues related to SDGs |
| 58) Pengurusan, fakulti dan pusat ada menitikberatkan faktor sustainability dari segi P&P & penyelidikan. |
| 59) Not that I know of... |
| 60) Pengurusan tenaga yang kondusif |
| 61) Pasukan kelestarian yang mantap walaupun kecil |
| 62) Langkah-2 penjimatan tenaga dan pelupusan sisa buangan |
| 63) Support from management. |
| 64) Reduce wastage |
| 65) Wajib |
| 66) Informasi berterusan kepada staf dan pelajar secara berterusan |
| 67) Support by UTM |
| 68) Berkerjasama |
| 69) Attitude / Mindset |
| 70) the sustainability unit has the utmost passion in all things sustainability |
| 71) Komitmen Pelajar staf yang berusaha ke arah pelestarian kampus secara menyeluruh. |
| 72) disbursement/distribution/ recycling of waste |
| 73) The campus is located in the center of natural resources |
| 74) The management is willing to support sustainability in campus |
| 75) The name of UM to attract interest of stakeholders |

| |
|---|
| 76) The campus has a secondary forest and a lot of other existing vegetation. |
| 77) kampus yang cantik, alam semulajadi dan kepakaran akademik yang berkaitan |
| 78) Lecturers and researchers that put sustainable development high on their agenda |
| 79) Quality education |
| 80) no smoking. no one time plastic |
| 81) Unimas is close to the Sarawak community. easy to communicate to conduct programs. |
| 82) Terdapat fakulti yang menumpukan kajian biodiversiti dan alam. |
| 83) melahirkan pelajar yang berkualiti untuk kemahiran dalam industri |
| 84) Kesedaran & keazaman tinggi untuk memperkasakan kelestarian. |
| 85) Assist all the researchers in executing the sustainability related project |
| 86) Established Living labs to spearhead many research and projects on sustainability |
| 87) Lots of trees around the campus and several carparks with open spaces (solar panel) |
| 88) Sustainable Community Transformation is already the niche area of the university |
| 89) Plenty of reusable material research conducted |
| 90) Telah dijadikan agenda (KPI) perancangan strategik universiti. |
| 91) Environmental conservation |
| 92) Community Engagement |
| 93) SDG |
| 94) collaborative effort of all community members |
| 95) Rector's very strong commitment on SDG |
| 96) Sustainability is one of the university's main focus strategic key area. |
| 97) ENVIRONMENTAL SUSTAINABILITY; FINANCIAL SUSTAINABILITY |
| 98) The sustainability has been incorporated in our strategic planning of the university |
| 99) FIGURE OF CEO |
| 100) The campus location |
| 101) our institution has amend their members to sustain the building and the land space to occupied with sustainability program. |
| 102) Recycling, Energy management |
| 103) TEAMWORK |
| 104) our rector |
| 105) Sampah plastik |
| 106) UNIMAS terletak di Sarawak mempunyai kepelbagaian biologi dan alam sekitar yang masih banyak belum diterokai. |
| 107) Green environment |
| 108) KAMPUS DALAM RIMBA HIJAU |
| 109) Mengekalkan rimba hijau |
| 110) pengurusan kelestarian |
| 111) Ada Pusat Eco Campus dan persekitaran kampus yang indah |
| 112) dekat laut |
| 113) UMS is surrounded with greeneries and one of the most beautiful places in Borneo. |
| 114) Banyak usaha dilakukan oleh Jabatan Pembangunan dalam usaha ke arah kelestarian kampus UUM khasnya dari segi penjimatan tenaga |
| 115) Alert |
| 116) Sustainability is part of our core mission and vision in our institute |
| 117) Banyak sumber alam dan flora fauna |
| 118) We are in the top 10 of the UG Green Matric |

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| 119) tumbuhan hijau |
| 120) Mempunyai sumber tanah, flora fauna yang semulajadi yg banyak |
| 121) melaksana program jaringan setiap pelajar UUM dalam menjayakan kesedaran melestarikan alam sekitar di sekitar kawasan kampus dan dewan penginapan pelajar |
| 122) Campus has many trees. |
| 123) Ums ia knowns as an eco-campus university |
| 124) Human and infrastructure resources |
| 125) we have special unit dedicated to eco issues. |
| 126) Kemudahan tong guna semula yang mudah ditemui di sekitar kampus |
| 127) I truthfully have no idea. But mainly because I've never actually bothered with this topic myself. |
| 128) Kepakaran |
| 129) BERPOTENSI BESAR |
| 130) Kawasan universiti yang luas |
| 131) Pencapaian 10 tahun berturut-turut dalam kelestarian kampus dan pengurusan alam sekitar. Dinobatkan universiti hijau ke 28 terbaik di dunia. |
| 132) UPM dapat pengiktirafan universiti lestari |
| 133) kawasan kampus yang luas dan aktiviti pertanian dalam penyelidikan dan pembelajaran |
| 134) green areas throughout campus |
| 135) Responsibe towards the environment |
| 136) The campus location ia amongst the greatest strength for sustainability |
| 137) Provide facilities for academic staffs and students space to do research works related to sustainability. |
| 138) Mempunyai keluasan yang cukup besar bagi menjalankan aktiviti-aktiviti yang boleh melestarikan suasana persekitaran |
| 139) Membantu masyarakat mencipta atau menguna pakai barangan terbuang |
| 140) Preservation of historic placement |
| 141) Honestly, I don't know. |
| 142) Vast area of land |
| 143) Green building |
| 144) Research related to SDGs |
| 145) Persekitaran kampus yang mempunyai sumber Flora dan Fauna yang banyak dan sentiasa dipelihara. |
| 146) No comment |
| 147) Kesenambungan kemudahan fasiliti yang terbaik bagi staf dan pelajar |
| 148) Recycling initiatives |
| 149) Expertise from various field that can collaborate towards sustastainability research/project |
| 150) expertise are available to address these issues |
| 151) we have vast green areas. |
| 152) huge land are |
| 153) Berada di pusat bandar yang mempunyai jumlah penduduk yg ramai dan mempunyai jumlah staff dan pelajar yg ramai.. |
| 154) green campus |
| 155) Sepanjang saya bekerja, majikan saya tidak pernah menitikberatkan soal kelestarian |
| 156) strong support from local government |
| 157) PENGELIBATAN KAKITANGAN DAN SUMBER BAJET |

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| 158) It has many acres of land that crosses highways. To educate the public and implement sustainability practices are so apt for my uni. |
| 159) The management support in sustainable development initiatives |
| 160) urban farming and zero waste |
| 161) KURANG PASTI |
| 162) Sisa bahan buangan teknikal/sisa binaan |
| 163) building and awareness among the staff |
| 164) Pengurusan atasan memberikan komitmen yang tinggi terhadap inisiatif kelestarian |
| 165) Religion creates humbleness |
| 166) Soalan survey ini terlalu banyak. Ini adalah typical situation di mana researcher agak selfish/tamak kerana cuba mendapatkan terlalu byk maklumat drpd awam, tanpa cuba meringkaskan dan memudahkan org awam utk menjawab. Atau dgn kata lain syok sendiri. Typical malaysian research. You may get the quantity, but the quality maybe in doubt. Saya hanya menjawab separuh soalan dgn jujur, selebihnya hanya menjawab secara rambang. |
| 167) Pertanian lestari |
| 168) our faculty have some staff working on sustainable design research. We aim to establish sustainable design movement in east coast area in near time. |
| 169) Kampus hijau, udara segar |
| 170) Kebajikan pelajar |
| 171) Penyelidikan dan hubungan dengan komuniti |
| 172) have own unit on sustainability, active, always there in big event to promote sustainability w the community |
| 173) UNIVERSITI YANG BERFOKUS KEPADA KELAUTAN DAN PENJAGAAN KELESTARIAN ALAM SEKITAR |
| 174) kawasan universiti |
| 175) Terdapat banyak kursus pengajian yang berkait rapat dengan kelestarian. |
| 176) Special unit for sustainability and environment |
| 177) Bidang tujahan |
| 178) We concern in green technology especially solar cell as renewable energy used |
| 179) Ada Pusat Kelestarian dan Alam Sekitar |
| 180) Penjimatan tenaga |
| 181) Mempunyai staf yang bertanggung jawab atas Pengurusan Tenaga, Air dan Bahanapi. |
| 182) Melaksanakan hari bebas kenderaan |
| 183) Okan |
| 184) Bagus dari segi pengurusan tenaga |
| 185) Kerjasama semua warga |
| 186) Penggunaan air hujan sebagai flush toilet, siram pokok dll. |
| 187) NO POLISTERINE |
| 188) Kami mempunyai kursus elektif tentang pembangunan lestari yang ditawarkan kepada pelajar pada setiap semester. |
| 189) Research (solar energy, natural products) |
| 190) Menggunakan bahan gantikan semuajadi yang mesra alam menggantikan bahan gantikan sintetik di dalam projek penyelidikan |
| 191) not sure |
| 192) Mempunyai pakar dan profesional yg mahir tentang kelestarian |
| 193) We are in a sunshine state. Solar energy should be fully utilized |

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| 194) Recycling initiatives |
| 195) The environment is still in pristine condition mostly unaffected by pollution from factories/transportation. |
| 196) 1. Specific centre for sustainability 2. Specific co-curriculum course on sustainability 3. Regular collection of recycle items. 4. Research works in collaboration with Environmen Idaman |
| 197) The environment is still in pristine condition mostly unaffected by pollution from factories/transportation. |
| 198) Marine |
| 199) Memelihara dan menjalan eko pelancongan di dalam kampus |
| 200) The environment is still in pristine condition mostly unaffected by pollution from factories/transportation. |
| 201) Have dedicated office and staff to manage sustainable agenda on my campus |
| 202) Near to the undeveloped area |
| 203) Support from management |
| 204) promoting sports and healthy living style among UUM communities |
| 205) Energy Saving |
| 206) UTHM produce professional so it will be an advantage in order to stabilize the sustainability towards the green campus in years to come |
| 207) Program lestari dan pemakluman yang berterusan berjaya dilaksanakan. |
| 208) Monitor monthly on the electricity consumption, having greener environment, encourage to reuse A4 paper and encourage sustainable researches. |
| 209) Still its not fully functional |
| 210) Many experts and knowledgeable scholars plus huge staff forces |
| 211) Komitmen staf dlm mnjlnkan kelestarian, suasana kampus |
| 212) Jaringan industri |
| 213) Kampus UiTM berada di seluruh Malaysia dan dapat menjayakan projek kelestarian kampus serta masyarakat keseluruhannya di Malaysia dengan lebih berjaya. |
| 214) Bajet Dan pihak pengurusan |
| 215) Sumber alam semulajadi |
| 216) Kawasan dan sumber sekitaran |
| 217) keluasan |
| 218) spread awareness of sustainability among students in early stage |
| 219) There are specific courses dedicated to sustainability, sustainable thinking and sustainable issues that are mandatory for all students. |

Table 1.3 indicates 216 different answers from respondents when they were asked to indicate their institution's greatest sustainability weakness.

Table 1.3: Please describe the greatest weaknesses of your institution in terms of sustainability.

| |
|----------------------|
| 1) Budget allocation |
|----------------------|

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| 2) Knowledge |
| 3) Should place the trash can for three types (reduce/reuse/recycle) |
| 4) Careless for international student services. |
| 5) energy usage |
| 6) In terms of Higher Education 21's Sustainability Indicators- Difficult to measure and compare |
| 7) Top Management priorities amd directions |
| 8) No specific roadmaps on sustainability |
| 9) Lack of awareness in campus residents |
| 10) Not applicable |
| 11) Centralised air conditioner for most buildings. |
| 12) The accessories are few. |
| 13) Awareness and enforcement |
| 14) Staff attitude towards recycling. |
| 15) Breaking barriers and bringing all stakeholders on board |
| 16) GENUINE BUY-IN FROM ALL STAFFS/ STUDENTS - MORE AWARENESS/ ENGAGEMENT NEEDED |
| 17) Breaking barriers and bringing all stakeholders on board |
| 18) Funding support for sustainable projects |
| 19) Awareness & Funding from the government |
| 20) Mandatory |
| 21) Solar panel not used at the whole department |
| 22) Kewangan |
| 23) Lack of communication understanding with our foreign students |
| 24) Lacking of monetary/ funding to support the sustainability projects either among the staffs or students. |
| 25) Lack of Communication |
| 26) Basically on miscommunication and misunderstandings with the foreign users |
| 27) Awareness and campaign |
| 28) Lack of concerted dedication to fulfilling sustainability |
| 29) Hiring people |
| 30) funding |
| 31) Less tutorial class and less good lecture.. |
| 32) Attitude of staff and student |
| 33) implementation of car free day |
| 34) Not provide any guide for staff ng student to reach sustainability |
| 35) Most of the Air-Conditioner unit still operate using CFC gas |
| 36) No offices/officers incharge of sustainability |
| 37) kekurangan dana |
| 38) no fund allocated |
| 39) No one unit to uphold sustainability |
| 40) Not provide any guide for staff ng student to reach sustainability |
| 41) No room/office |
| 42) Fund |
| 43) No room/office |
| 44) No fund allocated |

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| 45) No money |
| 46) However, many paths for walking are rather dangerous due to undulating areas. No bicycle path for students and staff, |
| 47) Optimization of Resources |
| 48) This idea can be succeed if all staff is contributing for this idea |
| 49) Lack of fund |
| 50) Fund |
| 51) Lack of fund |
| 52) No Fund |
| 53) Overall awareness among staff and students need to be enhanced. |
| 54) Funding for sustainable development and initiatives |
| 55) Lack of funding |
| 56) environment |
| 57) Lack of implementation. Bermusim. |
| 58) IT Facilities |
| 59) Fund |
| 60) No budget, not enough staf to handle/help |
| 61) no students |
| 62) STAFF SKILLS |
| 63) Too much duplication of activities by separate research groups addressing problems from comfort zone of group's expertise, instead of design thinking approach where brainstorming with stakeholders should be the motivation for seeking solution. |
| 64) Sokongan dan kerjasama semua pihak iaitu pengurusan, staf dan pelajar. |
| 65) Awareness level, implementation methods |
| 66) Penglibatan dan komitmen warga kerja |
| 67) Kewangan dan kelestarian unit serta sumber manusia |
| 68) Sikap dan tanggungjawabbudget |
| 69) Need to improve on internal sustainability practices. |
| 70) Attitude of staff and/or student who does not care on sustainability effort by university |
| 71) Usaha berterusan yang masih kurang |
| 72) Tidak bertanggungjawabgotong |
| 73) Budget |
| 74) the misconception and understanding of the word sustainability itself |
| 75) Bantuan kewangan yang tidak diberi keutamaan untuk menjalankan inisiatif pelestarian kampus. |
| 76) not able to have energy resources such as the electricity generation |
| 77) The location of campus is far from the town center and quite isolated. |
| 78) awareness |
| 79) Funding is limited and the promotion on activities are not strong or widespread |
| 80) no allocation for promoting sustainability; sustainability is parked as one portion of a research cluster only, which showed that UM is not paying full attention to sustainability |
| 81) The majority of buildings are in disrepair with very poor energy efficiency. |
| 82) belanjawan, komitmen seluruh warga universiti, promosi inisiatif sustainability perlu dipertingkatkan |
| 83) Pengurusan |
| 84) No concerted effort to promote the SDGs. |
| 85) Faktor Kewangan |

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| 86) climate action |
| 87) continuity of implementation |
| 88) Lack of awareness about sustainability practices. |
| 89) Pembiayaan kewangan yang sedikit untuk melaksanakan kelestarian secara massa. |
| 90) peralatan pembelajaran harus dinaiktaraf sesuai dengan peredaran masa |
| 91) Keterangkuman semua dalam menjayakan kelestarian. |
| 92) The sustainability is relatively transparent to all the staffs |
| 93) Lack of green environment and restoration of existing vegetation. Limited commitment in full utilization of renewable energy resources. |
| 94) Practice sustainability (e.g. recycling, utility savings) in the daily life of the campus community |
| 95) Budget / fundings |
| 96) Kesungguhan (komitmen) semua pihak berkepentingan (multistakeholders governance). |
| 97) Single use plastic, waste management, energy use |
| 98) Financial Constraint |
| 99) Focus |
| 100) All staff's commitment weak. |
| 101) Budget restrictions and manpower. |
| 102) MAINTENANCE OF INSTRUMENTS |
| 103) Financial |
| 104) BUDGET |
| 105) The surrounding community |
| 106) So many resources / waste that can be re-use or re produce available but the university did not take advantage of it. A simple examples are to make a compost/ fertiliser from food waste, dry leaves etc. It can save a lot of university's fund to look after the trees and flowers for university's beautiful landscape. |
| 107) has many land space area left empty |
| 108) Little or no effort to reduce wastage, No effort to capture solar energy. |
| 109) KEWANGAN |
| 110) budget |
| 111) Kekurangan tong sampah |
| 112) staff have to find own budget |
| 113) Kos yang besar kerana masalah pengangkutan. |
| 114) TIADA |
| 115) kewangan |
| 116) kekangan kewangan |
| 117) Sikap, kesedaran dan komitmen |
| 118) peskitaran luar kampus banyak sampah |
| 119) Most people take for granted all the rich resources which are available here in Sabah , including in UMS. |
| 120) Kemampuan kewangan ke arah kelestarian kampus UUM adalah agak terbatas |
| 121) UMS accomodation are not service regularly. |
| 122) Slow |
| 123) Financial |
| 124) kewangan dalam melaksanakan |
| 125) penggunaan beg plastik, straw, bungkus makanan plastik pakai buang dan pegelasan sampah yang agak kurang dipraktikkan |

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| 126) | tiada kemudahan pengasingan bahan2 buangan (kertas, tin, bahan basah) di inasis2 |
| 127) | Plastic waste still high in the campus |
| 128) | Insufficient funding and slow changes in the mindset |
| 129) | not so effective implementation of ecological isdues |
| 130) | Kurang kempen yang berterusan |
| 131) | Again, no idea. Sorry. |
| 132) | Kewangan |
| 133) | KOMITMEN SEMUA PIHAK |
| 134) | Pengurusan sumber |
| 135) | Keupayaan mewujudkan sistem solar di seluruh kampus pengajian. Masalah daripada logistik guna pakai pengumpulan sisa-sisa makanan seluruh kampus yang besar. |
| 136) | Kurang peruntukan dan tiada penubuhan pejabat lestari. |
| 137) | less green building - all buildings are using air conditioner |
| 138) | Mentality |
| 139) | Facility and accessibility of internet still did not cover all the area of campus. |
| 140) | Kurang kesedaran dan bersikap acuh tidak acuh dikalangan warga institusi berkenaan kepentingan kelestarian dalam sesebuah institusi |
| 141) | Peruntukan yang diberi amat berkurangan |
| 142) | Realization/take up rate by its staff and students on making the sustainable campus.
Lack of cooperation |
| 143) | Poor management in maintaining the sustainability. |
| 144) | Lack of awareness among the staff and students |
| 145) | funding for sustainability activities |
| 146) | Lacking on Awareness and prattice on implementing sustainability |
| 147) | Peruntukan Kewangan |
| 148) | Kemudahan |
| 149) | Tidak maklum |
| 150) | Sustainable initiatives not governance driven, more individual initiatives. |
| 151) | We are too big and hence, the sustainability effort must start small first but effectively, and can be progressed stage by stage or area by area. |
| 152) | not enough money/ budget to run activities that are piling up or thrust upon the university |
| 153) | lacking recycle bins |
| 154) | no budget, no dedicated sustainability office |
| 155) | kurang fasiliti |
| 156) | Tidak ada kerjasama dan kata sepakat. |
| 157) | some old facility, which hinder the sustainabilty plan to be executed |
| 158) | Fasiliti Dan kemudahan-kemudahan untuk melestarikan kolej |
| 159) | weak in financial |
| 160) | BAJET DAN SUMBER |
| 161) | Lack of awareness or activities pertaining to it. At most is on recycling waste bins, recycling clothes. But there need to be more. |
| 162) | KURANG PASTI |
| 163) | Funding, Knowledge, Experience Officer, Regulation, Workload,Logistic,Teamwork,Leadership and commitment. |
| 164) | too many campuses and old building too |
| 165) | Penglibatan warga kampus dan penyampaian maklumat |

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| 166) Real nature of Team work is poor |
| 167) Tiada penggerak utama yg produktif |
| 168) Soalan survey ini terlalu banyak. Ini adalah typical situation di mana researcher agak selfish/tamak kerana cuba mendapatkan terlalu byk maklumat drpd awam, tanpa cuba meringkaskan dan memudahkan org awam utk menjawab. Atau dgn kata lain syok sendiri. Typical malaysian research. You may get the quantity, but the quality maybe in doubt. Saya hanya menjawab separuh soalan dgn jujur, selebihnya hanya menjawab secara rambang. |
| 169) lack of awareness. no sustainable reporting. no sustainable culture. limited resources |
| 170) Kurang fasiliti terutama di Kampus Besut |
| 171) Online teaching & learning facilities |
| 172) Belanjawan |
| 173) not integrated in all faculty - not compulsory yet |
| 174) SIKAP WARGA DAN KOMUNITI YANG KURANG CAKNA KEPADA KELESTARIAN ALAM |
| 175) tidak pasti dan tiada pengetahuan |
| 176) Low motivation and commitment from staff |
| 177) Kekurangan kepakaran (ahli akademik masih muda dan kurang pendedahan besar/antarabangsa) |
| 178) Not sure |
| 179) Kurang penghayatan dari semua |
| 180) Masih ada staf dan pelajar yg merokok |
| 181) Masih lemah dalam infrastructure untuk menggalakkan kitar semula |
| 182) Ruang dan fasiliti yang menyokong |
| 183) Okan |
| 184) Polisi keselamatan pekerja |
| 185) Penguatkuasaan |
| 186) I DONT KNOW |
| 187) Kelemahan terletak pada pihak pengurusan kewangan. Perbelanjaan tahunan perlu disediakan untuk mewujudkan dan mengekalkan kelestarian kampus. |
| 188) Lack of funding |
| 189) Tidak mengamalkan kitar semula |
| 190) Straw plastic still in used around campus |
| 191) Kesedaran yg rendah dan perlaksanaan hanya di tempat2 khusus, tidak menyeluruh |
| 192) Lack of sustainable practices in and around campus |
| 193) Lack of awareness among stakeholders |
| 194) Management of sustainability in 3 different campuses and various residential colleges |
| 195) Lack of awareness among stakeholders |
| 196) universiti tidak mengutamakan kelestarian dalam semua aspek, termasuk pembinaan kampus |
| 197) Kempen tidak menyeluruh |
| 198) Lack of awareness among stakeholders |
| 199) Do not provide justification and reason to the students on why the sustainability is enforced. For example, university strictly not allowed mineral water to be sold due to the effort of reducing the plastic waste. HOWEVER, other drink such as carbonated, soda and flavoured drink in plastic bottle still sold widely and easily accessible. Does it mean, the student need to sacrifice their health for reducing plastic usage. ACTUALLY, theres no |

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| degree, tiers into this enactment, if all drink in plastic bottle wanna be terminate from being sold, then not only apply to mineral water. All drink in plastic bottle need to apply as well. THUS, we really need to provide justification and reason to the customer. |
| 200) So far, the impact and the reach of this office towards disseminating sustainability agenda to staff and student is ok, but not great. A lot of emails regarding events and activities were sent by the office, but the urgency wasn't felt by the staff and student alike. A dedicated sustainability officer should be placed at each faculty (can be teaching or office staff), which will convey and act on the sustainable policy set by the university. |
| 201) too many vehicles allowed to access the campus without strong enforcement |
| 202) Lacking in awareness |
| 203) not enough program to support sustainability |
| 204) It could revolves around the budgeting I guess |
| 205) Lacking of financial support in promoting (1) sustainability events to campus communities as well as local communities, (2) sustainable researches, (3) green buildings and environment. |
| 206) Less attraction from a point of view |
| 207) Many experts and scholars but less proactive involvement |
| 208) Peruntukan terhad |
| 209) Fasiliti tidak mencukupi |
| 210) Kekangan peruntukan |
| 211) Bajet Dan pihak pengurusan |
| 212) kesedaran |
| 213) Peruntukan |
| 214) tidak fokus |
| 215) low awareness |
| 216) There are still policies and projects in the works that need to be implemented on-campus to provide incentives for students and staff. |

Table 1.4 indicates majority of respondents (666 or 98.1%) feel that their university has to do something on improving sustainability while 13 respondents (1.9%) feel no need.

Table 1.4: Do you think your university should strengthen/improve its action on sustainability?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|---------|---------------|--------------------|
| Yes | 904 | 98.4 | 98.4 | 98.4 |
| No | 15 | 1.6 | 1.6 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

2.0 Awareness (8, 9, 13)

Statistics

| | Your awareness of sustainability effort in the campus. | Your awareness of specific office for sustainability in the campus. | Provides students with sustainable accommodation . | Provides students with environmental sustainability practice facilities. | Establish student groups with a focus on sustainability. | Encourage student groups to participate in sustainability initiatives. | Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises. | Encourage students to support enterprises that pledge to be socially and environmentally responsible. |
|------------------------|--|---|--|--|--|--|---|---|
| Skewness | -0.212 | -0.130 | -1.177 | -1.295 | -1.230 | -1.552 | -1.310 | -1.442 |
| Std. Error of Skewness | .094 | .094 | .081 | .081 | .081 | .081 | .081 | .081 |
| Kurtosis | -0.230 | -0.717 | 1.354 | 1.593 | 1.195 | 2.581 | 1.610 | 2.278 |
| Std. Error of Kurtosis | .187 | .187 | .161 | .161 | .161 | .161 | .161 | .161 |

Table 2.1: Your awareness of sustainability effort in the campus

Your awareness of sustainability effort in the campus.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|-----------------------|-----------|---------|---------------|--------------------|
| Valid | I don't know at all | 38 | 4.1 | 5.6 | 5.6 |
| | I've heard f it | 215 | 23.4 | 31.7 | 37.3 |
| | I know to some extent | 343 | 37.3 | 50.5 | 87.8 |
| | I know very much | 83 | 9.0 | 12.2 | 100.0 |
| | Total | 679 | 73.9 | 100.0 | |
| Missing | System | 240 | 26.1 | | |
| Total | | 919 | 100.0 | | |

Table 2.2: Your awareness of specific office for sustainability in the campus

Your awareness of specific office for sustainability in the campus.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|-----------------------|-----------|---------|---------------|--------------------|
| Valid | I don't know at all | 91 | 9.9 | 13.4 | 13.4 |
| | I've heard f it | 218 | 23.7 | 32.1 | 45.5 |
| | I know to some extent | 276 | 30.0 | 40.6 | 86.2 |
| | I know very much | 94 | 10.2 | 13.8 | 100.0 |
| | Total | 679 | 73.9 | 100.0 | |
| Missing | System | 240 | 26.1 | | |
| Total | | 919 | 100.0 | | |

Table 2.3: Provides students with sustainable accommodation

Provides students with sustainable accommodation.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 39 | 4.2 | 4.2 | 4.2 |
| | Strongly Disagree | 21 | 2.3 | 2.3 | 6.5 |
| | Disagree | 58 | 6.3 | 6.3 | 12.8 |
| | Either Agree Nor Disagree | 220 | 23.9 | 23.9 | 36.8 |
| | Agree | 334 | 36.3 | 36.3 | 73.1 |

| | | | | |
|----------------|-----|-------|-------|-------|
| Strongly Agree | 247 | 26.9 | 26.9 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 2.4: Provides students with environmental sustainability practice facilities

Provides students with environmental sustainability practice facilities.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 44 | 4.8 | 4.8 | 4.8 |
| | Strongly Disagree | 18 | 2.0 | 2.0 | 6.7 |
| | Disagree | 53 | 5.8 | 5.8 | 12.5 |
| | Either Agree Nor Disagree | 193 | 21.0 | 21.0 | 33.5 |
| | Agree | 351 | 38.2 | 38.2 | 71.7 |
| | Strongly Agree | 260 | 28.3 | 28.3 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 2.5: Establish student groups with a focus on sustainability

Establish student groups with a focus on sustainability.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 53 | 5.8 | 5.8 | 5.8 |
| | Strongly Disagree | 23 | 2.5 | 2.5 | 8.3 |
| | Disagree | 56 | 6.1 | 6.1 | 14.4 |
| | Either Agree Nor Disagree | 196 | 21.3 | 21.3 | 35.7 |
| | Agree | 343 | 37.3 | 37.3 | 73.0 |
| | Strongly Agree | 248 | 27.0 | 27.0 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 2.6: Encourage student groups to participate in sustainability initiatives

Encourage student groups to participate in sustainability initiatives.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 37 | 4.0 | 4.0 | 4.0 |

| | | | | |
|---------------------------|-----|-------|-------|-------|
| Strongly Disagree | 16 | 1.7 | 1.7 | 5.8 |
| Disagree | 33 | 3.6 | 3.6 | 9.4 |
| Either Agree Nor Disagree | 154 | 16.8 | 16.8 | 26.1 |
| Agree | 371 | 40.4 | 40.4 | 66.5 |
| Strongly Agree | 308 | 33.5 | 33.5 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 2.7: Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises

Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 52 | 5.7 | 5.7 | 5.7 |
| Strongly Disagree | 17 | 1.8 | 1.8 | 7.5 |
| Disagree | 42 | 4.6 | 4.6 | 12.1 |
| Either Agree Nor Disagree | 214 | 23.3 | 23.3 | 35.4 |
| Agree | 349 | 38.0 | 38.0 | 73.3 |
| Strongly Agree | 245 | 26.7 | 26.7 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 2.8: Encourage students to support enterprises that pledge to be socially and environmentally responsible

Encourage students to support enterprises that pledge to be socially and environmentally responsible.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 39 | 4.2 | 4.2 | 4.2 |
| Strongly Disagree | 14 | 1.5 | 1.5 | 5.8 |
| Disagree | 37 | 4.0 | 4.0 | 9.8 |
| Either Agree Nor Disagree | 185 | 20.1 | 20.1 | 29.9 |
| Agree | 364 | 39.6 | 39.6 | 69.5 |
| Strongly Agree | 280 | 30.5 | 30.5 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

3.0 Motivation (14, 18)

Statistics

| | Security within the campus. | Provide adequate access to people with disability. | University publishes stand-alone sustainability report regularly. | University has a dedicated website for campus sustainability. | Community engagement. | Charitable activities. | Has a dedicated section in their annual report dedicated to sustainability. | University is accredited by independent organisation such as Global Reporting Initiative. | Has a dedicated sustainability officer. | Has a dedicated sustainability division. | Supports outside organisations that focus on sustainability. |
|------------------------|-----------------------------|--|---|---|-----------------------|------------------------|---|---|---|--|--|
| Skewness | -1.460 | -1.230 | -.925 | -.932 | -1.552 | -1.634 | -1.018 | -.838 | -.855 | -.908 | -1.272 |
| Std. Error of Skewness | .081 | .081 | .081 | .081 | .081 | .081 | .081 | .081 | .081 | .081 | .081 |
| Kurtosis | 3.264 | 1.589 | .145 | .034 | 2.986 | 3.593 | .196 | -.323 | -.326 | -.130 | .958 |
| Std. Error of Kurtosis | .161 | .161 | .161 | .161 | .161 | .161 | .161 | .161 | .161 | .161 | .161 |

Table 3.1: Security within the campus

Security within the campus.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 15 | 1.6 | 1.6 | 1.6 |
| | Strongly Disagree | 6 | .7 | .7 | 2.3 |
| | Disagree | 25 | 2.7 | 2.7 | 5.0 |
| | Either Agree Nor Disagree | 164 | 17.8 | 17.8 | 22.9 |
| | Agree | 360 | 39.2 | 39.2 | 62.0 |
| | Strongly Agree | 349 | 38.0 | 38.0 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.2: Provide adequate access to people with disability

Provide adequate access to people with disability.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 11 | 1.2 | 1.2 | 1.2 |
| | Strongly Disagree | 21 | 2.3 | 2.3 | 3.5 |
| | Disagree | 47 | 5.1 | 5.1 | 8.6 |
| | Either Agree Nor Disagree | 164 | 17.8 | 17.8 | 26.4 |
| | Agree | 319 | 34.7 | 34.7 | 61.2 |
| | Strongly Agree | 357 | 38.8 | 38.8 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.3: University publishes stand-alone sustainability report regularly

University publishes stand-alone sustainability report regularly.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 82 | 8.9 | 8.9 | 8.9 |
| | Strongly Disagree | 33 | 3.6 | 3.6 | 12.5 |
| | Disagree | 78 | 8.5 | 8.5 | 21.0 |
| | Either Agree Nor Disagree | 233 | 25.4 | 25.4 | 46.4 |

| | | | | |
|----------------|-----|-------|-------|-------|
| Agree | 289 | 31.4 | 31.4 | 77.8 |
| Strongly Agree | 204 | 22.2 | 22.2 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 3.4: University has a dedicated website for campus sustainability

University has a dedicated website for campus sustainability.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 86 | 9.4 | 9.4 | 9.4 |
| | Strongly Disagree | 36 | 3.9 | 3.9 | 13.3 |
| | Disagree | 75 | 8.2 | 8.2 | 21.4 |
| | Either Agree Nor Disagree | 209 | 22.7 | 22.7 | 44.2 |
| | Agree | 283 | 30.8 | 30.8 | 75.0 |
| | Strongly Agree | 230 | 25.0 | 25.0 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.5: Community engagement

Community engagement.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 30 | 3.3 | 3.3 | 3.3 |
| | Strongly Disagree | 8 | .9 | .9 | 4.1 |
| | Disagree | 38 | 4.1 | 4.1 | 8.3 |
| | Either Agree Nor Disagree | 157 | 17.1 | 17.1 | 25.4 |
| | Agree | 383 | 41.7 | 41.7 | 67.0 |
| | Strongly Agree | 303 | 33.0 | 33.0 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.6: Charitable activities

Charitable activities.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 25 | 2.7 | 2.7 | 2.7 |
| | Strongly Disagree | 6 | .7 | .7 | 3.4 |
| | Disagree | 31 | 3.4 | 3.4 | 6.7 |
| | Either Agree Nor Disagree | 146 | 15.9 | 15.9 | 22.6 |
| | Agree | 389 | 42.3 | 42.3 | 65.0 |
| | Strongly Agree | 322 | 35.0 | 35.0 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.7: Has a dedicated section in their annual report dedicated to sustainability

Has a dedicated section in their annual report dedicated to sustainability.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 99 | 10.8 | 10.8 | 10.8 |
| | Strongly Disagree | 26 | 2.8 | 2.8 | 13.6 |
| | Disagree | 54 | 5.9 | 5.9 | 19.5 |
| | Either Agree Nor Disagree | 222 | 24.2 | 24.2 | 43.6 |
| | Agree | 303 | 33.0 | 33.0 | 76.6 |
| | Strongly Agree | 215 | 23.4 | 23.4 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.8: University is accredited by independent organisation such as Global Reporting Initiative

University is accredited by independent organisation such as Global Reporting Initiative.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 122 | 13.3 | 13.3 | 13.3 |
| | Strongly Disagree | 34 | 3.7 | 3.7 | 17.0 |
| | Disagree | 59 | 6.4 | 6.4 | 23.4 |
| | Either Agree Nor Disagree | 232 | 25.2 | 25.2 | 48.6 |
| | Agree | 266 | 28.9 | 28.9 | 77.6 |
| | Strongly Agree | 206 | 22.4 | 22.4 | 100.0 |

| | | | |
|-------|-----|-------|-------|
| Total | 919 | 100.0 | 100.0 |
|-------|-----|-------|-------|

Table 3.9: Has a dedicated sustainability officer

Has a dedicated sustainability officer.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 110 | 12.0 | 12.0 | 12.0 |
| Strongly Disagree | 44 | 4.8 | 4.8 | 16.8 |
| Disagree | 60 | 6.5 | 6.5 | 23.3 |
| Either Agree Nor Disagree | 205 | 22.3 | 22.3 | 45.6 |
| Agree | 261 | 28.4 | 28.4 | 74.0 |
| Strongly Agree | 239 | 26.0 | 26.0 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 3.10: Has a dedicated sustainability division

Has a dedicated sustainability division.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 94 | 10.2 | 10.2 | 10.2 |
| Strongly Disagree | 41 | 4.5 | 4.5 | 14.7 |
| Disagree | 69 | 7.5 | 7.5 | 22.2 |
| Either Agree Nor Disagree | 199 | 21.7 | 21.7 | 43.9 |
| Agree | 270 | 29.4 | 29.4 | 73.2 |
| Strongly Agree | 246 | 26.8 | 26.8 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 3.11: Supports outside organisations that focus on sustainability

Supports outside organisations that focus on sustainability.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|-----------|---------|---------------|--------------------|
| | | | | |

| | | | | | |
|-------|---------------------------|-----|-------|-------|-------|
| Valid | No Knowledge | 78 | 8.5 | 8.5 | 8.5 |
| | Strongly Disagree | 21 | 2.3 | 2.3 | 10.8 |
| | Disagree | 38 | 4.1 | 4.1 | 14.9 |
| | Either Agree Nor Disagree | 184 | 20.0 | 20.0 | 34.9 |
| | Agree | 333 | 36.2 | 36.2 | 71.2 |
| | Strongly Agree | 265 | 28.8 | 28.8 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 3.12: Please describe the key factors that support the advancement of environmental and sustainability issues on your campus.

| |
|--|
| 1) Awareness campaign and encouragement |
| 2) Budget |
| 3) Environmentally friendly |
| 4) Need to increase more international student services |
| 5) money |
| 6) Need more participation in awareness-raising activities and assists with distributing information and advice. |
| 7) Research centers can participate more with their expertisetion |
| 8) Direction from top management |
| 9) Dedicated staff and unit at campus sustainability unit |
| 10) Towards promoting green environment |
| 11) A unit called Sustainable Development Department has been established at the university level. |
| 12) Good Management |
| 13) Increaing the roads network for transportations and cafes. |
| 14) SDG as an indicator |
| 15) PARTICIPATION OF STAFFS & STUDENTS |
| 16) SDG as an indicator |
| 17) Synergy Together |
| 18) Funds |
| 19) Awareness
Funding from the government
Culture
Enforcement |
| 20) Mandatory |
| 21) Teamwork and support from our top management |
| 22) We practice on the electrical savings on which, we only switch on important lights |
| 23) Funding |
| 24) Save electricity energy |
| 25) We practiced on electrical saver in every department. The usage is limited |
| 26) Leadership focus and community awareness |
| 27) Cooperate |

| |
|--|
| 28) Discipline |
| 29) cpd program |
| 30) Attitude of staff and student |
| 31) Learn from top management |
| 32) Dissemination campaign through email. |
| 33) Increase awareness on the benefit of activities related to Sustainable objectives |
| 34) Educate/ make them participate in environmental and sustainability |
| 35) promote sustainability |
| 36) Fund |
| 37) fund |
| 38) Need more fund, support from government |
| 39) Continuous improvement and reporting |
| 40) Monetary resources/training/workshop and , the long-term persistence is required to progress to sustainability |
| 41) Learn from top management |
| 42) Creating awareness |
| 43) Ensure availability and sustainable management of water and sanitation |
| 44) Allocate fund for sustainable activities |
| 45) Top up more fund |
| 46) Team work |
| 47) Room no/ no office/ no officer |
| 48) No fund |
| 49) No fund |
| 50) No fund |
| 51) No fund |
| 52) Since I am new at UPNM, I really am not so sure. |
| 53) Management support; Dedicated office; community engagement is norms |
| 54) i'm not sure |
| 55) enjoy prosperous and fulfilling lives |
| 56) Quality education and promote lifelong learning opportunities for all. |
| 57) Promote sustained, inclusive and sustainable economic growth |
| 58) Cooperation from all i.e. management & administrative level, staff and students. |
| 59) Government policies |
| 60) campaign |
| 61) VC |
| 62) Fund |
| 63) Few staf believe in environmental sustainability |
| 64) Kempen kesedaran dan kewangan. |
| 65) PASSION, STAFF, SDG AND RANKING |
| 66) Knowledge integration and multidisciplinary effort. |
| 67) Sokongan dan kerjasama semua pihak iaitu pengurusan, staf dan pelajar. |
| 68) Commitment from management |
| 69) Kesedaran dan komitmen warga universiti |
| 70) Budget |
| 71) Buy in and participation by all staff. |
| 72) awareness and participation of all |

| |
|---|
| 73) Kebersihan |
| 74) Informasi berterusan |
| 75) Gotong royongkurang |
| 76) Support from all parties |
| 77) students |
| 78) Usaha oleh golongan penyelidik, pelajar, staf dan pensyarah. |
| 79) pandangan jauh pihak pengurusan, kemudahan kakitangan sediaada, kerjasama bersama pelajar dan komuniti petaling jaya |
| 80) The awareness on sustainability is the key factor |
| 81) support from top admin |
| 82) Growing awareness among the students on sustainability through their initiatives and activities |
| 83) Budget and low of promotional programs (roadshows etc.) |
| 84) A lot of research interest that affect the environment and sustainability in general. |
| 85) tambah belanjawan, tingkatkan promosi dan komitmen warga universiti |
| 86) Funding and university ranking |
| 87) Faktor Kewangan dan Kesedaran tentang amalan kelestarian di kampus dan penerapan. |
| 88) strong emphasize on producing quality teaching and learning in both services and facilities to the students |
| 89) awareness, policy from top management |
| 90) Management, from Vice Chancellors to Head of Department |
| 91) Kesedaran dan proaktif dalam isu kelestarian dikalangan staf dan pelajar. |
| 92) bahan material untuk yang digunakan oleh pelajar harus dikitar semula |
| 93) Sokongan padu pihak pengurusan tertinggi & akademia |
| 94) One unit has been assigned to monitor this related issue |
| 95) Self-initiative by staff and students. |
| 96) To have policies in place regarding sustainability |
| 97) Keeping the uni green, love the uni tranquil surroundings which are conducive for students and staff, safety and secure, little or no vandalism |
| 98) Research grant in the niche area, workshops and training, through teaching and learning, collaborations with other institutions, international conferences, student programmes among others |
| 99) Keterbukaan dan ketelusan capaian maklumat/data dan sistem komunikasi menerusi Internet. |
| 100) Top management that cares about sustainability issues |
| 101) Top Management Decision |
| 102) Will power |
| 103) updates on sustainable projects |
| 104) Available funding poor/low |
| 105) Availability of facilities and research key areas |
| 106) AWARENESS ON THE IMPORTANCE OF SUSTAINABILITY DEVELOPMENT |
| 107) The support and cooperation shown by all staff and students of the university even in monetary form |
| 108) Leadership |
| 109) SDG |
| 110) Volunteerism |

| | |
|------|--|
| 111) | The management support and buy in as well as upfront seed fund. Start small, with whatever resources available before moving on to the next level. |
| 112) | sustainability is important in our daily life and the surrounding |
| 113) | Ikhlas, awareness, accountability |
| 114) | KERJASAMA |
| 115) | understand from the community itselfes |
| 116) | Kepupusan haiwan |
| 117) | self-awareness |
| 118) | Komitmen pengurusan tertinggi UNIMAS. |
| 119) | engagement with other sectors |
| 120) | campaign |
| 121) | GALAKAN DARI INSTITUSI |
| 122) | Penglibatan Pengurusan Tertinggi dalam mengekalkan kelestarian di kampus. |
| 123) | UUM berfungsi sebagai sebuah kampus hijau (green campus) |
| 124) | Komitmen, recognition & reward |
| 125) | kesedaran warga |
| 126) | I would like to cite a research by Parker, S., & Khare, A. (2005), in understanding success factors for ensuring sustainability in ecotourism development, we should take these factors into consideration:
(1) environmental (environmental quality, site boundaries, water and opportunity costs),
(2) community (community partnerships, community definition, community dialogue, and poverty and social inclusion) and
(3) economic (national political environment, adequate legal systems and security, infrastructure and government policy). |
| 127) | Penyelidikan yang berterusan ke arah kelestarian kampus |
| 128) | Community engagement |
| 129) | Initiative |
| 130) | Memperkasakan kompetensi pegawai2 pengurus dalam kampus Dan mennyokong Penyelidikan pensyarah dalam aktiviiti kelestarian |
| 131) | Sufficient financial support and awareness |
| 132) | kerjasama warga uum dan penduduk sekitar |
| 133) | Strongly supported by the univerity's management. |
| 134) | sokongan semua pihak |
| 135) | gabungan semua tenaga kerja (staff dan pekerja) di semua peringkat |
| 136) | kerjasama semua pihak yang terlibat |
| 137) | Kesedaran diri sendiri |
| 138) | Awareness and rules/regulations |
| 139) | EcoCampus policy, Policy guiding research, motivation of some staff |
| 140) | quality of life of inhabitants |
| 141) | I doubt the university hires experienced and relevant staff to oversee environmental issues. I see indiscriminate clearing of trees and structures. Very little recycling is encouraged and plastic is still widely used on campus despite being banned. There is no enforcement and no will in the administration to see through such campaigns. |
| 142) | Visibiliti peralatan guna semula/tong guna semula |
| 143) | Maybe campaigns? Or even the promotion of electric cars? I dont know. |
| 144) | Kerjasama daripada semua staf Universiti |

| | |
|------|---|
| 145) | KOMITMEN |
| 146) | Perancangan dan peruntukan |
| 147) | sokongan masyarakat semua sejajar pengajaran dan pembelajaran universiti dalam bidang sains dan teknologi terkini dari semua peringkat dahulu,sekarang dan masa depan. |
| 148) | Education and funds |
| 149) | UPM giat dalam pembangunan pelajar dan komuniti melalui projek melibatkan kelestarian |
| 150) | Pembudayaan kampus lestari oleh staf dan pelajar. |
| 151) | Awareness to solve the problem of sustainability issues by relevant actions. |
| 152) | Secara tidak langsung akan mengurangkan kos kos yang tidak nampak |
| 153) | Awareness and showing examples |
| 154) | A good initiative begins with good investment followed by good management. |
| 155) | Universiti's policy |
| 156) | funding |
| 157) | Project Collaboration with industries and communities |
| 158) | Kesedaran dan melihat kelestarian di kampus adalah keutamaan. |
| 159) | Budget |
| 160) | Penggunaan sumber alam dan sampah kitar semula yang boleh menjana pendapatan dan menghidupkan budaya baru yang lebih efektif dalam persekitaran |
| 161) | Financial constraint |
| 162) | Political will of top management and understanding of sustainable issues |
| 163) | Funding |
| 164) | awareness needed, fund to run campaigns needed |
| 165) | not much advertisement on how the public (staff , students) can actually participate/contribute other than sending plastic bottles, newspapers, old clothes for recycle. |
| 166) | kampus ini milik penuh kerajaan negeri sabah... |
| 167) | Pemahaman objektif, kerjasama, melibatkan semua ahli. |
| 168) | just appointed a CoE to oversee the sustainability activities |
| 169) | Agar persekitaran samada luar atau dalam kampus sentiasa terjaga |
| 170) | mobey support from government |
| 171) | Kualiti hidup yang baik. |
| 172) | PIHAK ATASAN DAN PENGURUSAN |
| 173) | organization |
| 174) | TIADA PENGETAHUAN |
| 175) | Semua pihak atasan universiti ,pengurusan tertinggi,akademik,professional,staf pelaksana dan pelajar |
| 176) | awareness |
| 177) | Penglibatan semua pihak secara langsung dan tidak langsung |
| 178) | Plan strategi |
| 179) | Plan the sustainability plan, then work out the plan. No changes of plan eventhough there are changes in management |
| 180) | Berada di Luar bandar |
| 181) | Soalan survey ini terlalu banyak. Ini adalah typical situation di mana researcher agak selfish/tamak kerana cuba mendapatkan terlalu byk maklumat drpd awam, tanpa cuba meringkaskan dan memudahkan org awam utk menjawab. Atau dgn kata lain |

| |
|--|
| syok sendiri. Typical malaysian research. You may get the quantity, but the quality maybe in doubt. Saya hanya menjawab separuh soalan dgn jujur, selebihnya hanya menjawab secara rambang. |
| 182) MOHE should initiate first |
| 183) The awareness towards sustainability is relatively low. Its revolving around ecological paradigm such as recycling, reuse and waste manangement. if we refer to Brutland report 1987, the definition of sustainbality have been expand to more comprehensive area. we can improve sustainable way of life in social, practical, and personal values. Sustainable reporting is also crucial to ensure which are can be enhanced. |
| 184) Kesedaran sendiri |
| 185) Community & industrial involvment |
| 186) Arahan pengurusan tertinggi. Salah satu agenda daripada pelan strategik UMT |
| 187) ADA FAKULTI YANG JAGA |
| 188) kawasan dan bajet |
| 189) Tenaga penggerak yang aktif dari segenap skim perkhidmatan & usahasama bersama pelajar |
| 190) Memupuk inspirasi menghargai alam sekitar dan persekitaran sosial yang bersifat sementara pada diri sendiri namun lestari untuk generasi akan datang |
| 191) Research focus on solar cell and applicable |
| 192) Kewangan dan tenaga kerja |
| 193) Adanya pusat kelastarian alam sekitar |
| 194) Sokongan just daripada Pengurusan Tinggi Universiti. |
| 195) Awareness |
| 196) Pigi |
| 197) Ada technician yang menutup suis aircond pada waktu yang ditetapkan |
| 198) Demi masa depan |
| 199) HEBAHAN |
| 200) Sikap terbuka individu, ilmu pengetahuan tentang kelestarian dan amalan praktikal kelestarian setiap ahli kampus |
| 201) Conscience |
| 202) Pengetahuan dan kemudahan |
| 203) Awareness and dedication of each person to unite and strive for the better environmental needs |
| 204) Kesedaran dan sikap individu masing2 |
| 205) The commitment from top management |
| 206) Self-awareness |
| 207) Good initiatives by the main campus to generate awareness and thorough plan of action with milestones. |
| 208) Funding and platform for research and collaboration |
| 209) Good initiatives by the main campus to generate awareness and thorough plan of action with milestones. |
| 210) Sokongan daripada pihak atasan |
| 211) Good initiatives by the main campus to generate awareness and thorough plan of action with milestones. |
| 212) Place a dedicated staff at each office/faculty to effectively disseminate information and nurture sustainability culture on campus |
| 213) walking, cycling shaded, safe and comfortable facilities, feel of safety. |

| | |
|------|---|
| 214) | Part of working processes |
| 215) | people with high interest |
| 216) | Healthy Lifestyle |
| 217) | The advantage is with the helping hand from the Faculty of Civil Engineering and Architecture would be a great combination. |
| 218) | Readiness and awareness of students/ staffs, good industry-university relationships and regular sustainable activities/ promotions. |
| 219) | More decoration on each attraction |
| 220) | Proactive involvement among the initiators, staff and communities |
| 221) | Sokongan drp pengurusan uitm dan komitmen staff |
| 222) | Sokongan barisan Pengurusan UiTM. |
| 223) | Bajet Dan pihak pengurusan |
| 224) | kempen dan pameran berterusan |
| 225) | Presentation kampus |
| 226) | Perancangan penggunaan infra |
| 227) | kerjasama, love hijau awareness , pegangan |
| 228) | awareness among the staff and the students |
| 229) | The academics and management staff are adamant in these issues and are acting as drivers to make these practices a reality. |

4.0 Design (12, 19)

Statistics

| | Significant level of research directly on sustainability is conducted. | Significant research funding is allocated to sustainability. | Student research opportunities in sustainability are offered. | An institute(s) focusing on researching/teaching sustainability exists. | A collaboration with industries to create a better sustainability direction. | Living laboratory should be encourage in overcoming a growing and emerging sustainability challenges. |
|------------------------|--|--|---|---|--|---|
| Skewness | -0.952 | -0.810 | -0.868 | -1.086 | -1.418 | -1.524 |
| Std. Error of Skewness | .081 | .081 | .081 | .081 | .081 | .081 |
| Kurtosis | .323 | -.059 | .007 | .772 | 1.907 | 2.564 |
| Std. Error of Kurtosis | .161 | .161 | .161 | .161 | .161 | .161 |

Table 4.1: Significant level of research directly on sustainability is conducted

Significant level of research directly on sustainability is conducted.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 85 | 9.2 | 9.2 | 9.2 |
| | Strongly Disagree | 24 | 2.6 | 2.6 | 11.9 |
| | Disagree | 83 | 9.0 | 9.0 | 20.9 |
| | Either Agree Nor Disagree | 259 | 28.2 | 28.2 | 49.1 |
| | Agree | 310 | 33.7 | 33.7 | 82.8 |
| | Strongly Agree | 158 | 17.2 | 17.2 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 4.2: Significant research funding is allocated to sustainability

Student research opportunities in sustainability are offered.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 95 | 10.3 | 10.3 | 10.3 |
| | Strongly Disagree | 31 | 3.4 | 3.4 | 13.7 |
| | Disagree | 85 | 9.2 | 9.2 | 23.0 |
| | Either Agree Nor Disagree | 251 | 27.3 | 27.3 | 50.3 |
| | Agree | 290 | 31.6 | 31.6 | 81.8 |
| | Strongly Agree | 167 | 18.2 | 18.2 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 4.3: Student research opportunities in sustainability are offered

Student research opportunities in sustainability are offered.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 95 | 10.3 | 10.3 | 10.3 |
| | Strongly Disagree | 31 | 3.4 | 3.4 | 13.7 |
| | Disagree | 85 | 9.2 | 9.2 | 23.0 |
| | Either Agree Nor Disagree | 251 | 27.3 | 27.3 | 50.3 |

| | | | | |
|----------------|-----|-------|-------|-------|
| Agree | 290 | 31.6 | 31.6 | 81.8 |
| Strongly Agree | 167 | 18.2 | 18.2 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 4.4: An institute(s) focusing on researching/teaching sustainability exists

A collaboration with industries to create a better sustainability direction.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 48 | 5.2 | 5.2 | 5.2 |
| Strongly Disagree | 17 | 1.8 | 1.8 | 7.1 |
| Disagree | 43 | 4.7 | 4.7 | 11.8 |
| Either Agree Nor Disagree | 173 | 18.8 | 18.8 | 30.6 |
| Agree | 374 | 40.7 | 40.7 | 71.3 |
| Strongly Agree | 264 | 28.7 | 28.7 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 4.5: A collaboration with industries to create a better sustainability direction

A collaboration with industries to create a better sustainability direction.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 48 | 5.2 | 5.2 | 5.2 |
| Strongly Disagree | 17 | 1.8 | 1.8 | 7.1 |
| Disagree | 43 | 4.7 | 4.7 | 11.8 |
| Either Agree Nor Disagree | 173 | 18.8 | 18.8 | 30.6 |
| Agree | 374 | 40.7 | 40.7 | 71.3 |
| Strongly Agree | 264 | 28.7 | 28.7 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 4.6: Living laboratory should be encouraging in overcoming a growing and emerging sustainability challenges

Living laboratory should be encourage in overcoming a growing and emerging sustainability challenges.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--------------------|-----------|---------|---------------|--------------------|
| Valid No Knowledge | 42 | 4.6 | 4.6 | 4.6 |

| | | | | |
|---------------------------|-----|-------|-------|-------|
| Strongly Disagree | 14 | 1.5 | 1.5 | 6.1 |
| Disagree | 27 | 2.9 | 2.9 | 9.0 |
| Either Agree Nor Disagree | 183 | 19.9 | 19.9 | 28.9 |
| Agree | 381 | 41.5 | 41.5 | 70.4 |
| Strongly Agree | 272 | 29.6 | 29.6 | 100.0 |
| Total | 919 | 100.0 | 100.0 | |

Table 4.7 indicates 919 different answers from respondents when they were asked to indicate factors accounting for resistance to or lack of responsiveness to these concerns.

| |
|---|
| 1) Awareness |
| 2) Awareness |
| 3) Awareness |
| 4) Renewable energy projects |
| 5) Less care of Foreign students |
| 6) top management initiative |
| 7) Action plans need to demonstrate to reduce the university's environmental footprint and to improve the environmental performance |
| 8) Budget constraints |
| 9) No push factors |
| 10) Frequent implementation |
| 11) Budget allocation |
| 12) Funding issues. |
| 13) Institutional policies |
| 14) Less support |
| 15) More grass and tree. |
| 16) Habit and not becoming a culture yet |
| 17) Lack of information |
| 18) AWARENESS |
| 19) Lack of information |
| 20) Working individual |
| 21) Implementation of policy |
| 22) Enforcement
Seriousness of assigning someone to carry out the task, no proper token/ salary given to them |
| 23) Mandatory |
| 24) Poor knowledge |
| 25) PENGURUSAN KERJA |
| 26) The efficiency of following up towards every comments given by users |
| 27) Promotion on awareness as well as lacking of sustainable focused researches. |
| 28) Efficiency comment from user |
| 29) It maybe due to lack of information/did not bother to take part on certain issues |
| 30) Public, staff and students lack of support on sustainability matter |
| 31) Lack of awareness and urgency of the problem |

| |
|---|
| 32) No knowledge |
| 33) "don't care" |
| 34) The responsibility |
| 35) Usual habits/ culture and lack of awareness |
| 36) Leadership |
| 37) Major resistance is funding |
| 38) Increased workload |
| 39) no awareness |
| 40) tiada campaign |
| 41) no awareness |
| 42) no understanding |
| 43) no knowledge |
| 44) lack of sufficient progress |
| 45) policies and global institutional arrangements are still lacking |
| 46) Leadership |
| 47) Fund |
| 48) knowledge |
| 49) Lack of knowledge |
| 50) Fund |
| 51) Lack of knowledge |
| 52) No Concerns |
| 53) No fund |
| 54) No fund |
| 55) No knowledge |
| 56) Lack of knowledge |
| 57) Awareness ; Mindfulness on sustainability |
| 58) lack of awareness, knowledge and information |
| 59) money |
| 60) Fund |
| 61) sustainable management of water and sanitation. |
| 62) No fund |
| 63) Lack of cooperation from all i.e. management & administrative level, staff and students. |
| 64) Funding (economical) and consultation |
| 65) awareness |
| 66) Lack of awareness |
| 67) Budget and covid 19 |
| 68) Lack of funding |
| 69) Fund |
| 70) Not aware of it. |
| 71) Can't be bothered attitude, laziness, indifference |
| 72) Tahap pengetahuan dan pemahaman mengenai isu ini. |
| 73) STAFF AND PASSION |
| 74) Sustainability of living planet is often seen as "not my problem" or not "benefiting me", even for STEM community who work in these fields. Knowledge of physical Earth and how the biosphere supports life in delicate balance should be transmitted through |

| |
|---|
| various outreach program, so that we understand the importance of sustaining our critical zone before the tipping point. Sustainability must be made the new norm. |
| 75) Setiap inisiatif ada pros & cons. Contohnya spt pemasangan solar panel. Walaupun ia adalah sustainable namun kos pemasangan dan penyelenggaraan mungkin faktor non-sustainablenya. |
| 76) Commitment from management |
| 77) Kekangan insentif kewangan |
| 78) Sikap dan tanggungjawab |
| 79) Ignorance and unawareness. |
| 80) Bad habit of do not change |
| 81) Tidak ambil kisah |
| 82) Kurang pendedahan dan penerangan yg lebih jelas |
| 83) Kurang peka |
| 84) people takes things for granted |
| 85) Kurang oerlaksanaan secara menyeluruh dan kurang keyakinan dalam.kalangan warga kampus. |
| 86) time management of other staff, lack of marketing |
| 87) Lack of awareness on the sustainability |
| 88) no support from to admin |
| 89) Lack of funding to support the activities for sustainability on campus |
| 90) out of KPI to apply sustainability |
| 91) Lack of funding for sustainability, energy efficiency, environmental projects. More emphasis given to community engagement right now. Existing ISO processes do not include sustainability consideration. |
| 92) kurang kesedaran di pihak pengurusan universiti dan warga kerja, masalah belanjawan |
| 93) Human factors |
| 94) lack of awareness on global climate change |
| 95) no enforcement |
| 96) Monetary factors |
| 97) Changing our norms can be troublesome. |
| 98) Kekangan masa dan kewangan. |
| 99) kurangnya kesedaran sivik |
| 100) Kesepaduan atau kesepakatan dalam menjayakan kelestarian |
| 101) Lack awareness programm |
| 102) Limited awareness and recognition for sustainable issues and goals. |
| 103) Lack of compelling factors to encourage/motivate the campus community to support sustainability activities |
| 104) Workload to take part in extra activities, fundings cut short, disappointment in previous projects, non-sustainable, lack of resilience over time, |
| 105) Personal awareness and attitude towards environment |
| 106) Prioriti kepada kepentingan diri berorientasikan fahaman materialis (kebendaan) dan kapitalis (keuntungan). |
| 107) Selfishness of individuals, laziness, apathy |
| 108) Not enough awareness |
| 109) Awareness |
| 110) Funding |
| 111) Lack of knowledge and information on this matter |

| |
|--|
| 112) NO CLEAR DIRECTION |
| 113) Don't really understand the objective of sustainability |
| 114) NO INCENTIVES |
| 115) Time and energy |
| 116) It should be surveyed to get a proper valid result. |
| 117) people not aware of it and dont have knowledge about how to sustain the environment. |
| 118) Dont care attitude (most) |
| 119) SUMBANGAN & SEDEKAH |
| 120) no understanding |
| 121) Kekurangan pengenalan |
| 122) ignorance |
| 123) Kekangan kewangan. |
| 124) budget |
| 125) kewangan |
| 126) persepsi yang pelbagai |
| 127) Komitmen, kesedaran dn rewards |
| 128) kesedaran masyarakat |
| 129) Lack of awareness and individuals' attitudes. |
| 130) Kurang kempen kesedaran tentang kelestarian kerana buat masa ini secara amnya persekitaran kampus di Sintok berkeadaan baik |
| 131) Lack of sustainability knowledge among staff and students |
| 132) information |
| 133) Kejahilan |
| 134) It is not compulsory to answer. |
| 135) kurang kesedaran |
| 136) kurang pengetahuan dan kesedaran terhadap kepentingan alam dalam kehidupan |
| 137) sikap dan kesedaran yang kurang |
| 138) Kurang aktiviti dan kenpwn 2 kesedaran |
| 139) Life style |
| 140) KPI. No KPI or little emphasis on eco on KPI |
| 141) ignorance and lack of commitment from top management - more interested in ranking than environment |
| 142) Kurang kesedaran |
| 143) Lack of awareness and ignorance |
| 144) TIDAK MEMBUDAYAKAN KELESTARIAN |
| 145) penglibatan dalam satu tempat aktiviti dan hasilan daya kreatif dan inovatif. |
| 146) No money |
| 147) awareness, irresponsible, education |
| |
| 148) kurang peruntukan dan struktur organisasi lestari yang tidak kukuh |
| 149) Lack of awareness among the academic staffs on the sustainability issues. |
| 150) Kurang kempen kesedaran dan galakan moral |
| 151) Tidak ada maklumat atau sokongan dari semua pihak yang terlibat.. Hanya pihak pihak tertentu sahaja yang terlibat |

| |
|--|
| 152) Selfishness |
| 153) Lack of civil mindedness among individuals. |
| 154) Unaware of the importance of sustainability |
| 155) Awareness |
| 156) Sikap manusia yang memandang remeh usaha yang dibuat. |
| 157) Budget |
| 158) cost/budget |
| 159) Pandangan peribadi yang tidak mahu berubah |
| 160) Interest or enculturation |
| 161) Lack of understanding and commitment |
| 162) lack of fund, awareness, infrastructure |
| 163) no budget to run...thing don't get done because someone thinks it is good |
| 164) not much advertisement on how the public (staff , students) can actually participate/contribute other than sending plastic bottles, newspapers, old clothes for recycle. |
| 165) not in my KPI. |
| 166) kurang kesedaran |
| 167) Ketidakhahaman objektif, tidak ada kerjasama sebab kurang penglibatan. |
| 168) high installation cost for equipment related to sustainability, high maintenance cost |
| 169) tiada sokongan pihak pengurusan universiti dan ketua-ketua jabatan. |
| 170) Pihak majikan tidak menitik berat kan soal kelestarian kepada staf |
| 171) lack of knowledge and awareness |
| 172) Isu kelestarian tidak popular |
| 173) Faktor kurang galakkan dan kekurangan sumber |
| 174) Sometimes, some sustainability practices may cause some inconvenience. People cannot see that there are sustainability practices going on and if just a small minority who are practising it, then it may not be impactful and people will then go back to old ways which is more convenient. People are not convinced that sustainability practices benefit them in any way. |
| 175) people don't aware |
| 176) TIADA PENGETAHUAN |
| 177) Lack of knowledge and awareness |
| 178) old staff sometimes not aware |
| 179) Menambah beban kerja dan kebaikan yang bakal diperolehi tidak di war-warkan |
| 180) Hala tuju kurang jelas |
| 181) Political differences |
| 182) Less awareness |
| 183) Sikap individu |
| 184) Soalan survey ini terlalu banyak. Ini adalah typical situation di mana researcher agak selfish/tamak kerana cuba mendapatkan terlalu byk maklumat drpd awam, tanpa cuba meringkaskan dan memudahkan org awam utk menjawab. You may get the quantity, but the quality maybe in doubt. Saya hanya menjawab separuh soalan dgn jujur, selebihnya hanya menjawab secara rambang. |
| 185) Complacent |
| 186) lack of sustainable culture |
| 187) Kurang pendedahan |
| 188) Personal mentality |

| |
|--|
| 189) Lack of knowledge |
| 190) Kesedaran di peringkat kakitangan sokongan |
| 191) KURANG PASTI |
| 192) Kurang kesedaran/ kefahaman |
| 193) Kesedaran dan komitmen warga kampus yang kurang prihatin |
| 194) Funding and information |
| 195) Staf sibuk dengan tugas masing2 |
| 196) Kurang kesedaran |
| 197) Kesedaran Staf dan sikap tidak ambil peduli. |
| 198) Ignorance |
| 199) Apa tu |
| 200) Kurang program kesedaran kepada staf dan hanya peringkat tertentu yang terlibat |
| 201) Kurang kesedaran |
| 202) TIADA PENGETAHUAN MENGENAI KEPENTINGAN MENJAGA KELESTARIAN ALAM SEKITAR KHAS NYA |
| 203) 1-Pematuhan Peraturan kelestarian.
2-Pemberitahuan tentang kelestarian tidak sampai kepada kumpulan sasaran
3-Amalan kelestarian masih rendah dikalangan komuniti |
| 204) Lack of formal appreciation to sustainability linked efforts. |
| 205) Kurang promosi dan peruntukan untuk menyediakan kemudahan dan menganjurkan program |
| 206) not enough knowledge and implication |
| 207) Problem of adjustment and economic reason |
| 208) General antipathy and NIMBY (Not In My Backyard) |
| 209) Support from university top management and ministry of higher education |
| 210) General antipathy and NIMBY (Not In My Backyard) |
| 211) Kesedaran yang terhad drpd ahli kampus |
| 212) General antipathy and NIMBY (Not In My Backyard) |
| 213) lack of emphasize during meeting, or face to face interaction. Emails are just not as efficient as face to face interaction. |
| 214) awareness |
| 215) Not part of job scope. Therefore they are not important |
| 216) lack of budget |
| 217) Disobey and Selfish |
| 218) Lack of knowledge & lack of promotion. |
| 219) Lacking of exposure/ knowledge, Less support/ initiatives from top management. |
| 220) If no slogan and poster regarding the environmental in the campus |
| 221) Lack of responsibility attitudes and insufficient guidance |
| 222) Penglibatan semua staf dan pelajar |
| 223) Kurangnya pemahaman dan kesedaran di kalangan pelajar dan staf. |
| 224) Bajet |
| 225) kurang kesedaran |
| 226) No idea |
| 227) awareness tidak rasai sendiri kesan sampingan, seperti sakit dll |
| 228) budget |
| 229) The lack of funds, resources and man-power. |

5.0 Budget (11 Subsection 5)

| Statistics | | |
|------------------------|---|--|
| | Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide. | Funding is the main problem to implement sustainable development initiatives in my campus. |
| Skewness | -1.502 | -1.392 |
| Std. Error of Skewness | .081 | .081 |
| Kurtosis | 2.444 | 1.865 |
| Std. Error of Kurtosis | .161 | .161 |

Table 5.1: Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide

Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------|-----------|---------|---------------|--------------------|
| Valid | No Knowledge | 38 | 4.1 | 4.1 | 4.1 |
| | Strongly Disagree | 8 | .9 | .9 | 5.0 |
| | Disagree | 39 | 4.2 | 4.2 | 9.2 |
| | Either Agree Nor Disagree | 170 | 18.5 | 18.5 | 27.7 |
| | Agree | 326 | 35.5 | 35.5 | 63.2 |
| | Strongly Agree | 338 | 36.8 | 36.8 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

Table 5.2: Funding is the main problem to implement sustainable development initiatives in my campus

Funding is the main problem to implement sustainable development initiatives in my campus.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|--|-----------|---------|---------------|--------------------|
|--|--|-----------|---------|---------------|--------------------|

| | | | | | |
|-------|---------------------------|-----|-------|-------|-------|
| Valid | No Knowledge | 31 | 3.4 | 3.4 | 3.4 |
| | Strongly Disagree | 19 | 2.1 | 2.1 | 5.4 |
| | Disagree | 42 | 4.6 | 4.6 | 10.0 |
| | Either Agree Nor Disagree | 173 | 18.8 | 18.8 | 28.8 |
| | Agree | 282 | 30.7 | 30.7 | 59.5 |
| | Strongly Agree | 372 | 40.5 | 40.5 | 100.0 |
| | Total | 919 | 100.0 | 100.0 | |

6.0 Conclusion

Research Questions:

1. What are the suggestions for university to improve their campus sustainability initiatives in future?
2. What are the awareness factors that influencing sustainability in campus?
3. What are the motivation factors that influencing sustainability in campus?
4. What are the design factors influencing sustainability in campus?
5. Is there any funding opportunity for green building in campus?

Research Objectives

1. To obtain suggestions for university to improve their campus sustainability initiatives in future.
2. To identify the awareness factors that influencing sustainability in campus.
3. To examine the motivation factors that influencing sustainability in campus.
4. To assess the design factors influencing sustainability in campus.
5. To find out funding opportunity for green building in campus.

Research Methodology

This study uses 5-point or 6-point scales to analyse corresponding items in different dimensions. Some open-ended questions are given to participants. Descriptive statistics such as frequency, percentage are used to analyse respondents' response on each item. Normality of data is accessed by skewness and kurtosis. In terms of inferential analysis, structural equation modelling is used to find the fit of model.

Hypotheses

1. There is a relationship between factors of awareness and campus sustainability
2. There is a relationship between factors of motivation and campus sustainability

3. There is a relationship between factors of design and campus sustainability

Results of hypotheses

| No | Hypothesis | Result |
|----|---|-------------|
| 1 | There is a relationship between factors of awareness and campus sustainability | Significant |
| 2 | There is a relationship between factors of motivation and campus sustainability | Significant |
| 3 | There is a relationship between factors of design and campus sustainability | Significant |

Since the fit indices in Table 6.1 were acceptable ($C_{min}/df = 4.633$, $CFI=0.983$, $GFI=0.971$, $AGFI=0.948$, $SRMR=0.0215$, $RMSEA=0.063$, $PCLOSE=0.019$), a model that fit our empirical data is identified. This model allowed us to graphically view the inferred causal relationships between awareness, motivation, and design dimensions.

The graph in Figure 6.1 was generated using IBM SPSS Amos and illustrates the findings of the sustainability for university campus. The squares represent the questions, or items, asked during the survey phase (e.g., item No131 asked “Provides students with sustainable accommodation”) and are also known as observed variables. The ovals represent the latent (non-observed) variables, also described as constructs or dimensions. It is important to note that the ovals are not actual variables. Rather, they are factors defined by the observed variables (rectangles).

The 4 items in Awareness dimension are “131- Provides students with sustainable accommodation”, “132- Provides students with environmental sustainability practice facilities”, “133- Establish student groups with a focus on sustainability”, “134- Encourage student groups to participate in sustainability initiatives” and “135- Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises”

Motivation dimension has 2 items which are positively and significantly correlated. The 2 items are “141- Security within the campus” and “142- Provide adequate access to people with disability.”

Design dimension comprise of 3 items which are “122- Significant research funding is allocated to sustainability.”, “124- An institute(s) focusing on researching/teaching sustainability exists.” and “125-A collaboration with industries to create a better sustainability direction”.

Figure 6.1 shows that all observed variables are having high factor loadings (>0.4) towards their latent variables which means the predictors are valid. The figures in Figure 6.1 and Table

6.2 show that awareness, motivation and design are significantly and positively correlated to each other. Awareness and design has stronger relationship (0.626) compared to awareness to motivation (0.523). Motivation has positive and significant relationship with design as well (0.480).

Items for Governance dimension is in open-ended format. Thus, Governance is not included in this model. Regarding Budget dimension, it is not included in the model testing because the dimension only has 1 item.

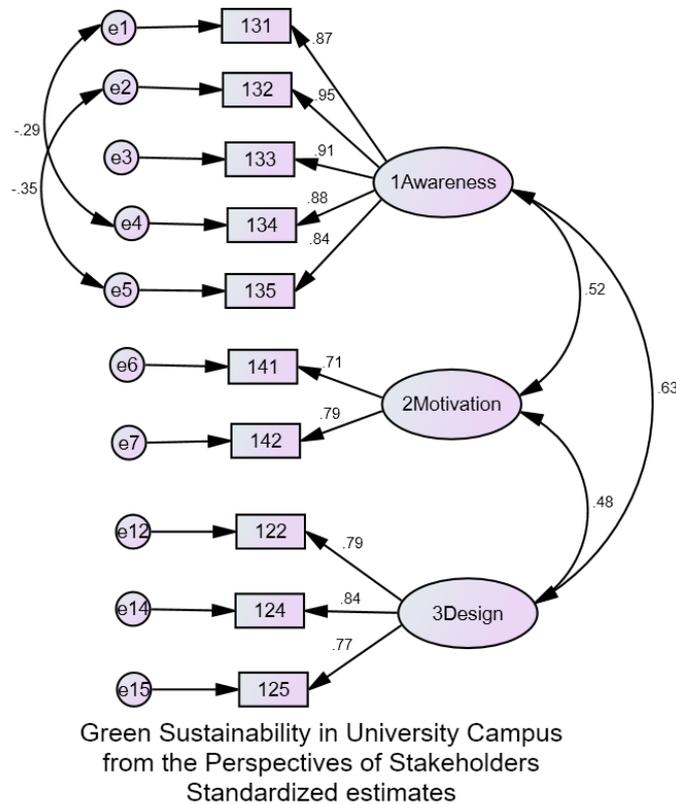
Looking at the response scale for the 5 items of awareness dimensions, respective authorities can consider doing some initiatives to improve awareness of public due to the high percentage of “no knowledge”, “strongly disagree”, “disagree” and “neutral” rating. Item 131 is 36.8%, Item 132 is 33.5%, item 133 is 35.7%, item 134 is 26.1% and item 135 is 35.4%.

Looking at the response scale for the 2 items of motivation dimensions, respective authorities have done quite good at sustainability motivation. Low percentage of “no knowledge”, “strongly disagree”, “disagree” and “neutral” rating are seen on these two items. Item 141 is 22.9% and item 142 is 26.4%.

Looking at the response scale for the 3 items of design dimensions, respective authorities can consider doing some initiatives to improve design perception of public due to the high percentage of “no knowledge”, “strongly disagree”, “disagree” and “neutral” rating. Item 122 is 54.0%, Item 124 is 43.1% and item 125 is 30.6%.

Appendix

Figure 6.1: Model Fitness



Legend:

- 131: Provides students with sustainable accommodation.
- 132: Provides students with environmental sustainability practice facilities.
- 133: Establish student groups with a focus on sustainability.
- 134: Encourage student groups to participate in sustainability initiatives.
- 135: Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises.
- 141: Security within the campus.
- 142: Provide adequate access to people with disability.
- 122: Significant research funding is allocated to sustainability.
- 124: An institute(s) focusing on researching/teaching sustainability exists.
- 125: A collaboration with industries to create a better sustainability direction.

Table 6.1: Model Fit Summary

CMIN

| Model | NPAR | CMIN | DF | P | CMIN/DF |
|--------------------|------|----------|----|------|--------------|
| Default model | 24 | 143.632 | 31 | .000 | 4.633 |
| Saturated model | 55 | .000 | 0 | | |
| Independence model | 10 | 6740.329 | 45 | .000 | 149.785 |

RMR, GFI

| Model | RMR | GFI | AGFI | PGFI |
|--------------------|------|-------------|-------------|------|
| Default model | .040 | .971 | .948 | .547 |
| Saturated model | .000 | 1.000 | | |
| Independence model | .764 | .286 | .127 | .234 |

Baseline Comparisons

| Model | NFI
Delta1 | RFI
rho1 | IFI
Delta2 | TLI
rho2 | CFI |
|--------------------|---------------|-------------|---------------|-------------|-------------|
| Default model | .979 | .969 | .983 | .976 | .983 |
| Saturated model | 1.000 | | 1.000 | | 1.000 |
| Independence model | .000 | .000 | .000 | .000 | .000 |

Parsimony-Adjusted Measures

| Model | PRATIO | PNFI | PCFI |
|--------------------|--------|------|------|
| Default model | .689 | .674 | .677 |
| Saturated model | .000 | .000 | .000 |
| Independence model | 1.000 | .000 | .000 |

NCP

| Model | NCP | LO 90 | HI 90 |
|--------------------|----------|----------|----------|
| Default model | 112.632 | 79.096 | 153.709 |
| Saturated model | .000 | .000 | .000 |
| Independence model | 6695.329 | 6428.852 | 6968.095 |

FMIN

| Model | FMIN | F0 | LO 90 | HI 90 |
|-----------------|------|------|-------|-------|
| Default model | .156 | .123 | .086 | .167 |
| Saturated model | .000 | .000 | .000 | .000 |

| Model | FMIN | F0 | LO 90 | HI 90 |
|--------------------|-------|-------|-------|-------|
| Independence model | 7.342 | 7.293 | 7.003 | 7.591 |

RMSEA

| Model | RMSEA | LO 90 | HI 90 | PCLOSE |
|--------------------|-------------|-------|-------|-------------|
| Default model | .063 | .053 | .073 | .019 |
| Independence model | .403 | .394 | .411 | .000 |

AIC

| Model | AIC | BCC | BIC | CAIC |
|--------------------|----------|----------|----------|----------|
| Default model | 191.632 | 192.214 | 307.391 | 331.391 |
| Saturated model | 110.000 | 111.334 | 375.281 | 430.281 |
| Independence model | 6760.329 | 6760.571 | 6808.562 | 6818.562 |

ECVI

| Model | ECVI | LO 90 | HI 90 | MECVI |
|--------------------|-------|-------|-------|-------|
| Default model | .209 | .172 | .253 | .209 |
| Saturated model | .120 | .120 | .120 | .121 |
| Independence model | 7.364 | 7.074 | 7.661 | 7.364 |

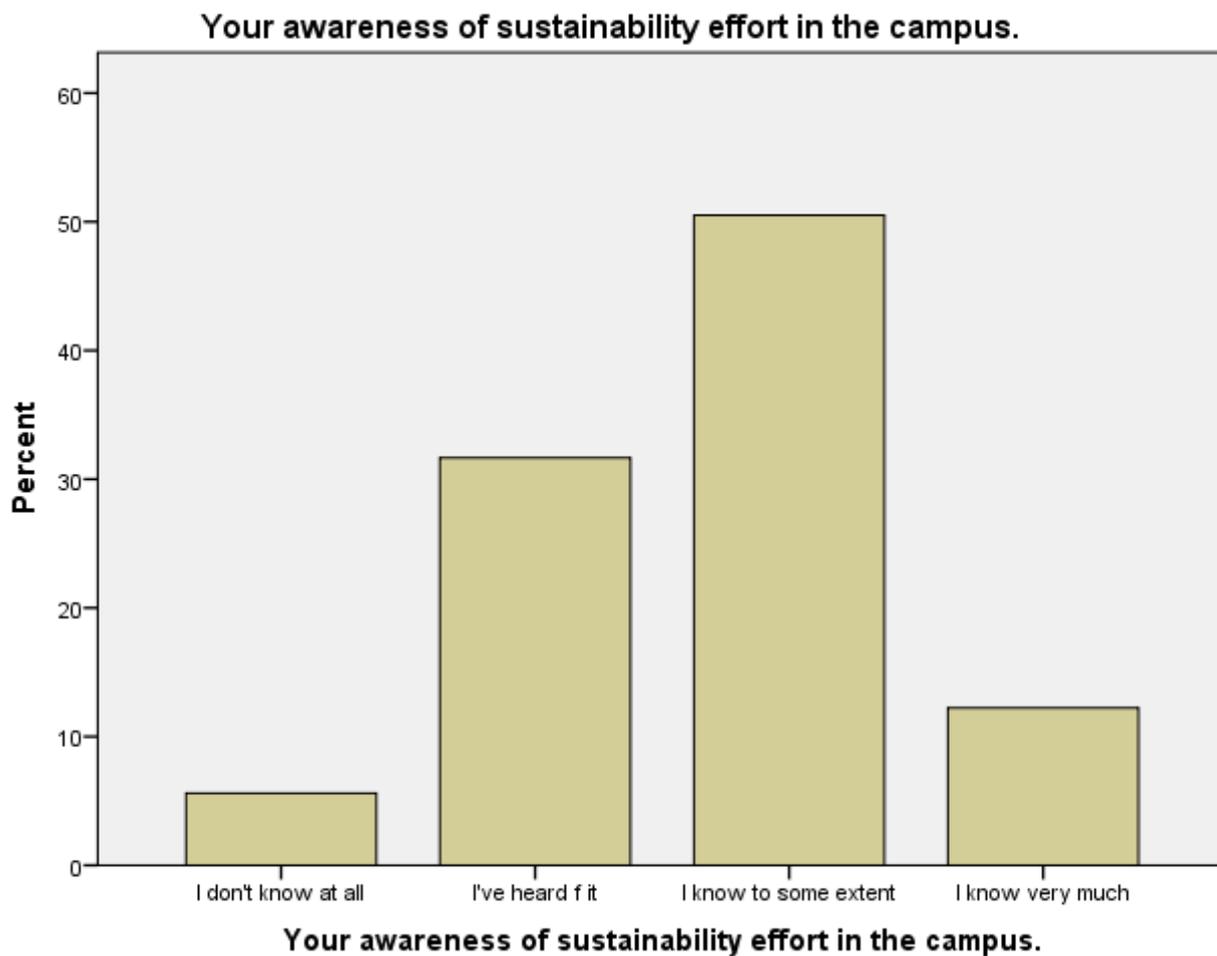
HOELTER

| Model | HOELTER
.05 | HOELTER
.01 |
|--------------------|----------------|----------------|
| Default model | 288 | 334 |
| Independence model | 9 | 10 |

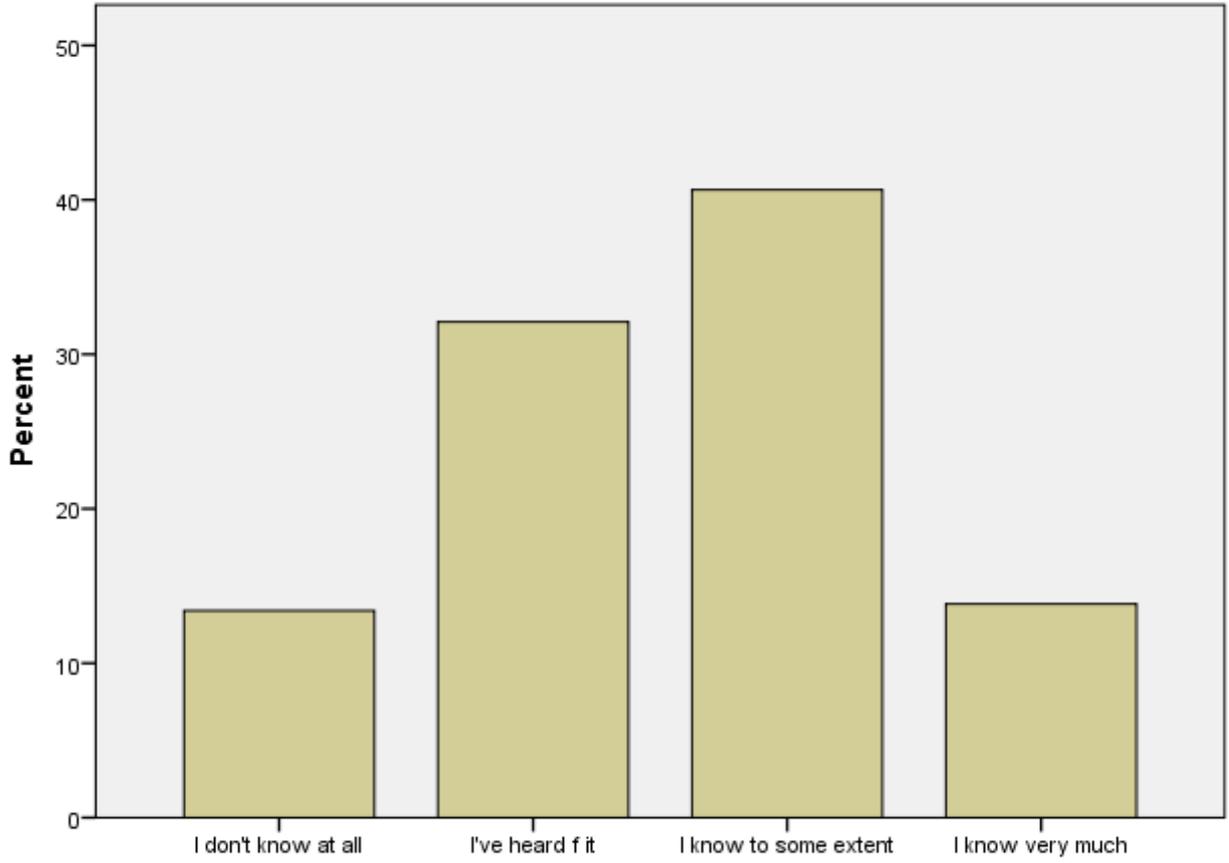
Table 6.2: Correlations: (Group number 1 - Default model)

| | Estimate |
|-----------------------------|----------|
| 1Awareness <--> 2Motivation | .523 |
| 1Awareness <--> 3Design | .626 |
| 2Motivation <--> 3Design | .480 |
| e4 <--> e1 | -.295 |
| e5 <--> e2 | -.352 |

Figures of scale distributions for all individual items

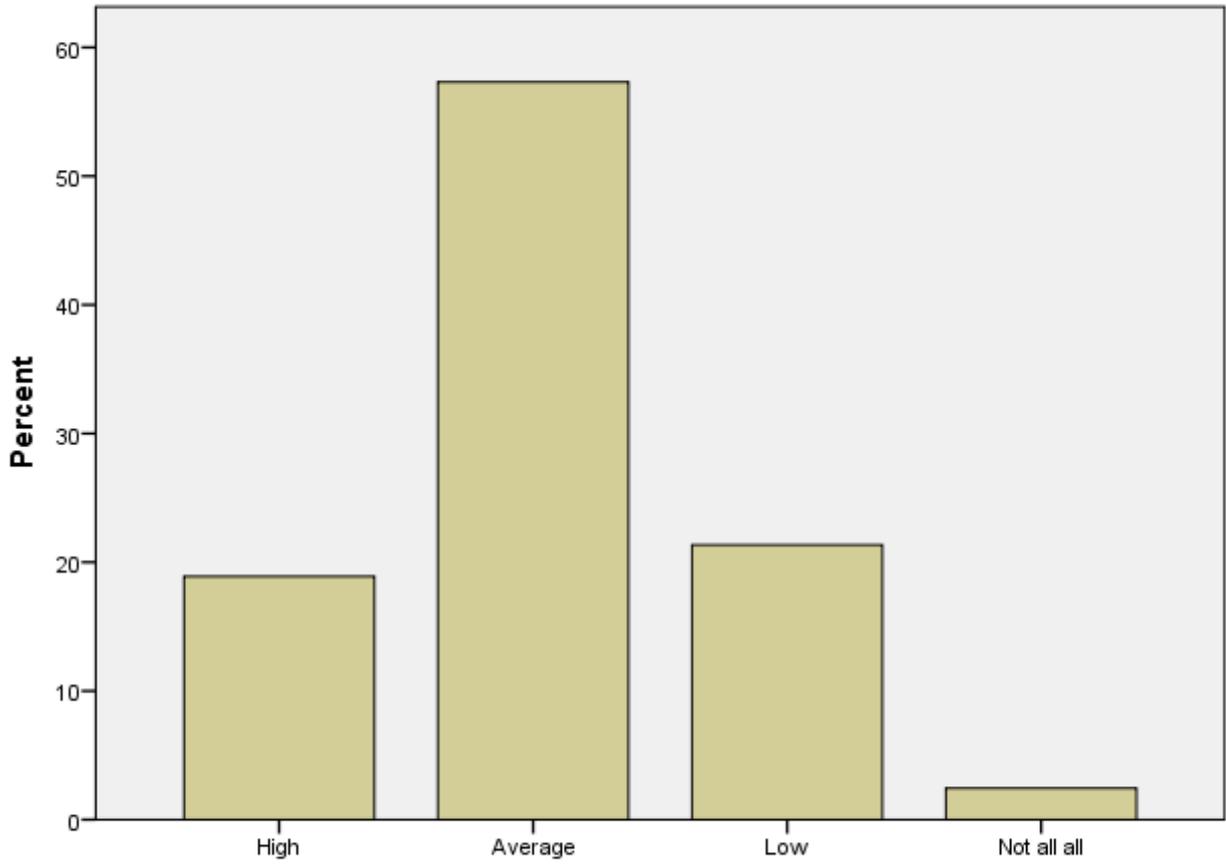


Your awareness of specific office for sustainability in the campus.



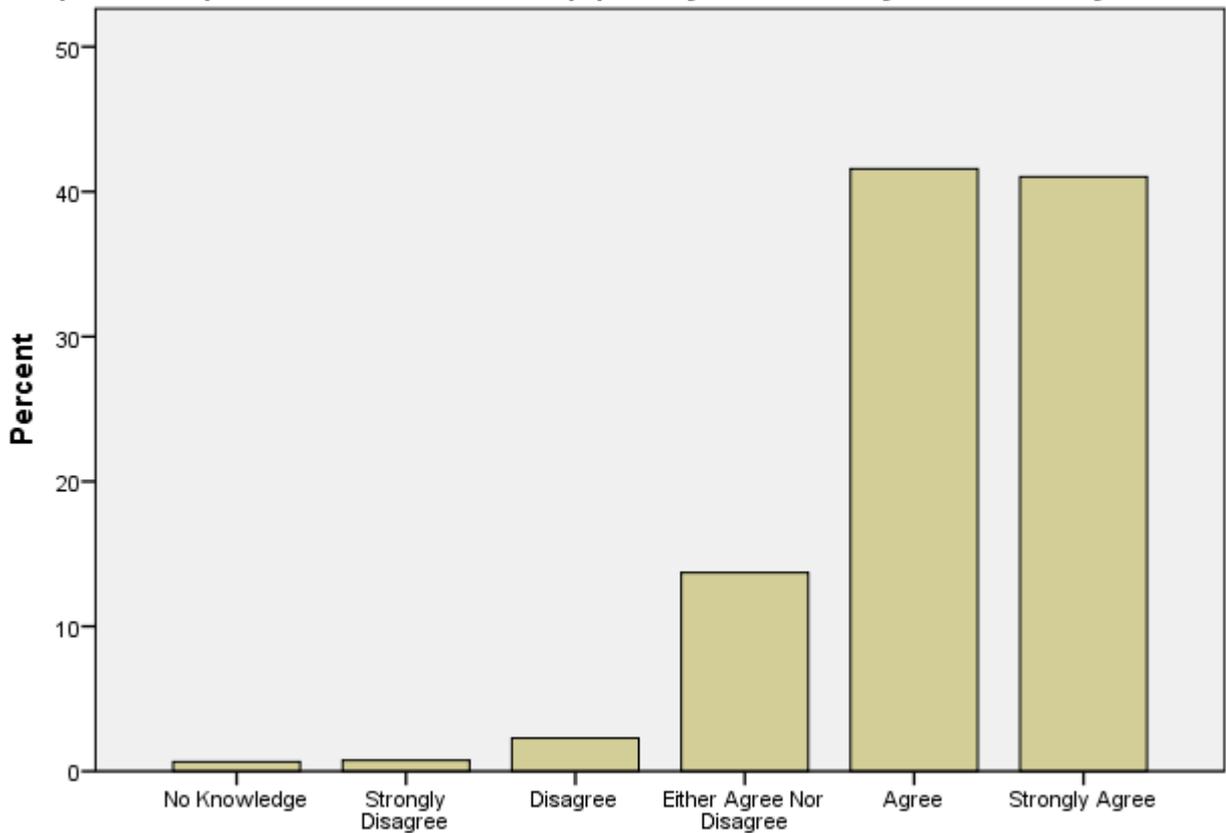
Your awareness of specific office for sustainability in the campus.

Your participation opportunity for sustainability.



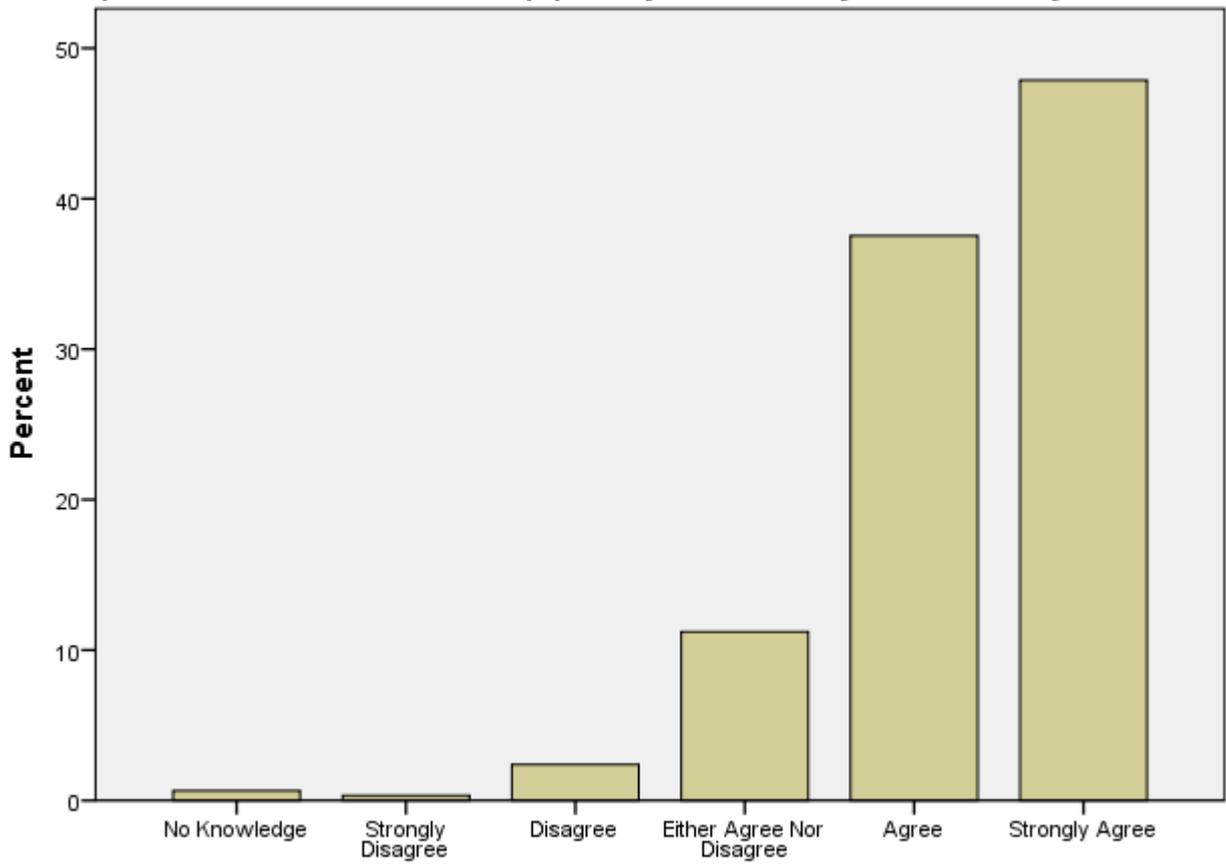
Your participation opportunity for sustainability.

Campus transportation should be a top priority in university sustainability issues.



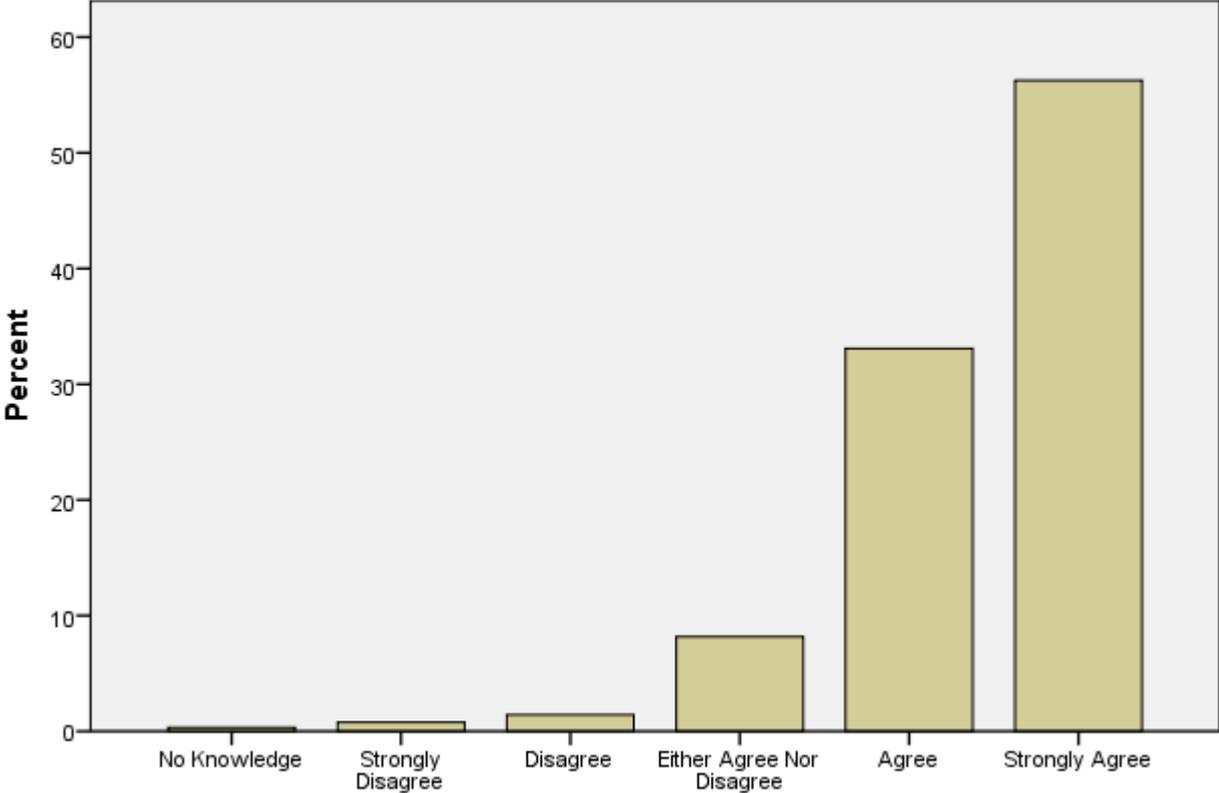
Campus transportation should be a top priority in university sustainability issues.

Campus land-use should be a top priority in university sustainability issues.



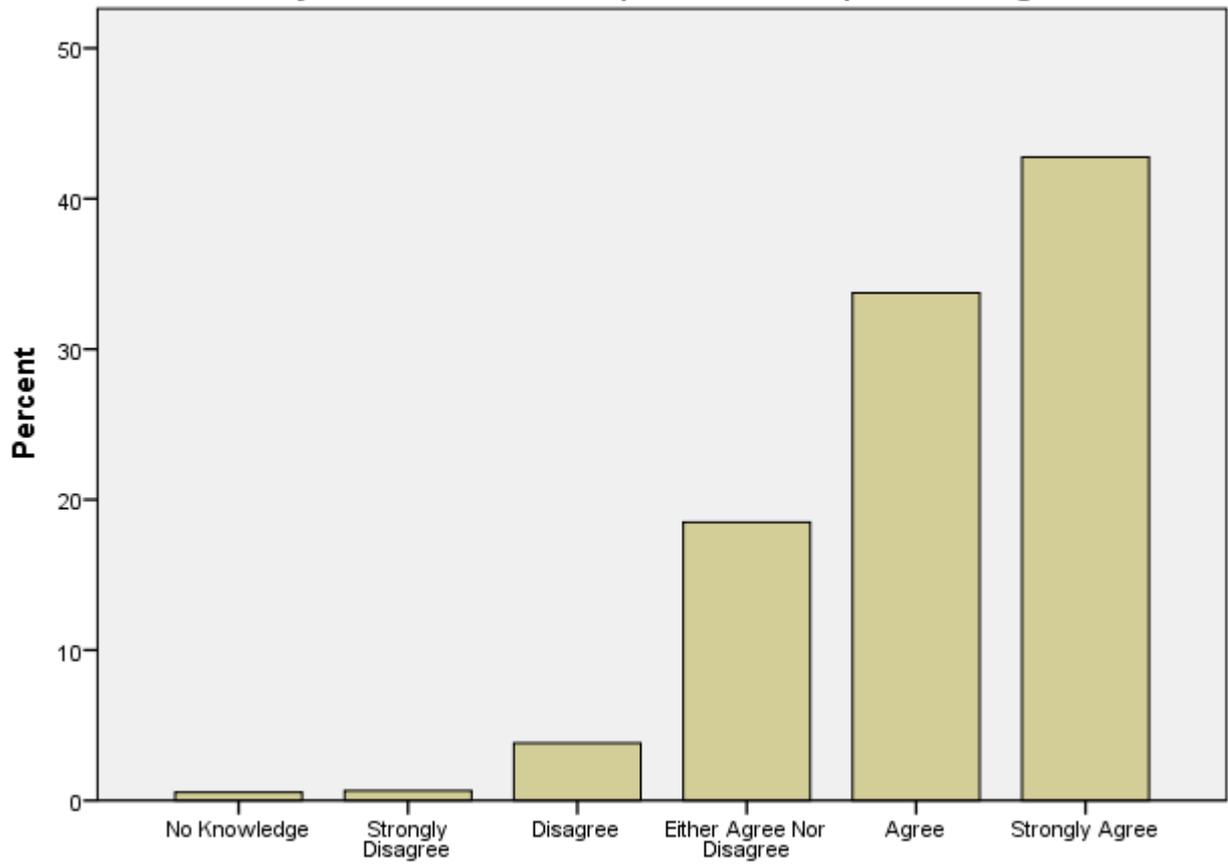
Campus land-use should be a top priority in university sustainability issues.

Campus building planning should be a top priority in university sustainability issues.



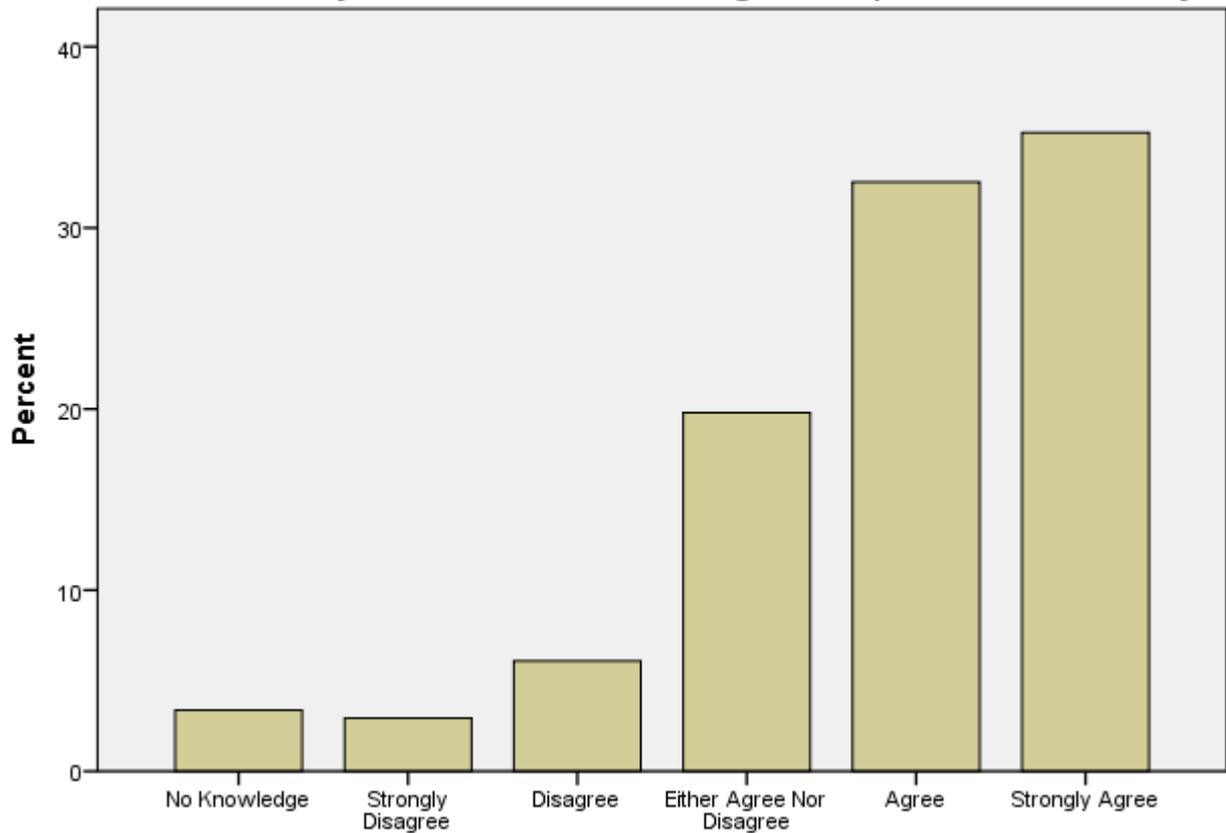
Campus building planning should be a top priority in university sustainability issues.

University should install solar panels on campus buildings.



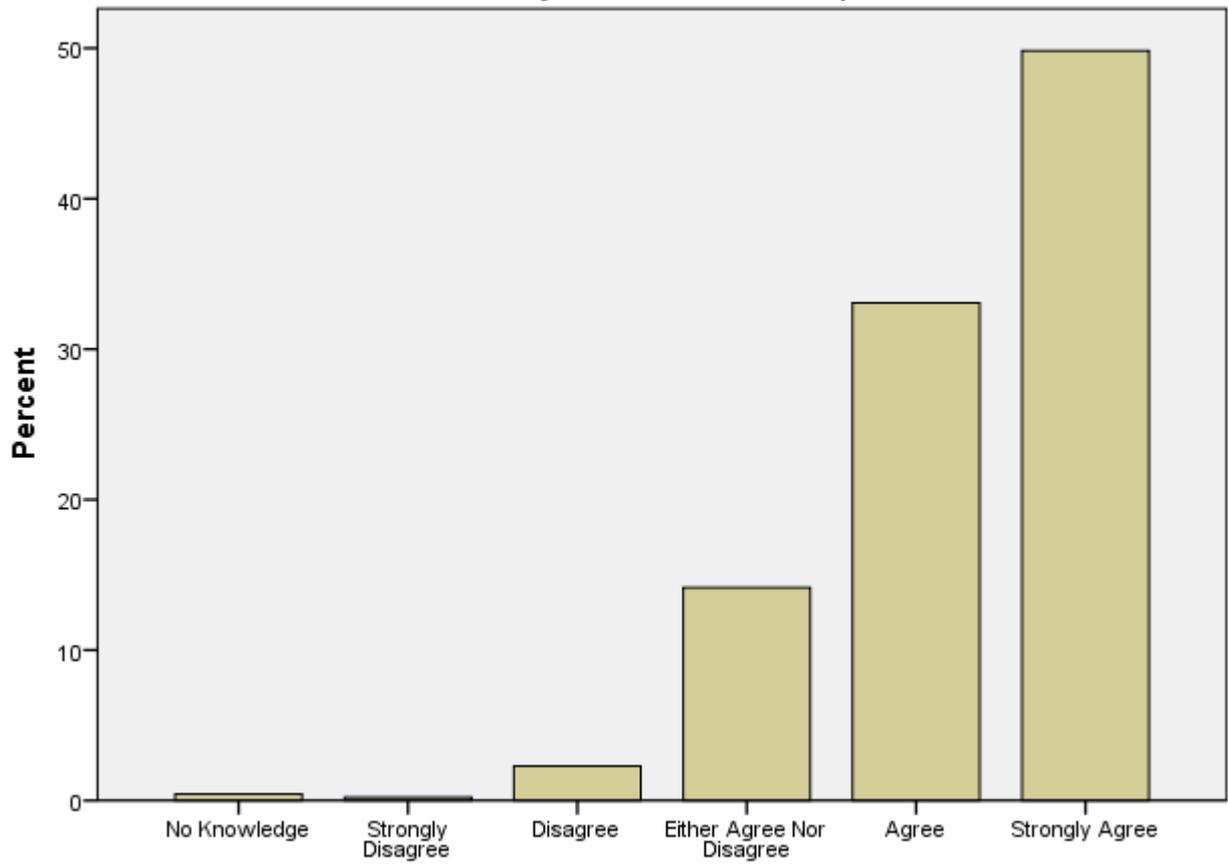
University should install solar panels on campus buildings.

Sustainable university should reduce the ecological footprint of the university.



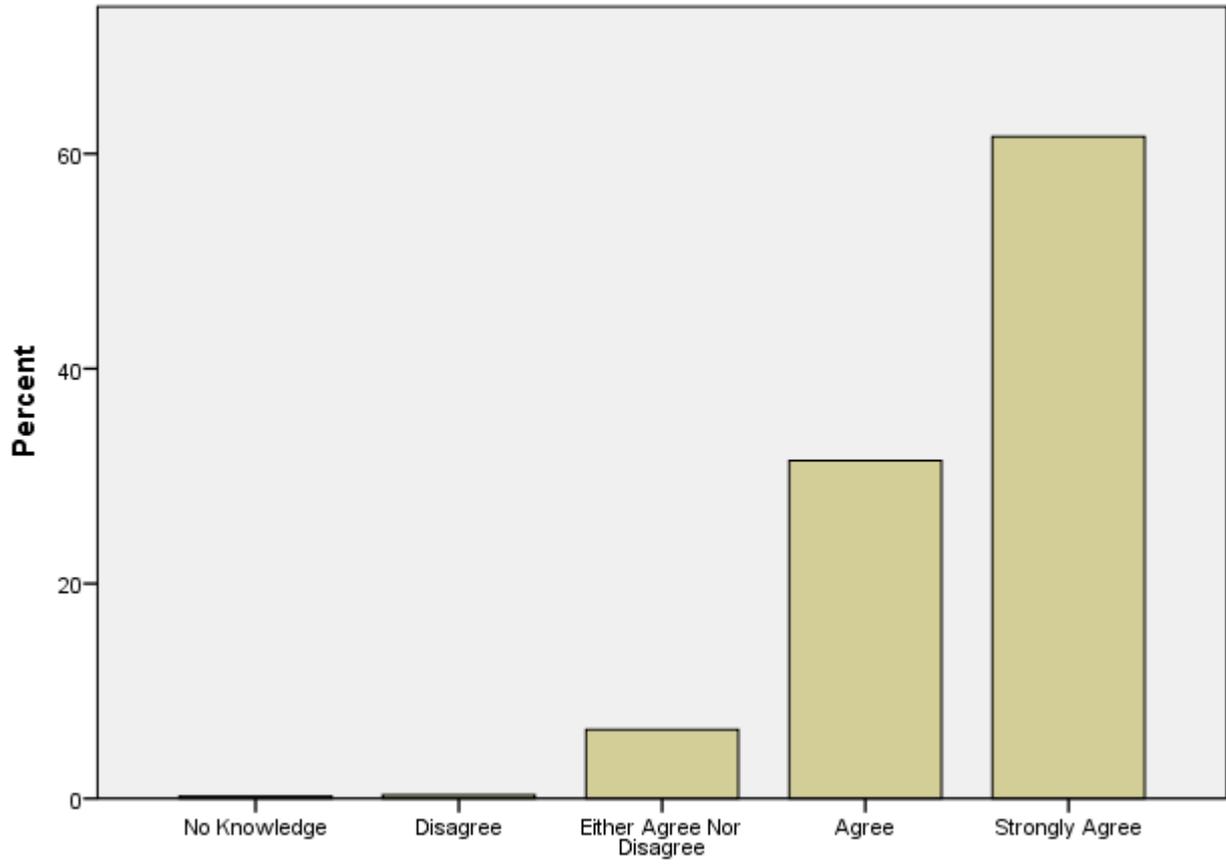
Sustainable university should reduce the ecological footprint of the university.

Sustainable university should reuse campus waste.



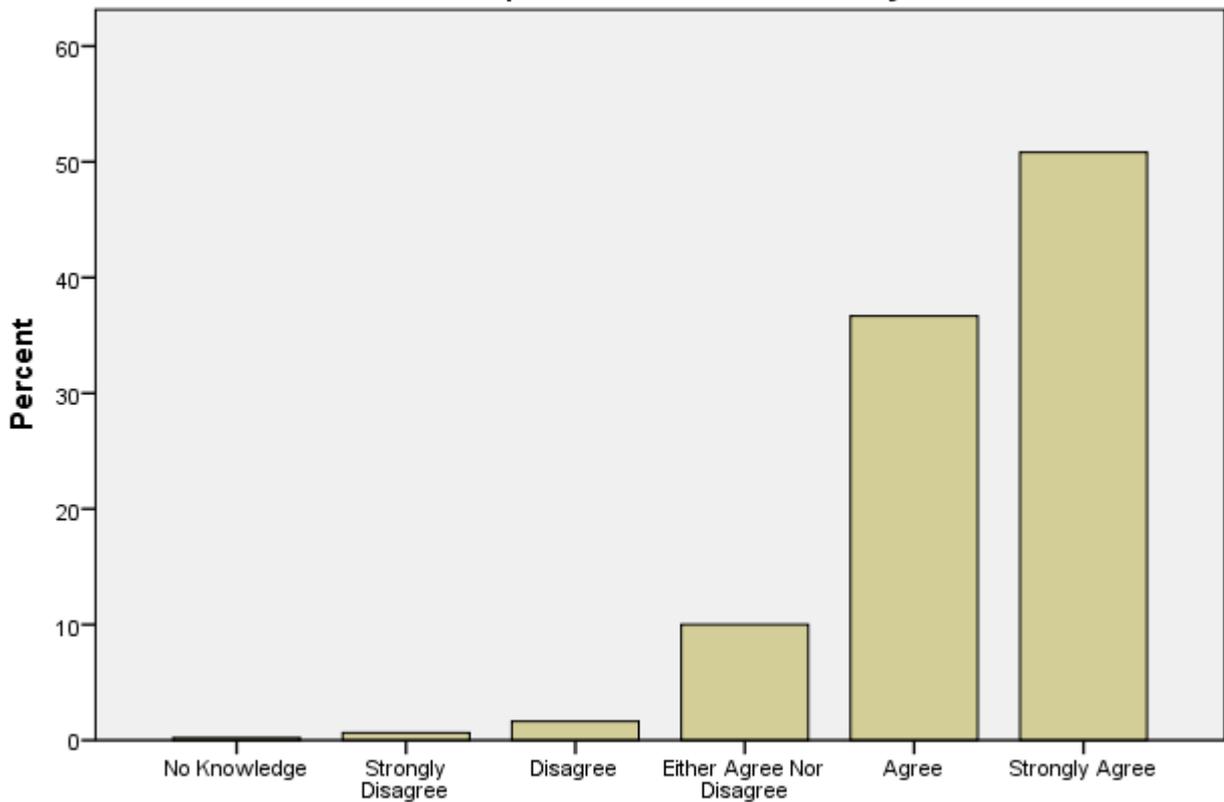
Sustainable university should reuse campus waste.

Sustainable university should use renewable and safe energy sources.



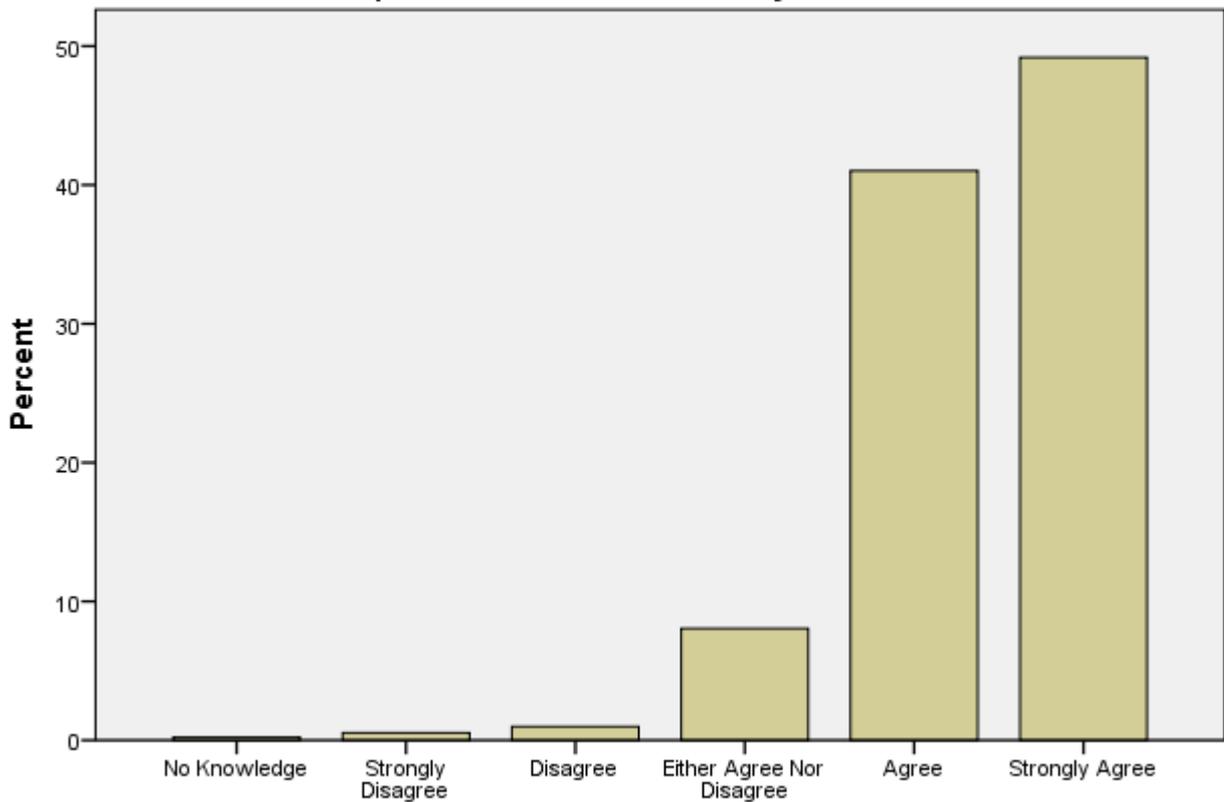
Sustainable university should use renewable and safe energy sources.

Sustainable university should incorporate environmental knowledge into all relevant disciplines at all levels of study.



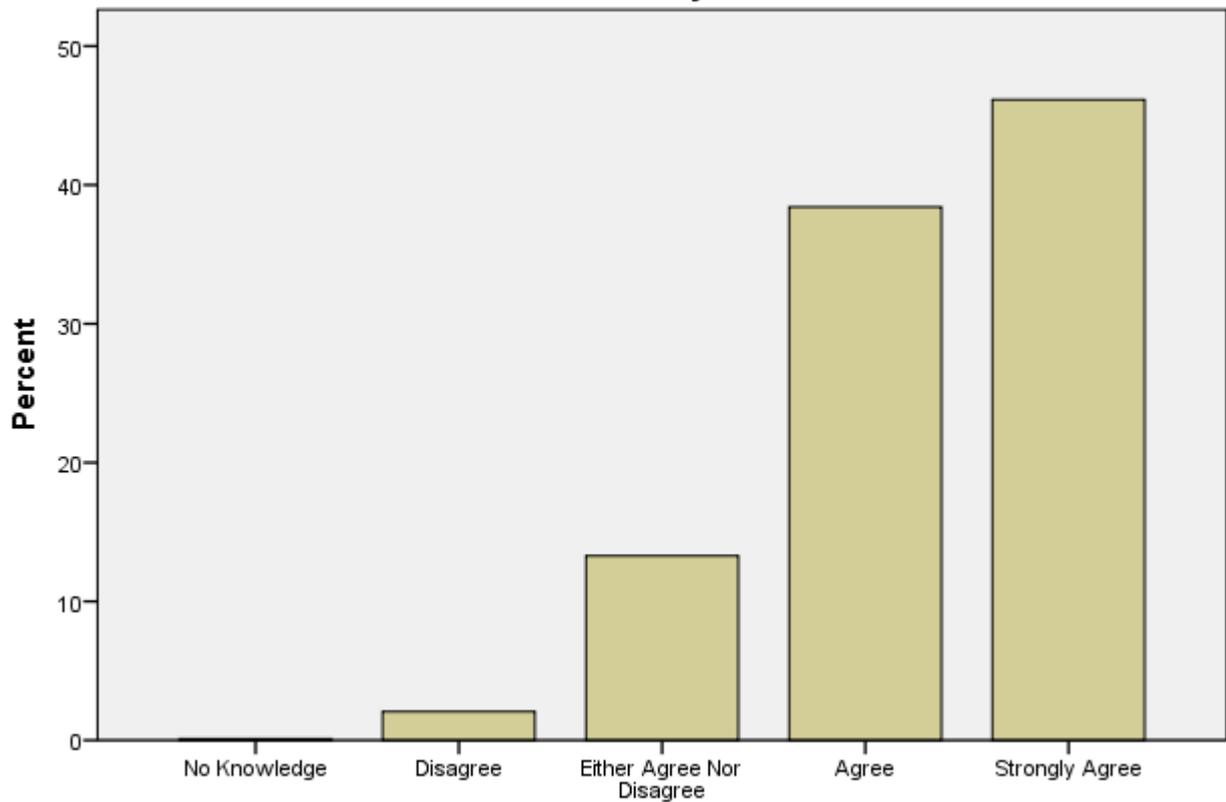
Sustainable university should incorporate environmental knowledge into all relevant disciplines at all levels of study.

Sustainable university should arrange opportunities for students to study campus and local sustainability issues.



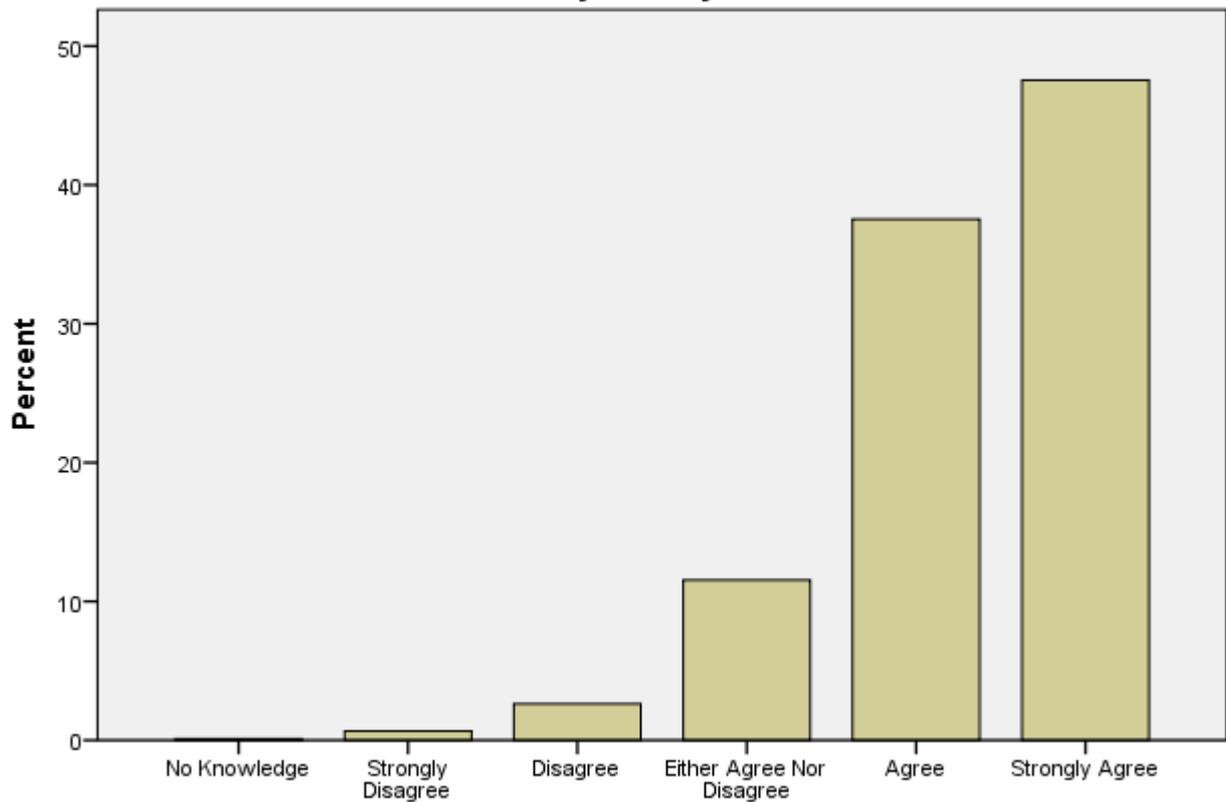
Sustainable university should arrange opportunities for students to study campus and local sustainability issues.

Sustainable university should consult students on their opinions of sustainability.



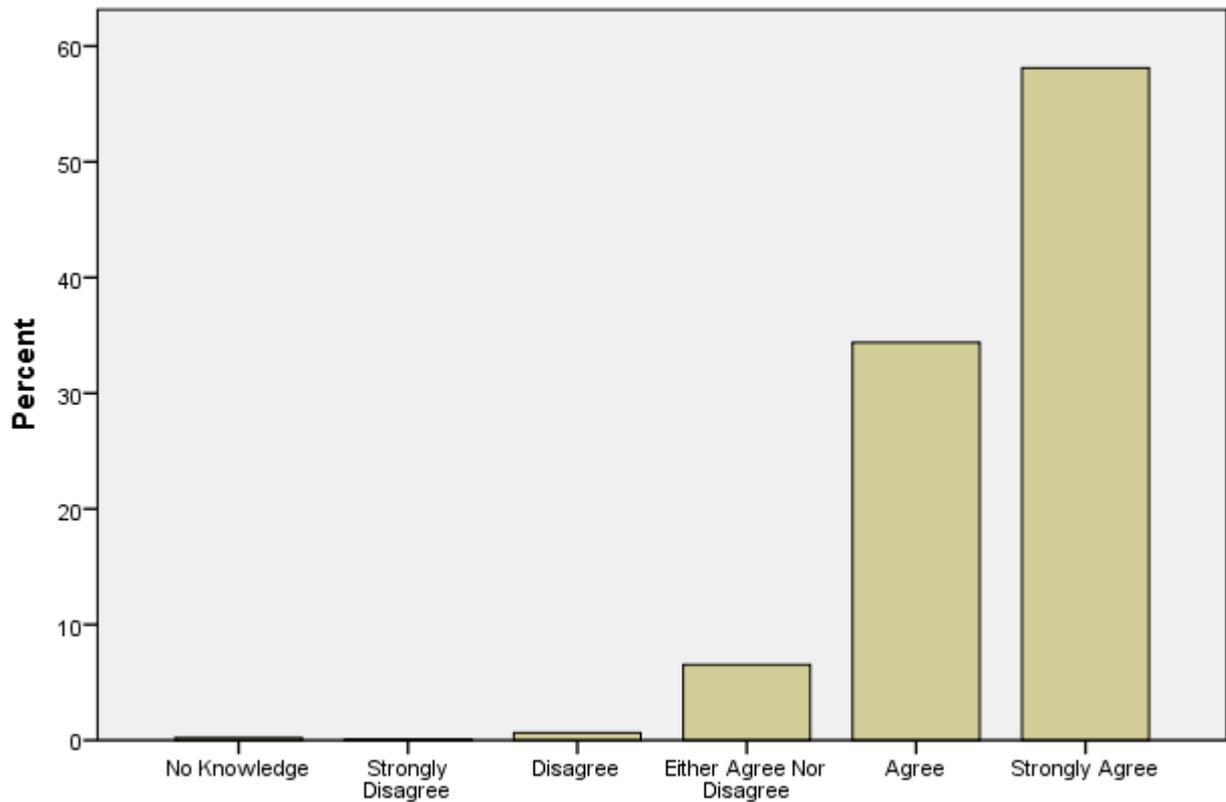
Sustainable university should consult students on their opinions of sustainability.

Sustainable university should provide incentives for students to participate in environmentally friendly activities.



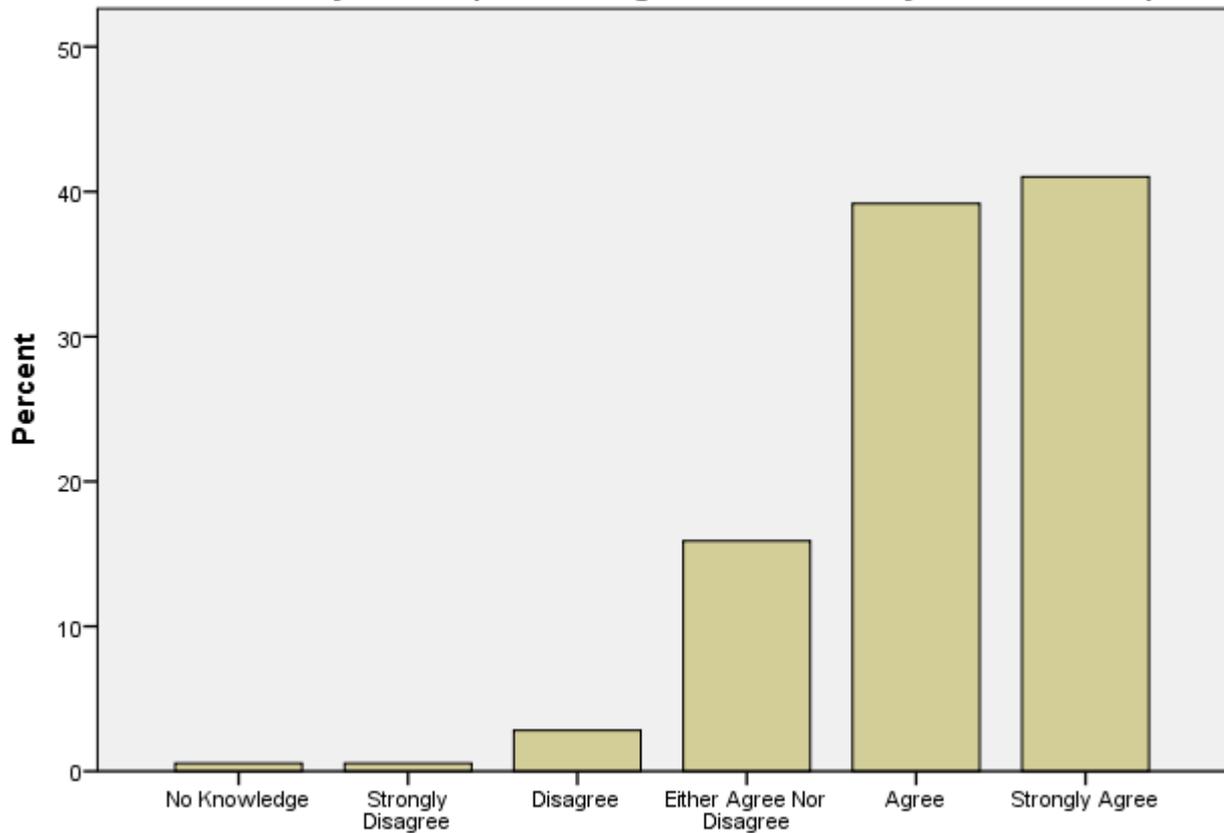
Sustainable university should provide incentives for students to participate in environmentally friendly activities.

Sustainable university should encourage critical thinking about sustainability issues.



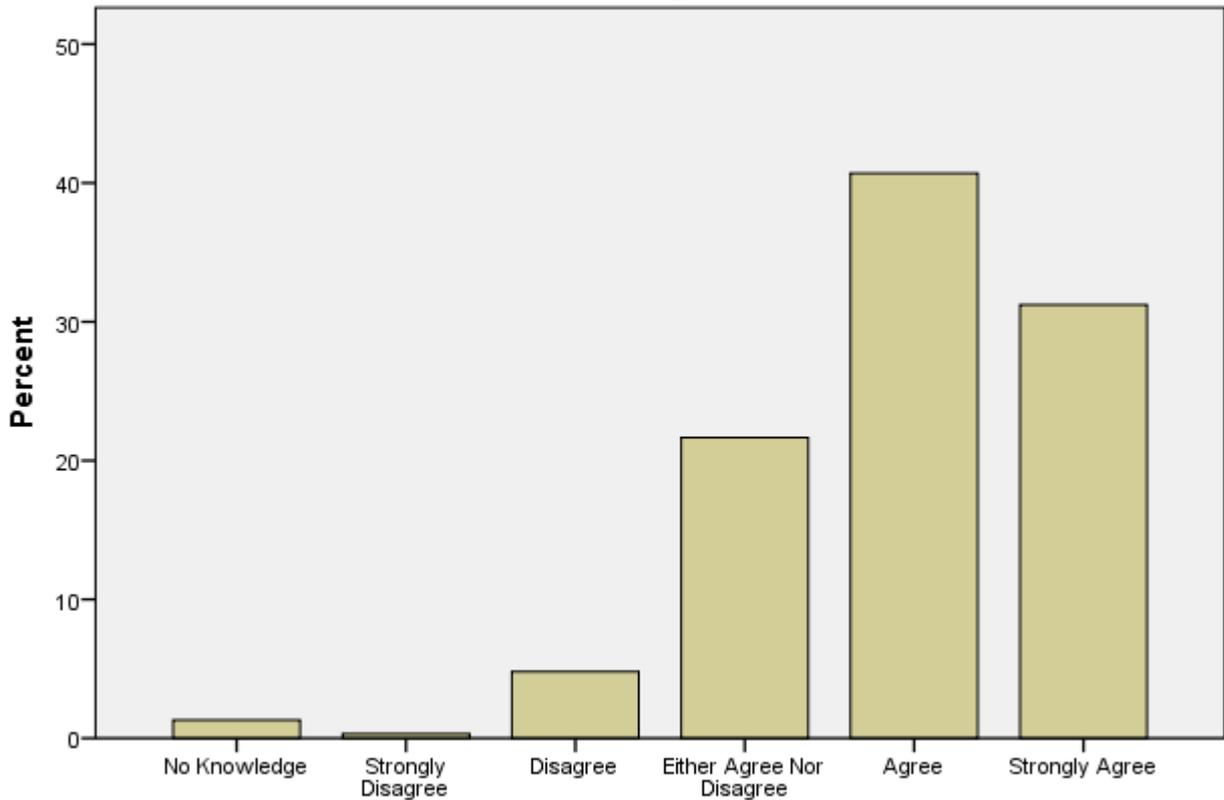
Sustainable university should encourage critical thinking about sustainability issues.

Sustainable university should perform regular sustainability audits on campus.



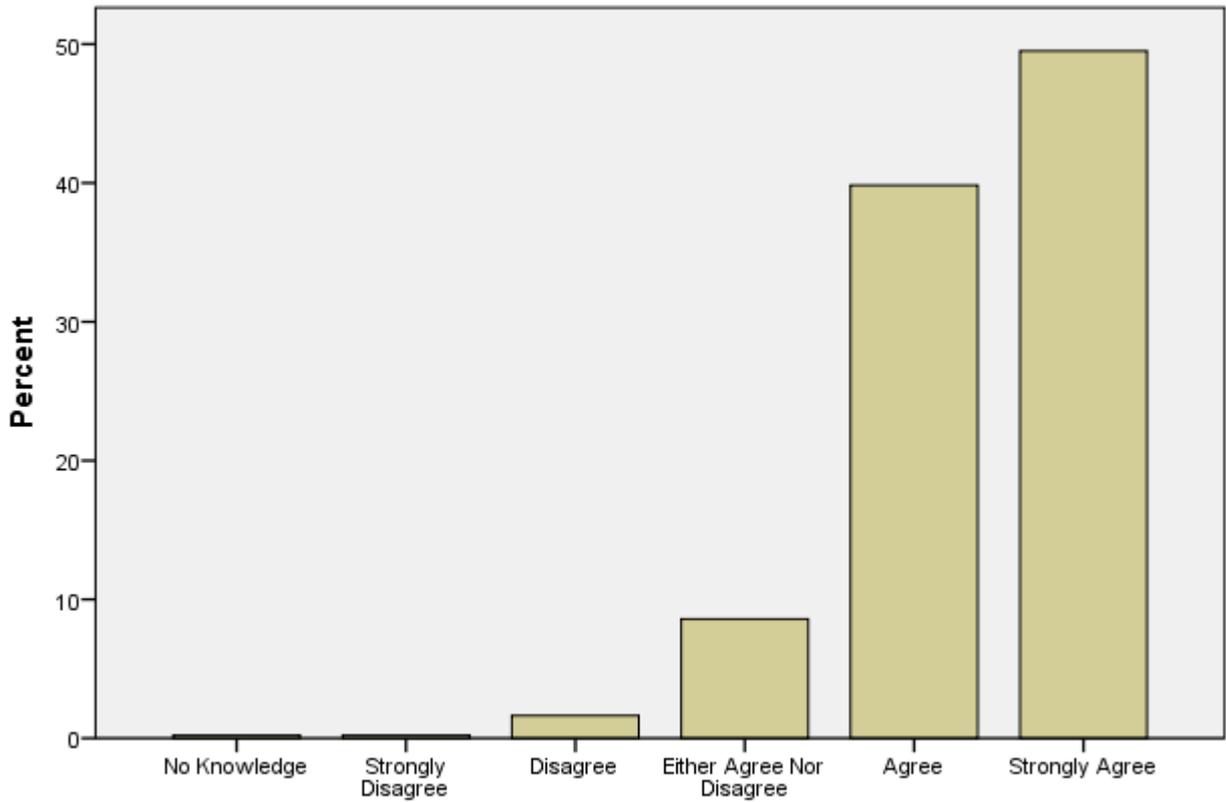
Sustainable university should perform regular sustainability audits on campus.

Sustainable university should perform sustainability audits on the surrounding community.



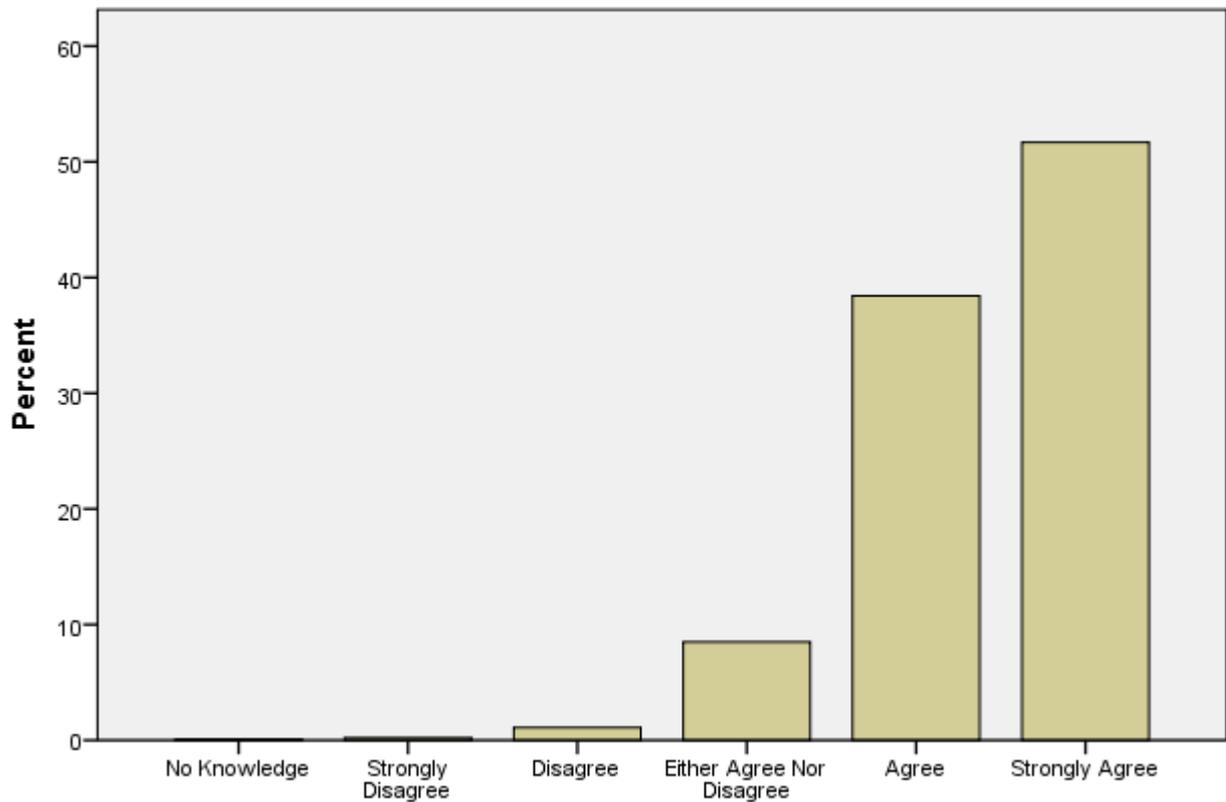
Sustainable university should perform sustainability audits on the surrounding community.

Sustainable university should engage in community outreach programs that benefit the local environment.



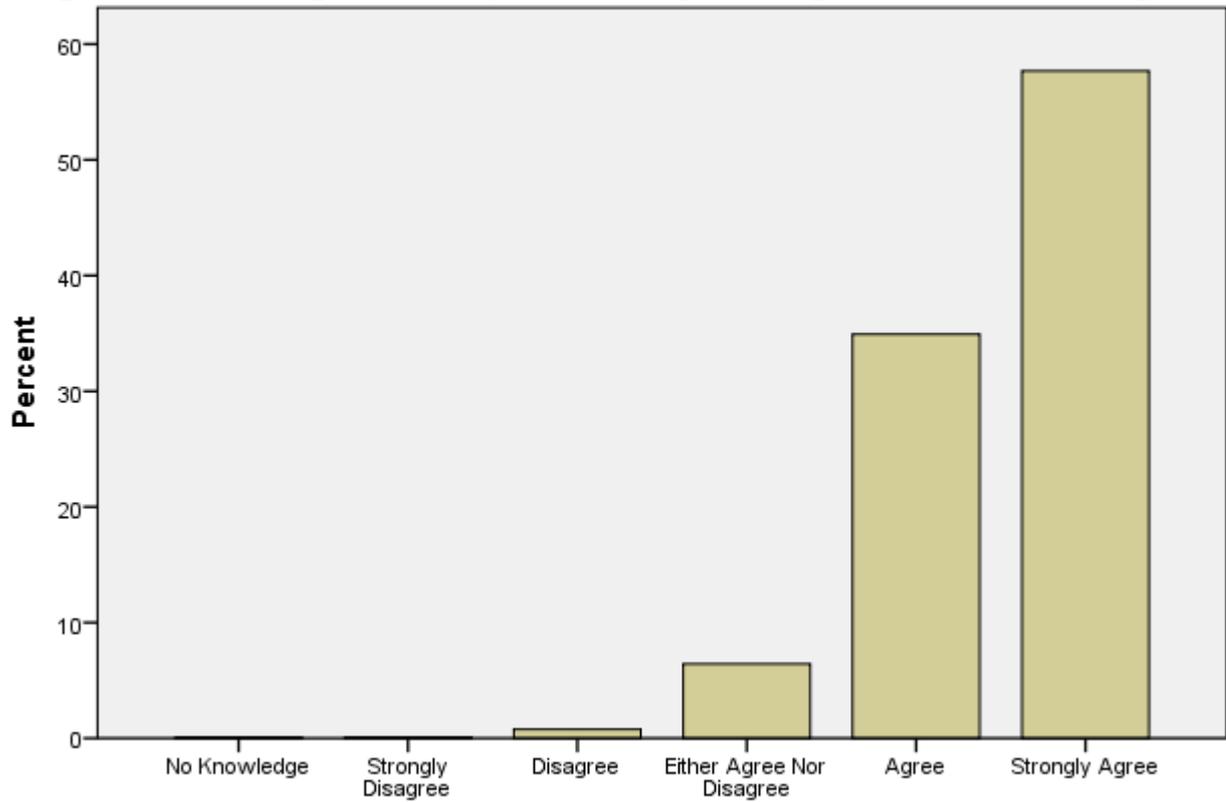
Sustainable university should engage in community outreach programs that benefit the local environment.

Sustainable university should create green community centers to benefit the local environment.



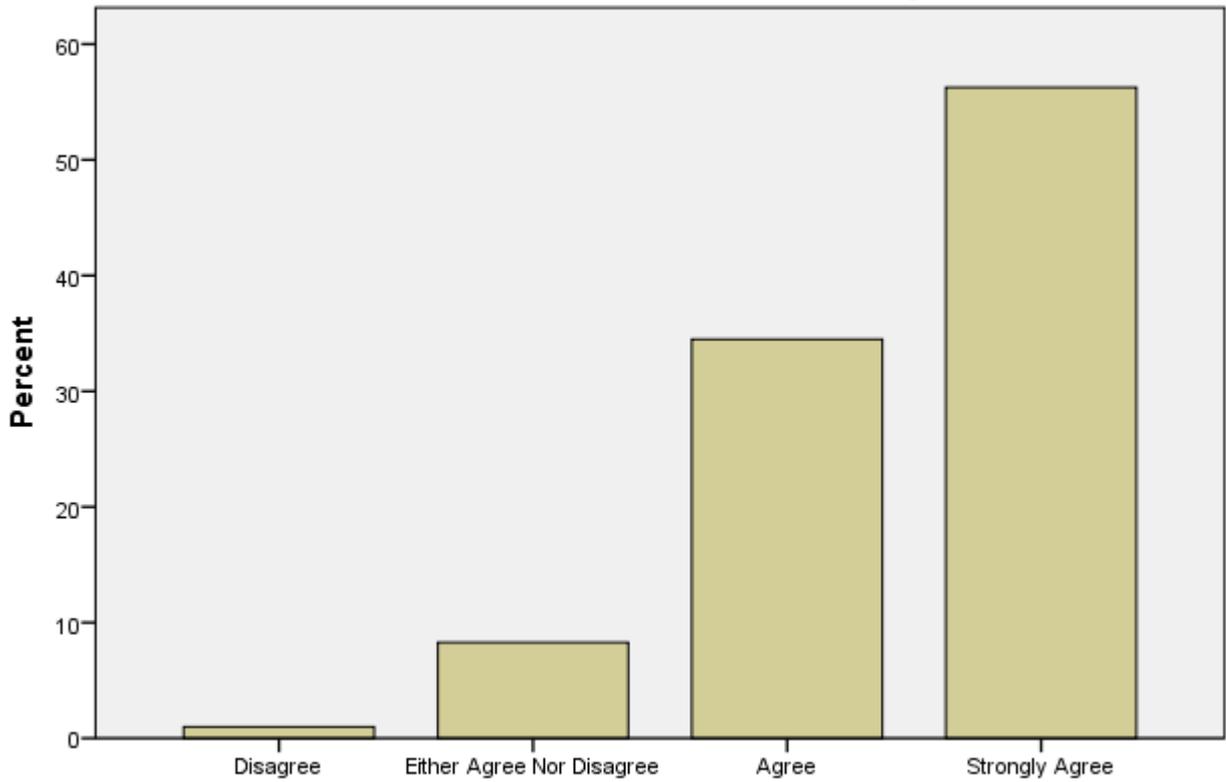
Sustainable university should create green community centers to benefit the local environment.

Sustainable university should create partnerships with government, non-governmental organisations, and industry working toward sustainability.



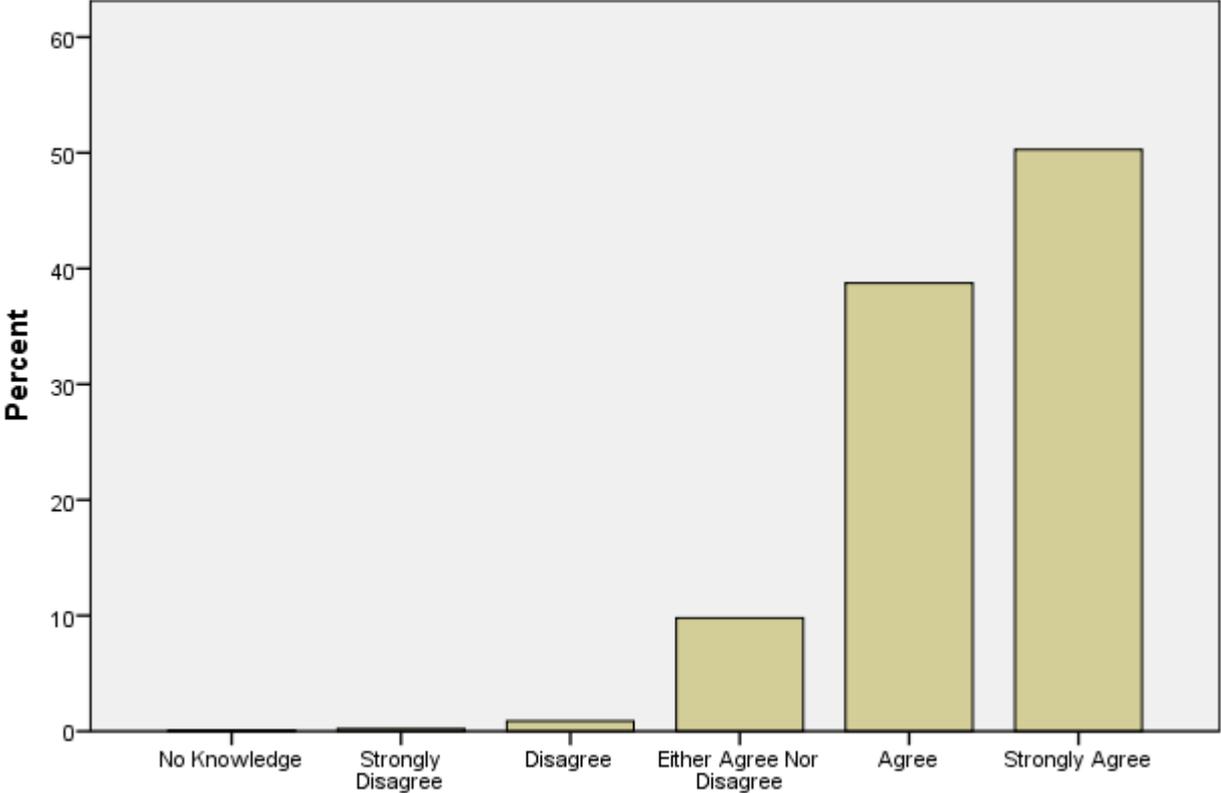
Sustainable university should create partnerships with government, non-governmental organisations, and industry working toward sustainability.

Sustainable university should encourage students to participate in various volunteer activities around the community.



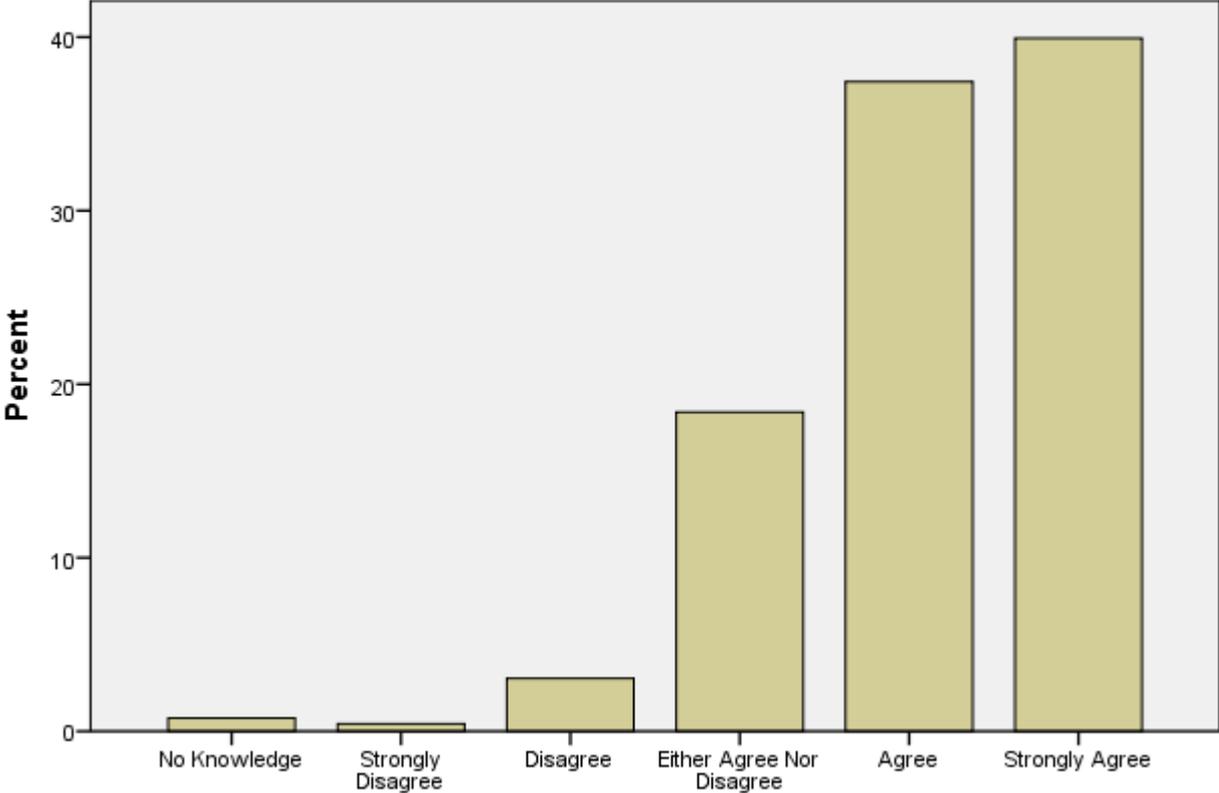
Sustainable university should encourage students to participate in various volunteer activities around the community.

Sustainable university should encourage staff to participate in various volunteer activities around the community.



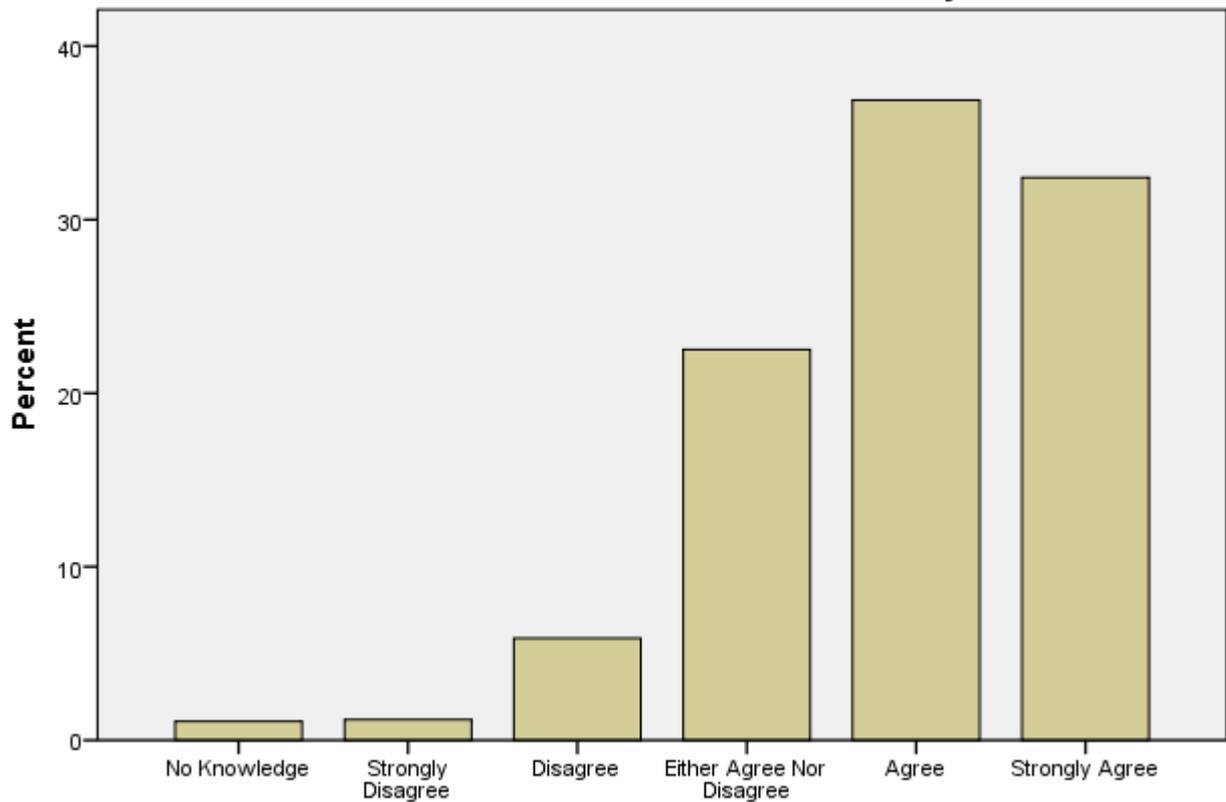
Sustainable university should encourage staff to participate in various volunteer activities around the community.

Sustainable university should create a written statement of their commitment to sustainability.



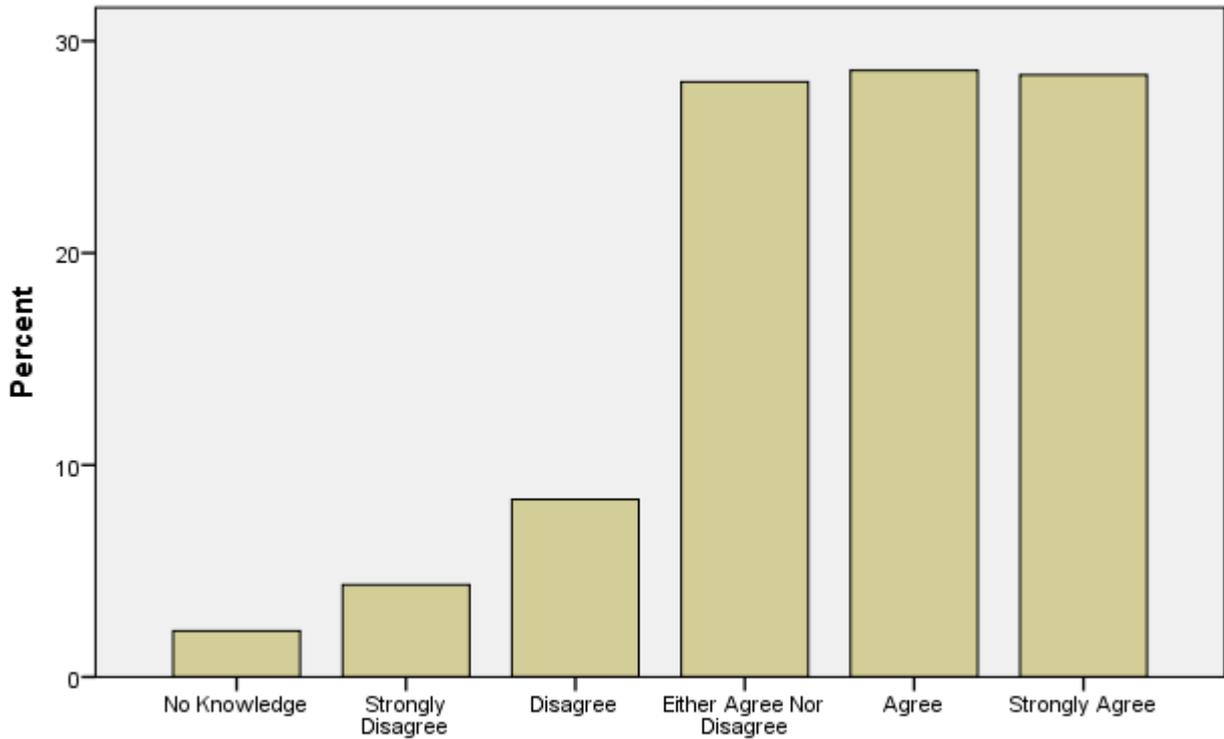
Sustainable university should create a written statement of their commitment to sustainability.

Each department within the sustainable university must create their own written statement of their commitment to sustainability.



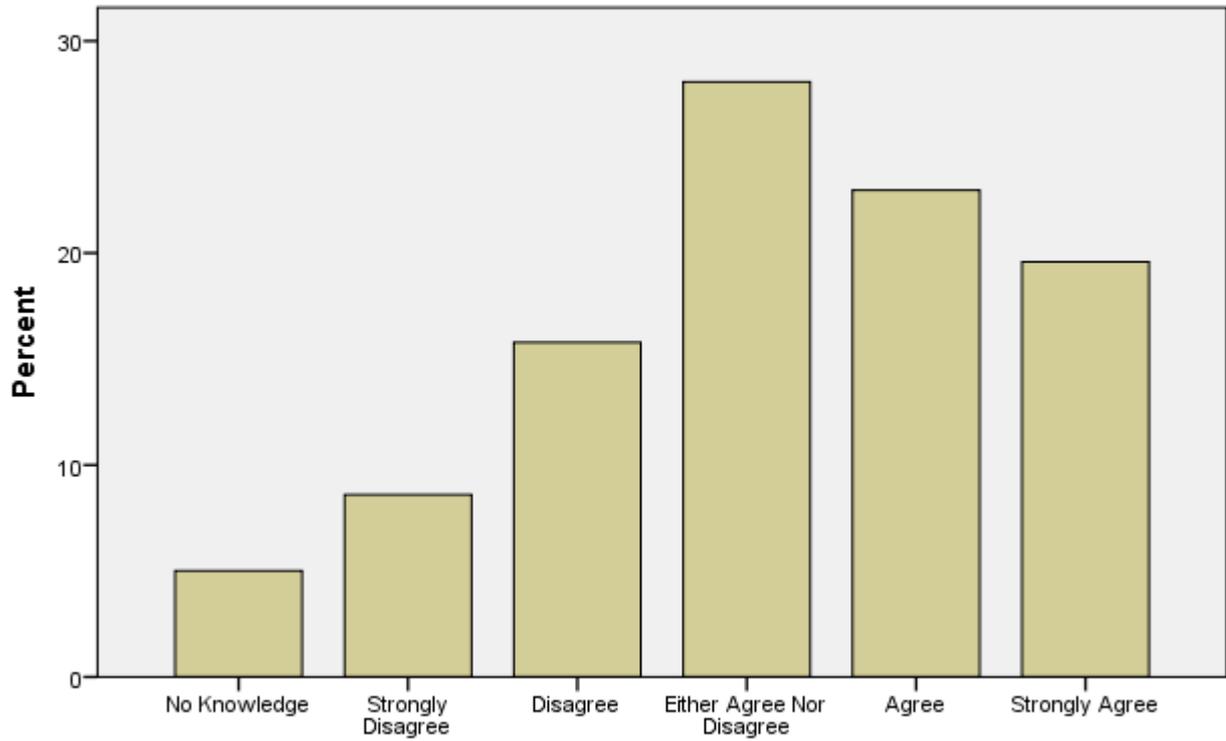
Each department within the sustainable university must create their own written statement of their commitment to sustainability.

Sustainable university should be included among the criteria for the hiring, promoting, and granting tenure to faculty based on their knowledge of and work in sustainability.



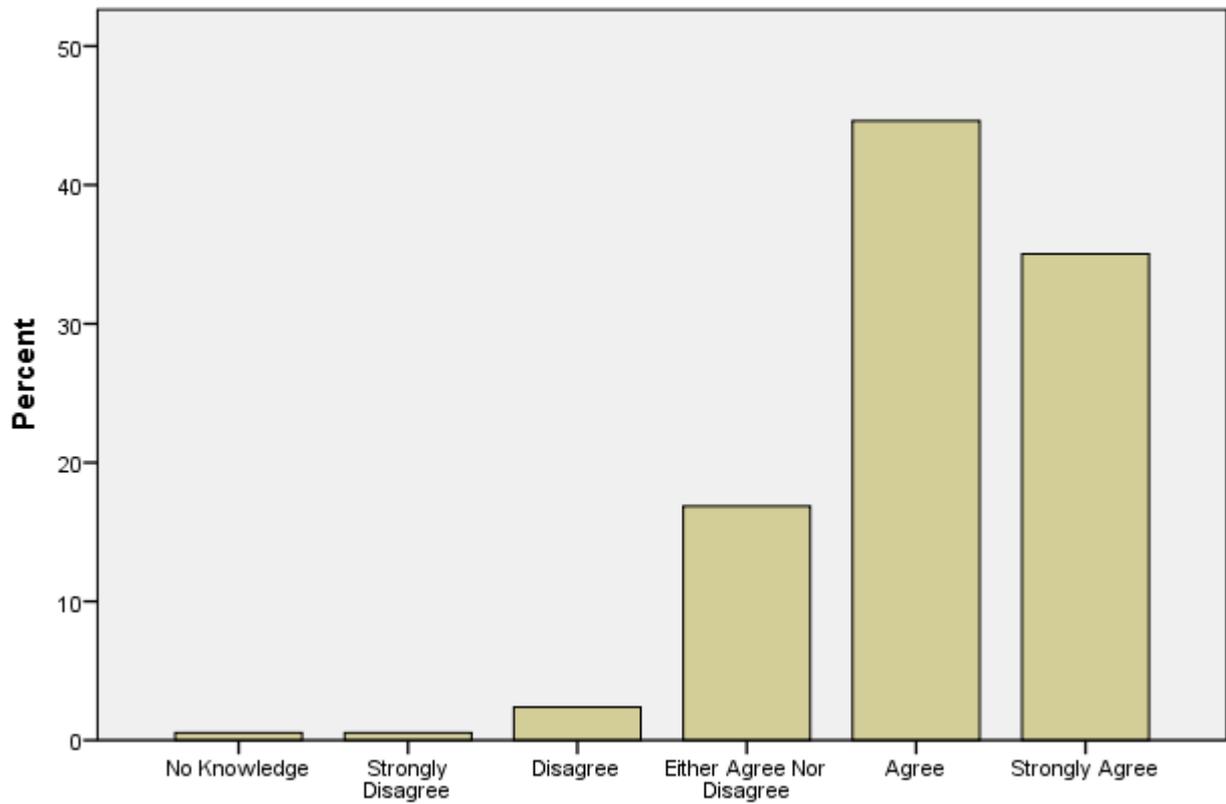
Sustainable university should be included among the criteria for the hiring, promoting, and granting tenure to faculty based on their knowledge of and work in sustainability.

Sustainable university should establish policies allowing for the termination of faculty if they fail to incorporate environmental strategies into their course material and research.



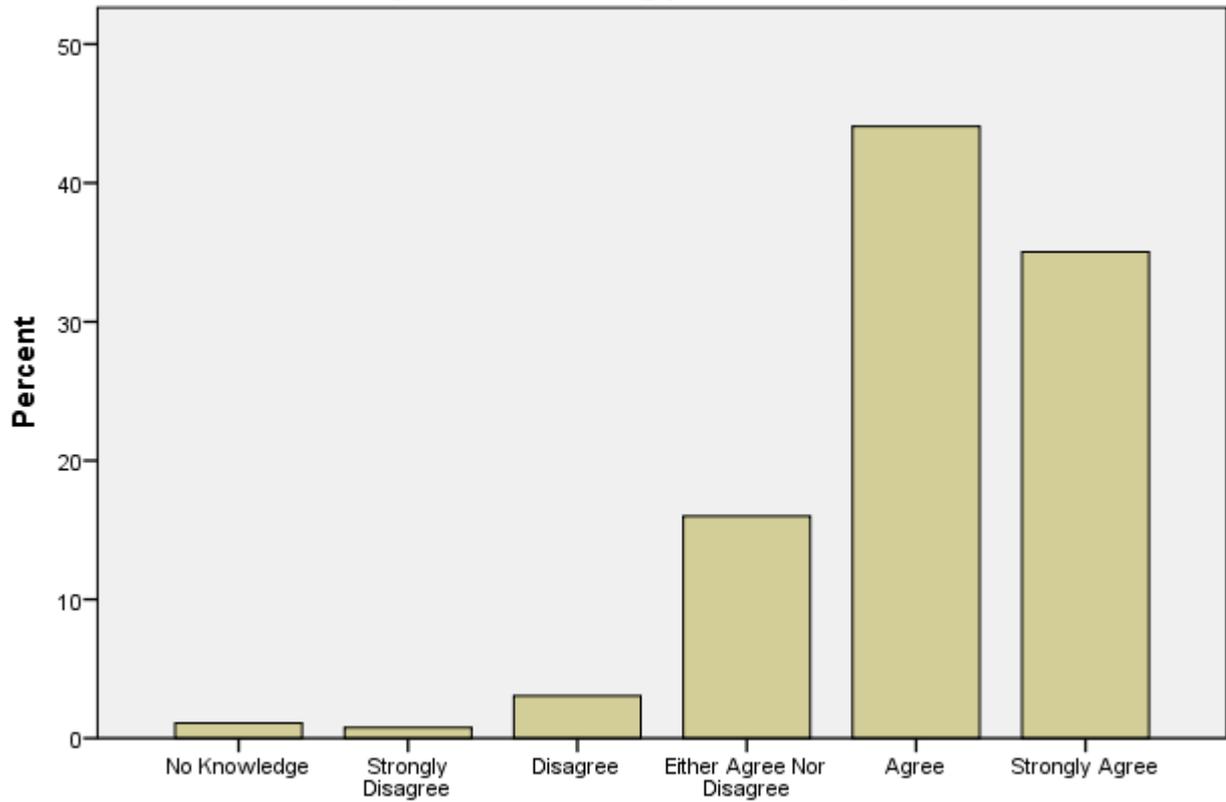
Sustainable university should establish policies allowing for the termination of faculty if they fail to incorporate environmental strategies into their course material and research.

Sustainable university should emphasize sustainability through support services.



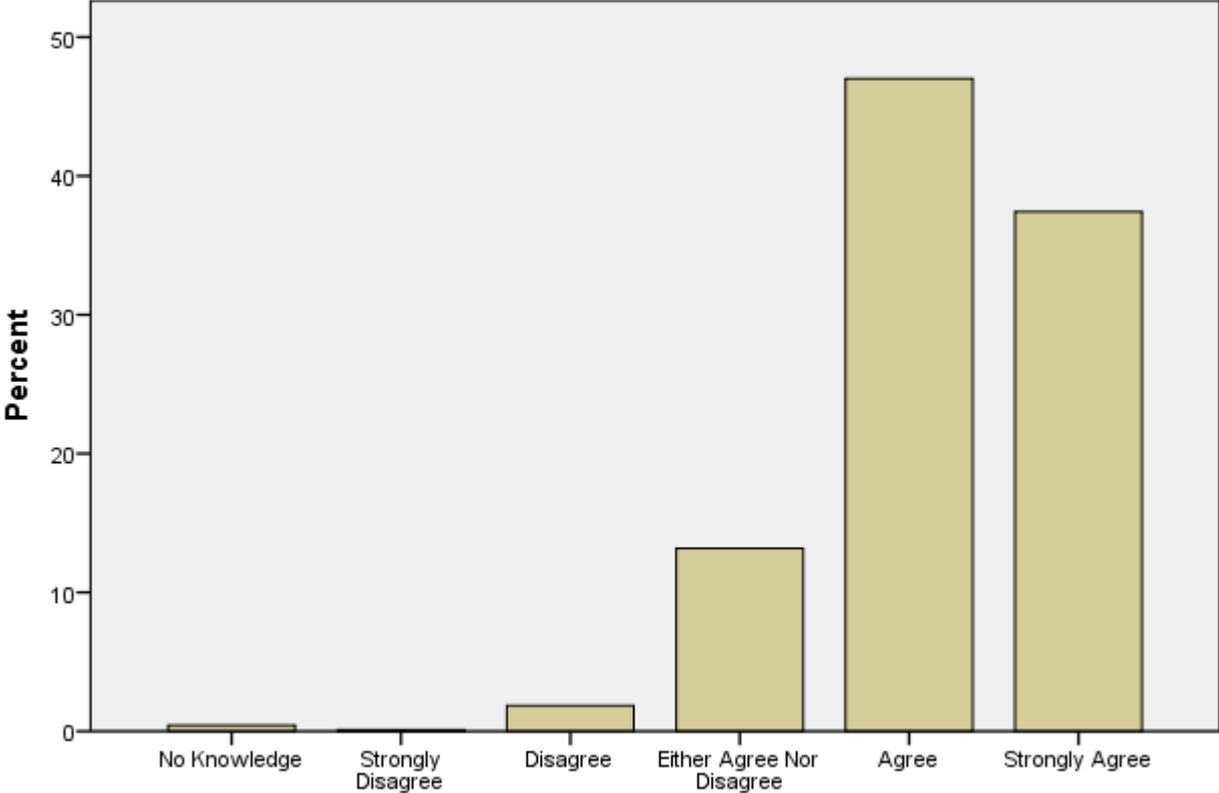
Sustainable university should emphasize sustainability through support services.

Research done on campus must include a summary of potential environmental issues that may be faced during practical implementation.



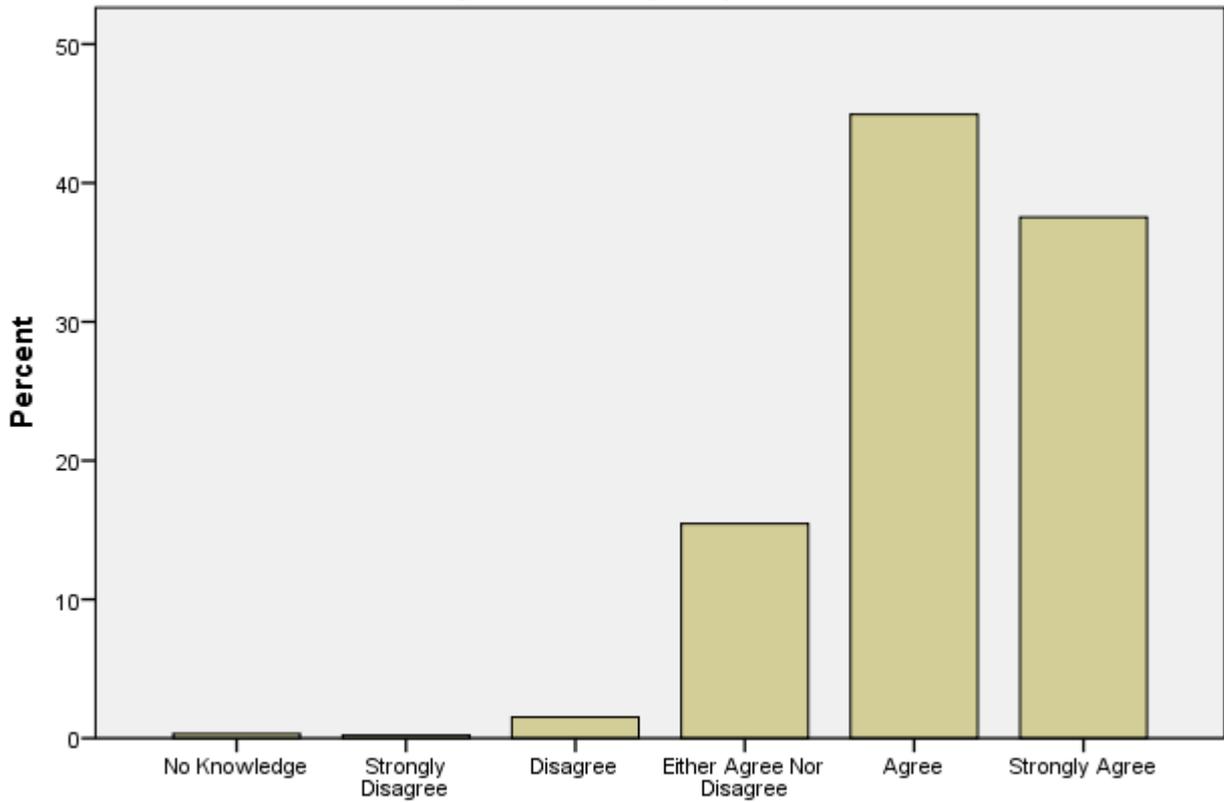
Research done on campus must include a summary of potential environmental issues that may be faced during practical implementation.

Sustainable university should establish environmentally and socially responsible purchasing practices.



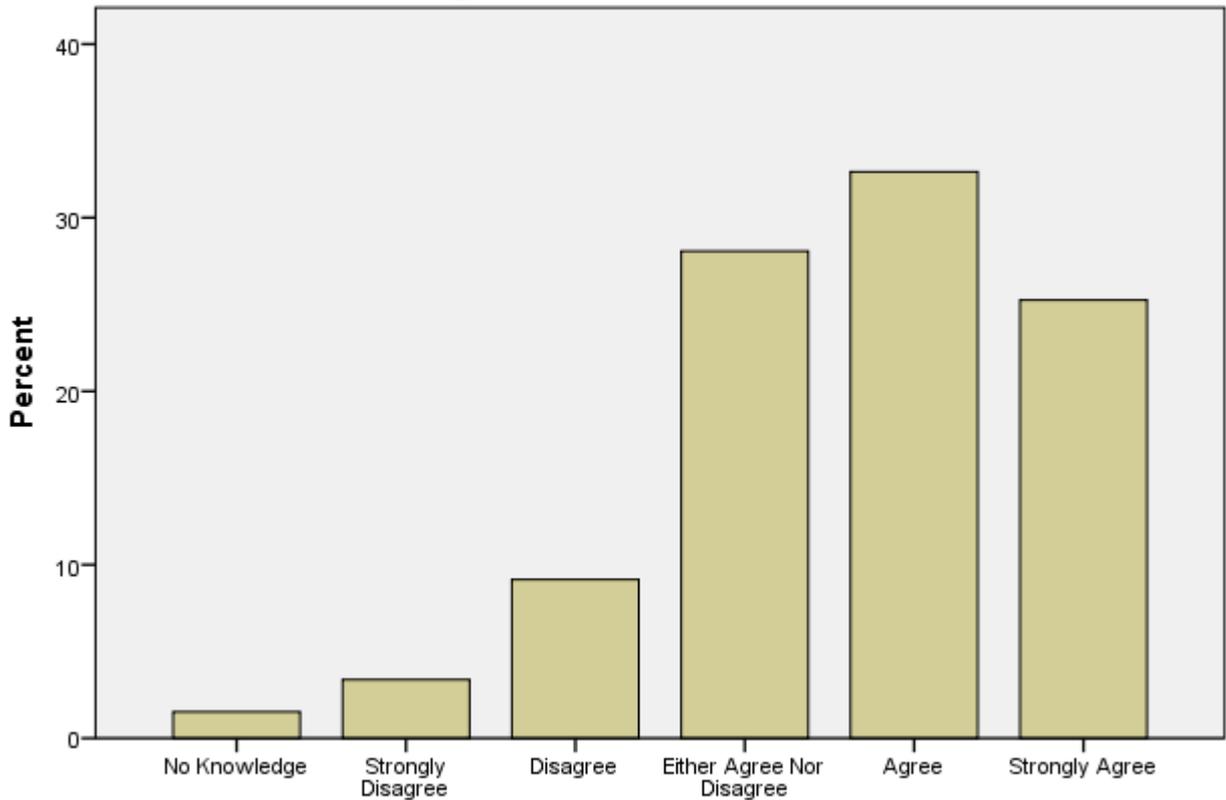
Sustainable university should establish environmentally and socially responsible purchasing practices.

Sustainable university should provide support for individuals who seek environmentally and socially responsible careers.



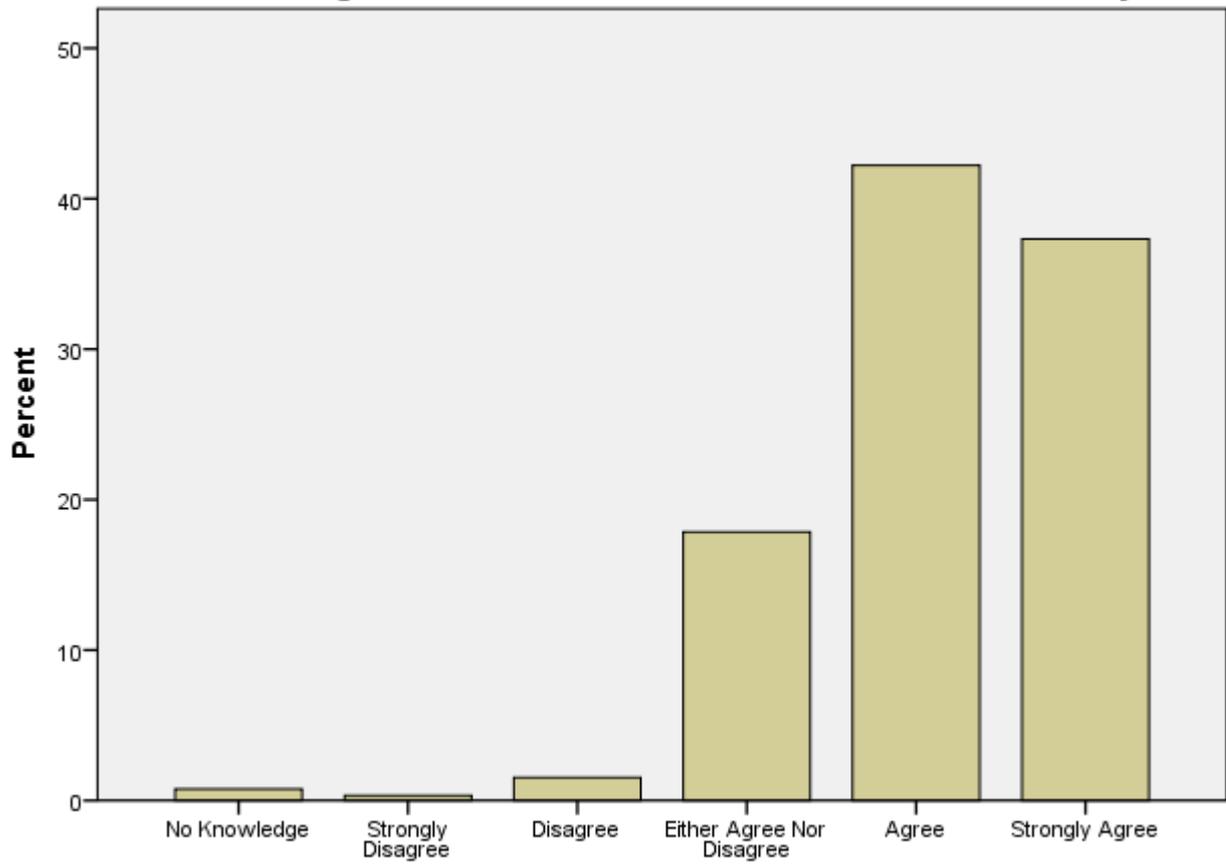
Sustainable university should provide support for individuals who seek environmentally and socially responsible careers.

Sustainable university should provide monetary reimbursement for individuals taking environmental courses.



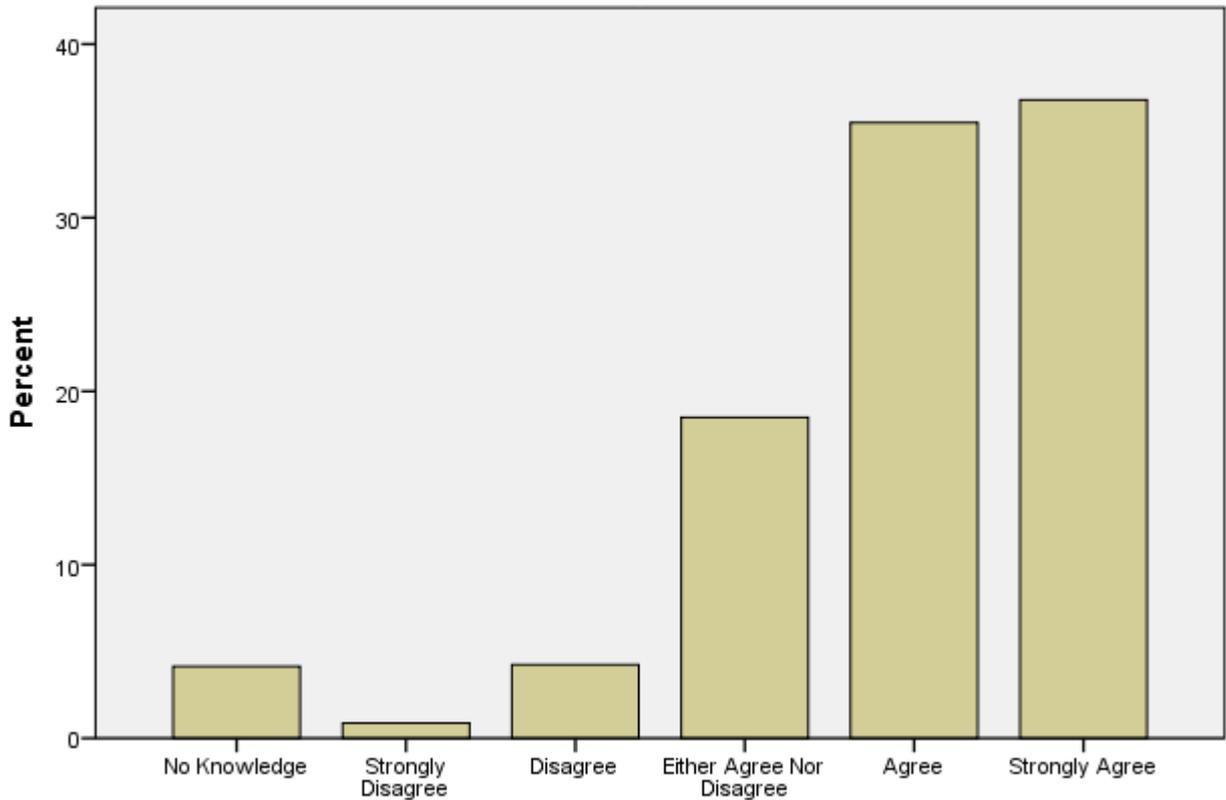
Sustainable university should provide monetary reimbursement for individuals taking environmental courses.

There should be greater self-reliance within the sustainable university.



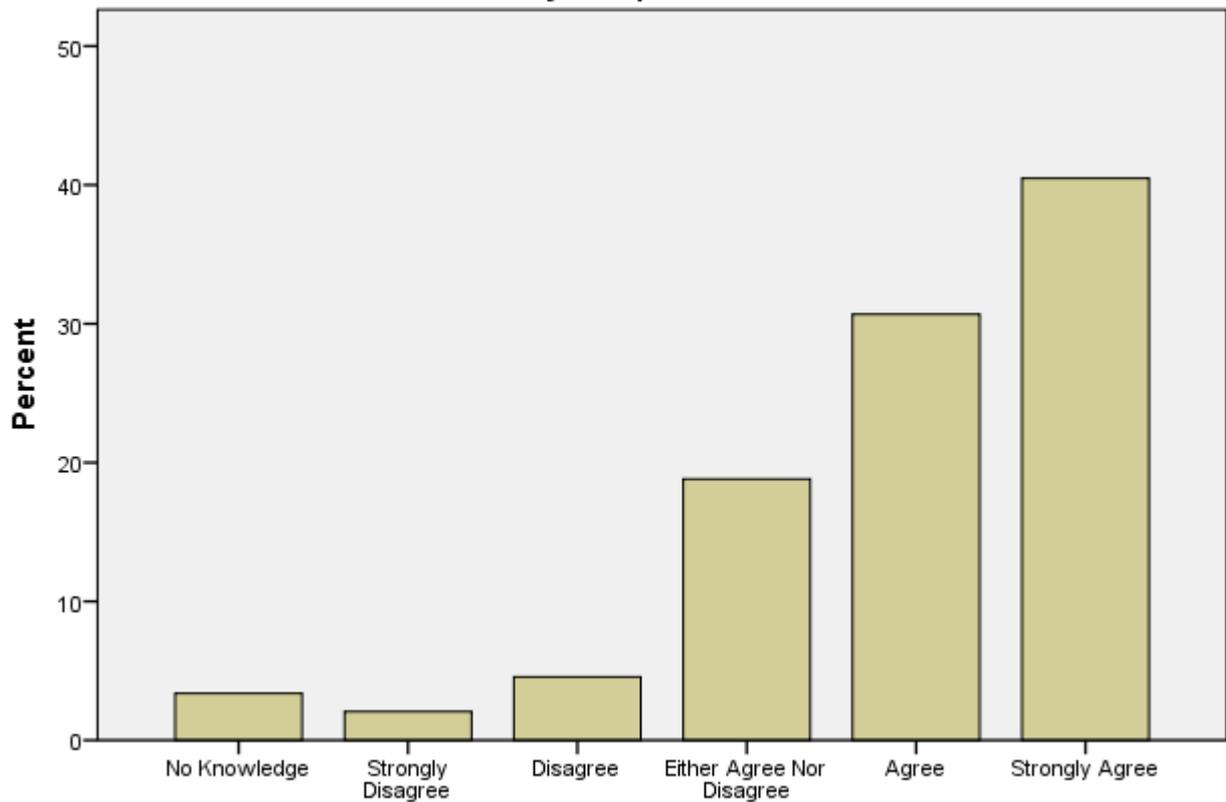
There should be greater self-reliance within the sustainable university.

Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide.



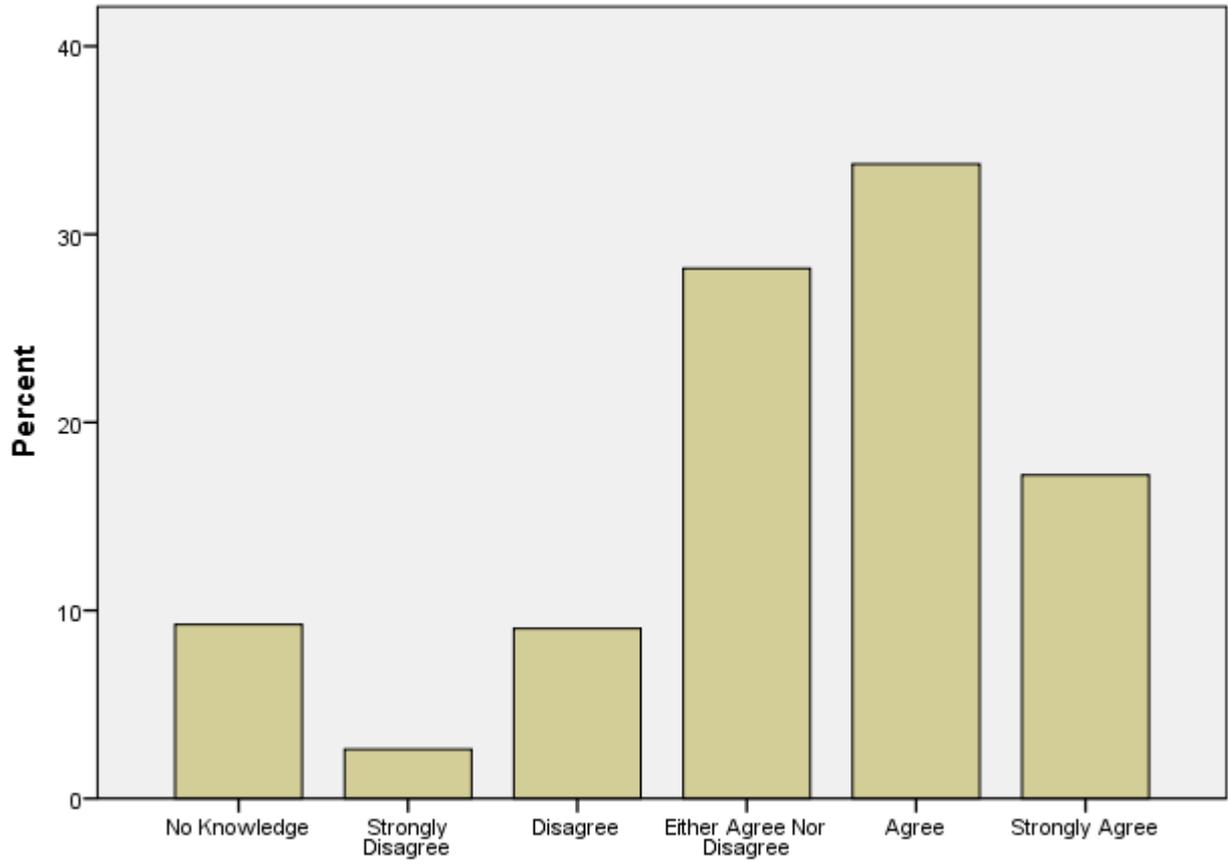
Budget allocated for my campus is the main thing that affects the implementation of sustainable campus worldwide.

Funding is the main problem to implement sustainable development initiatives in my campus.



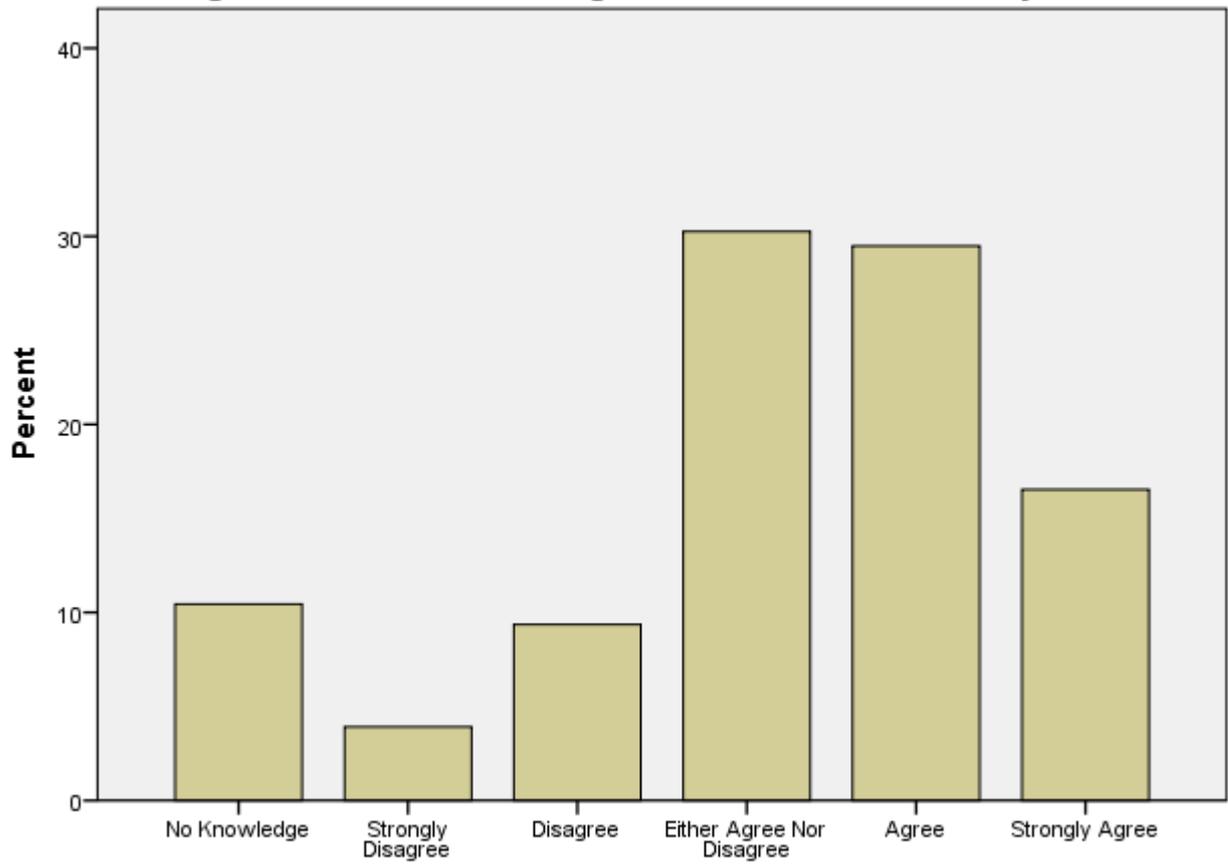
Funding is the main problem to implement sustainable development initiatives in my campus.

Significant level of research directly on sustainability is conducted.



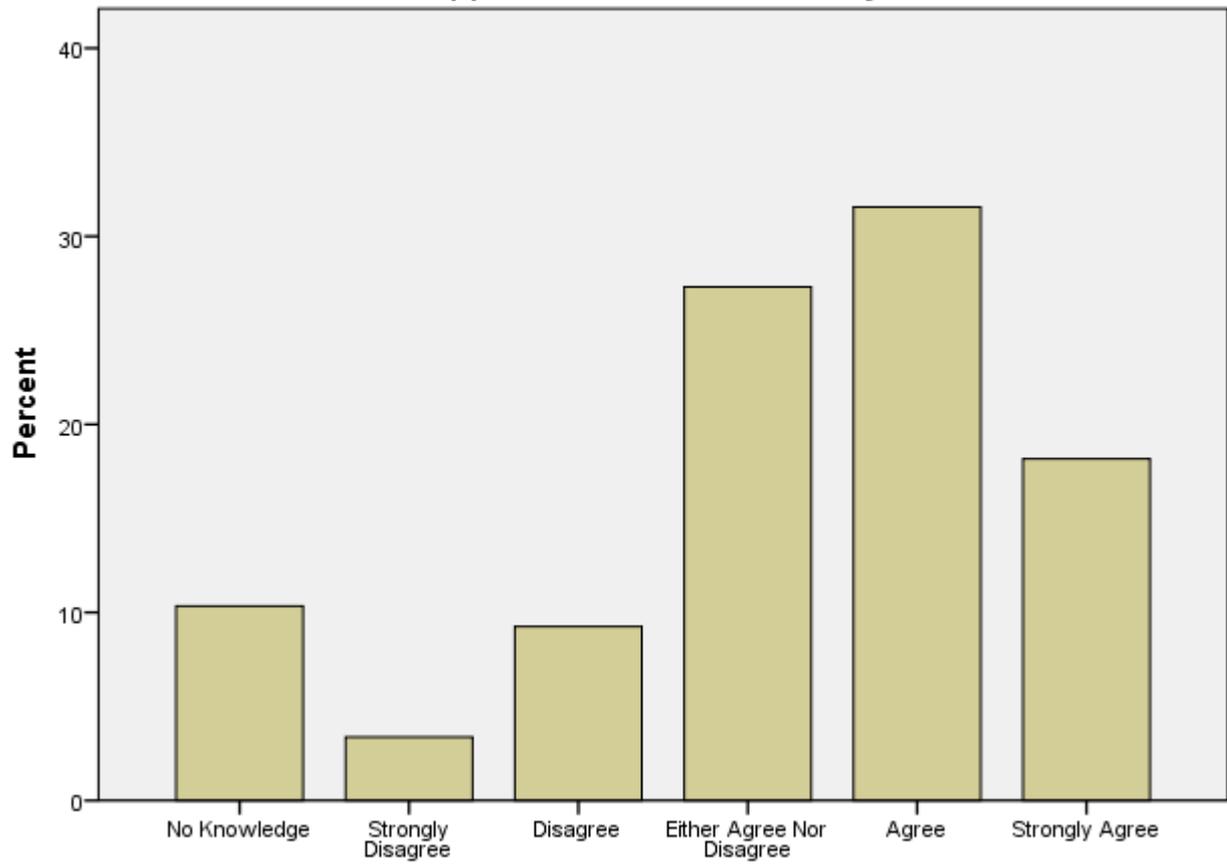
Significant level of research directly on sustainability is conducted.

Significant research funding is allocated to sustainability.



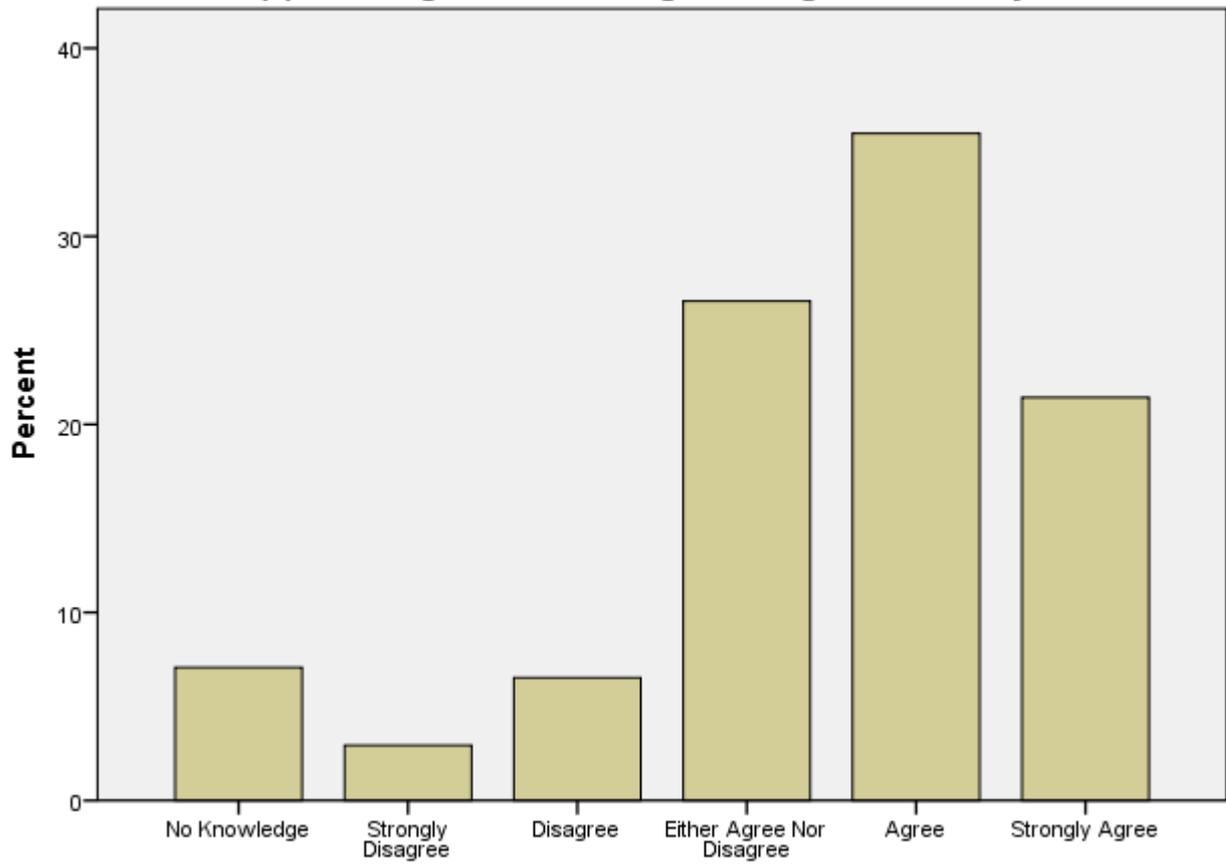
Significant research funding is allocated to sustainability.

Student research opportunities in sustainability are offered.



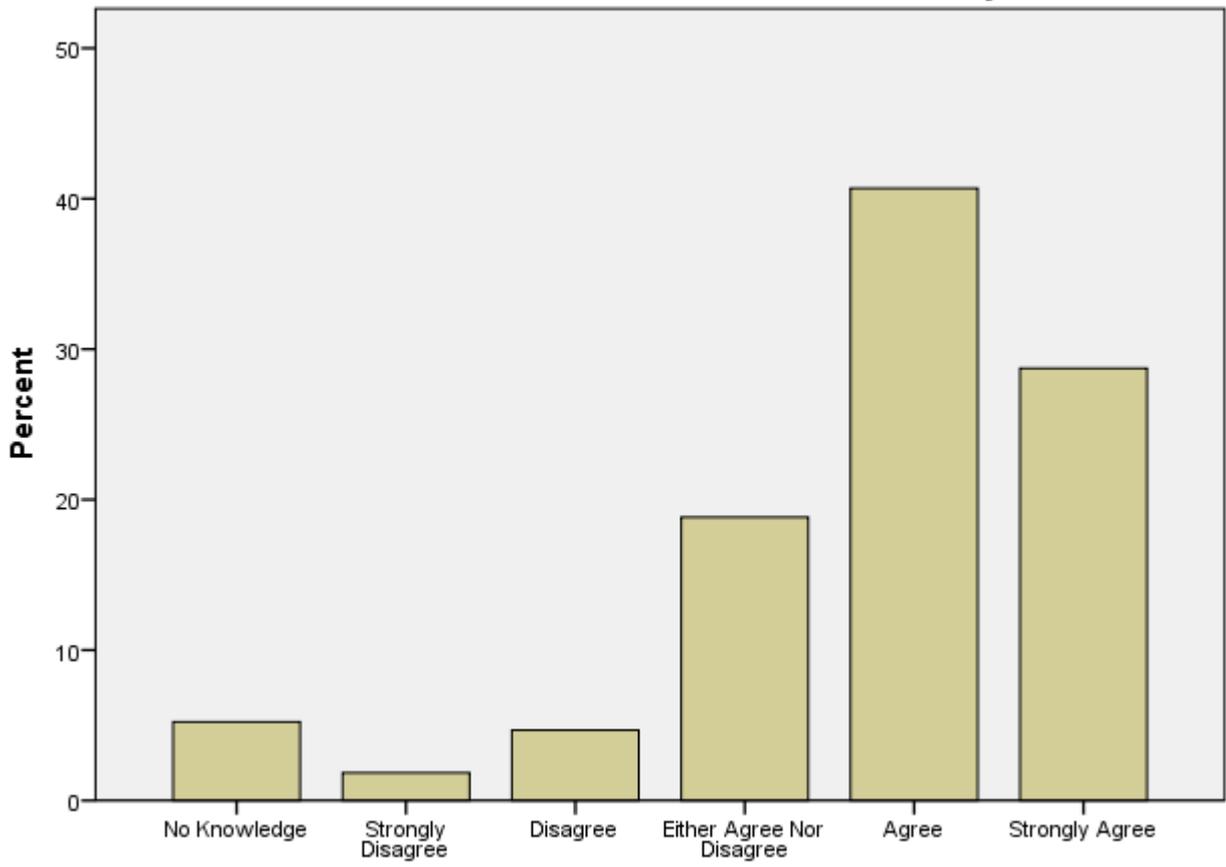
Student research opportunities in sustainability are offered.

An institute(s) focusing on researching/teaching sustainability exists.



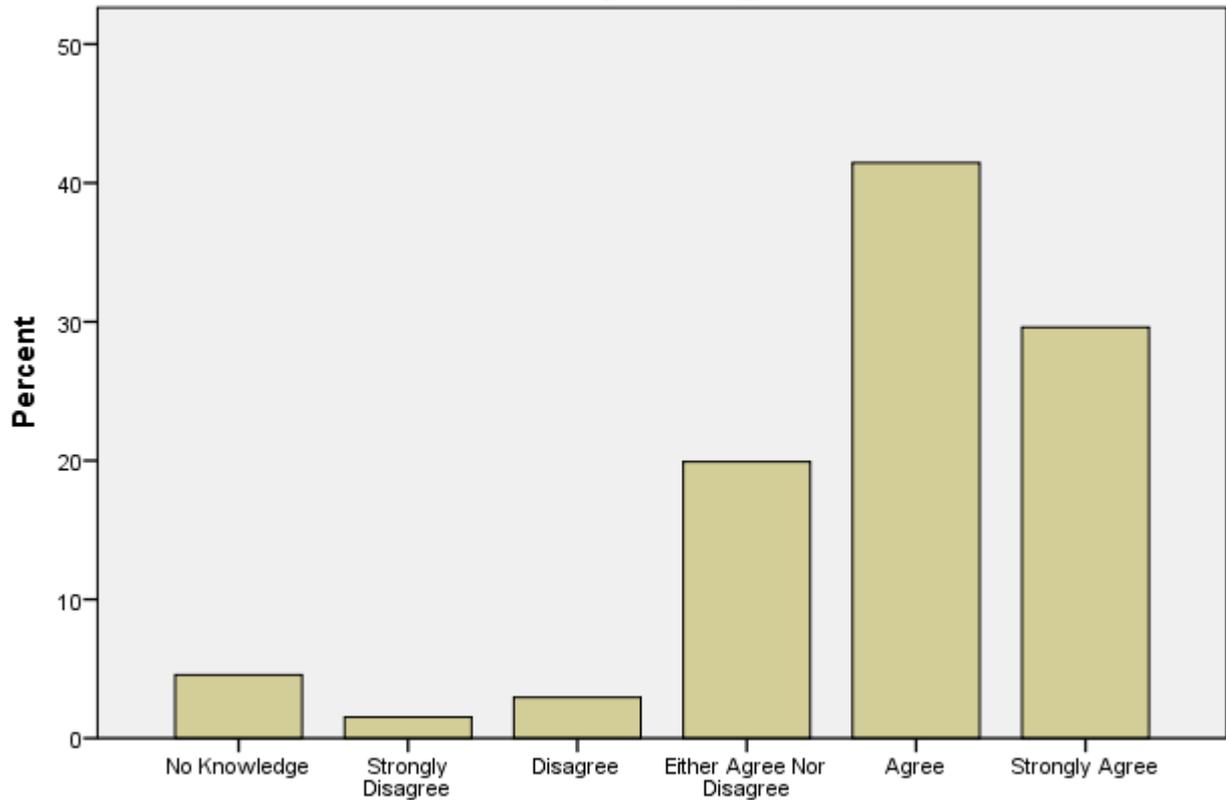
An institute(s) focusing on researching/teaching sustainability exists.

A collaboration with industries to create a better sustainability direction.



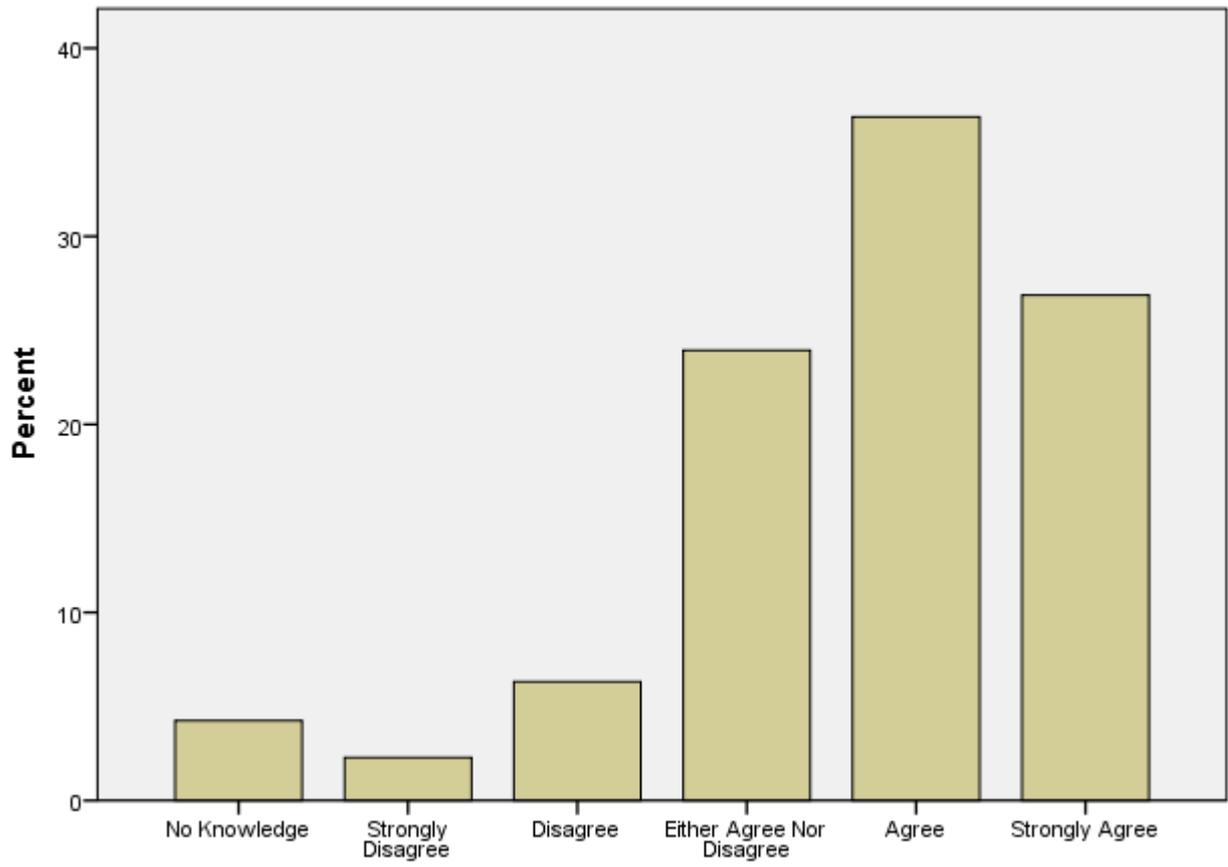
A collaboration with industries to create a better sustainability direction.

Living laboratory should be encourage in overcoming a growing and emerging sustainability challenges.



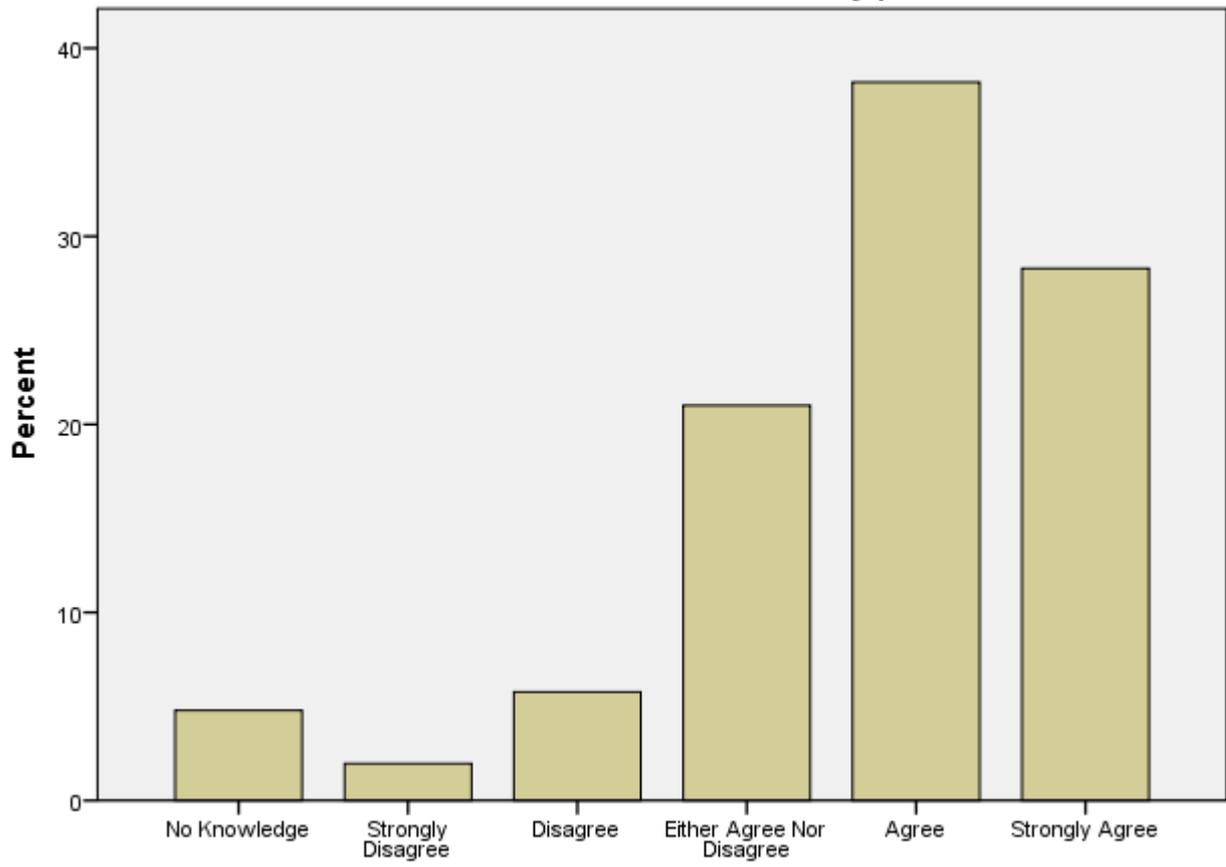
Living laboratory should be encourage in overcoming a growing and emerging sustainability challenges.

Provides students with sustainable accommodation.



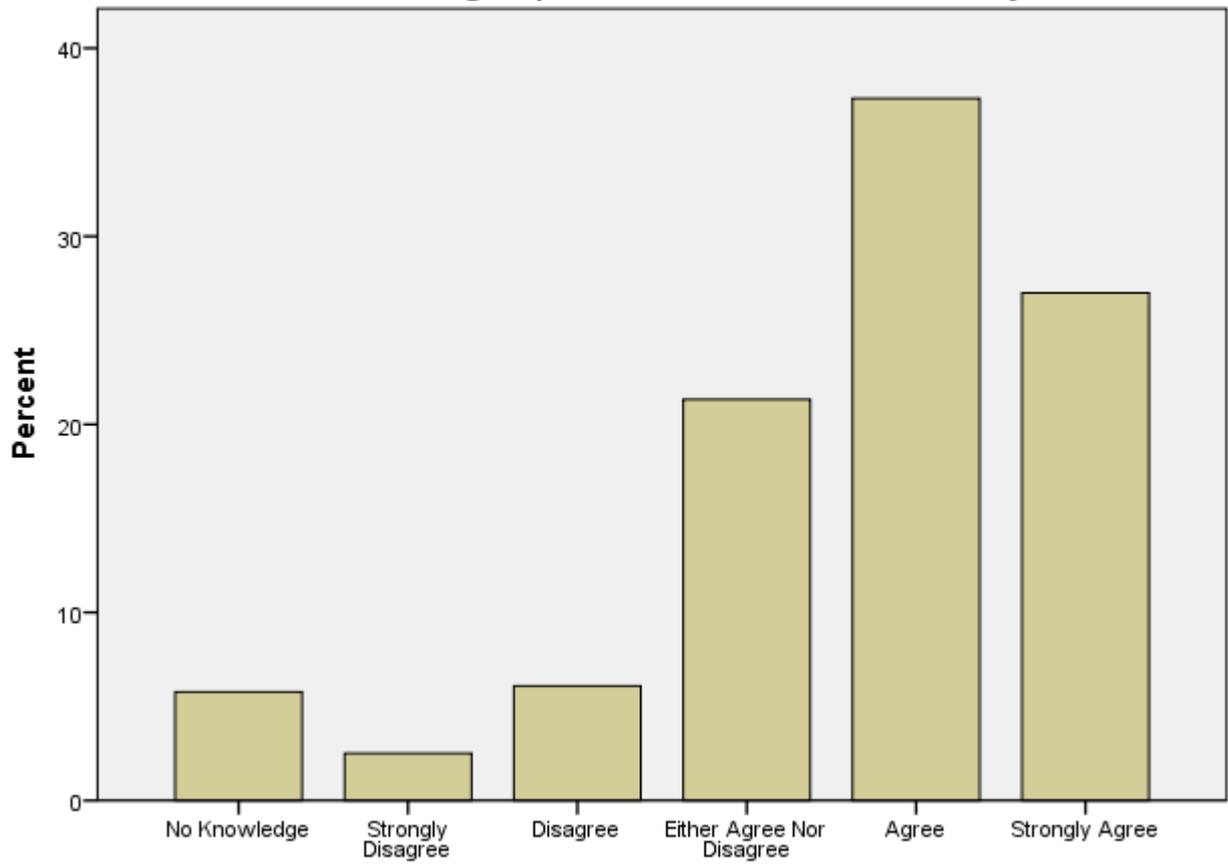
Provides students with sustainable accommodation.

Provides students with environmental sustainability practice facilities.



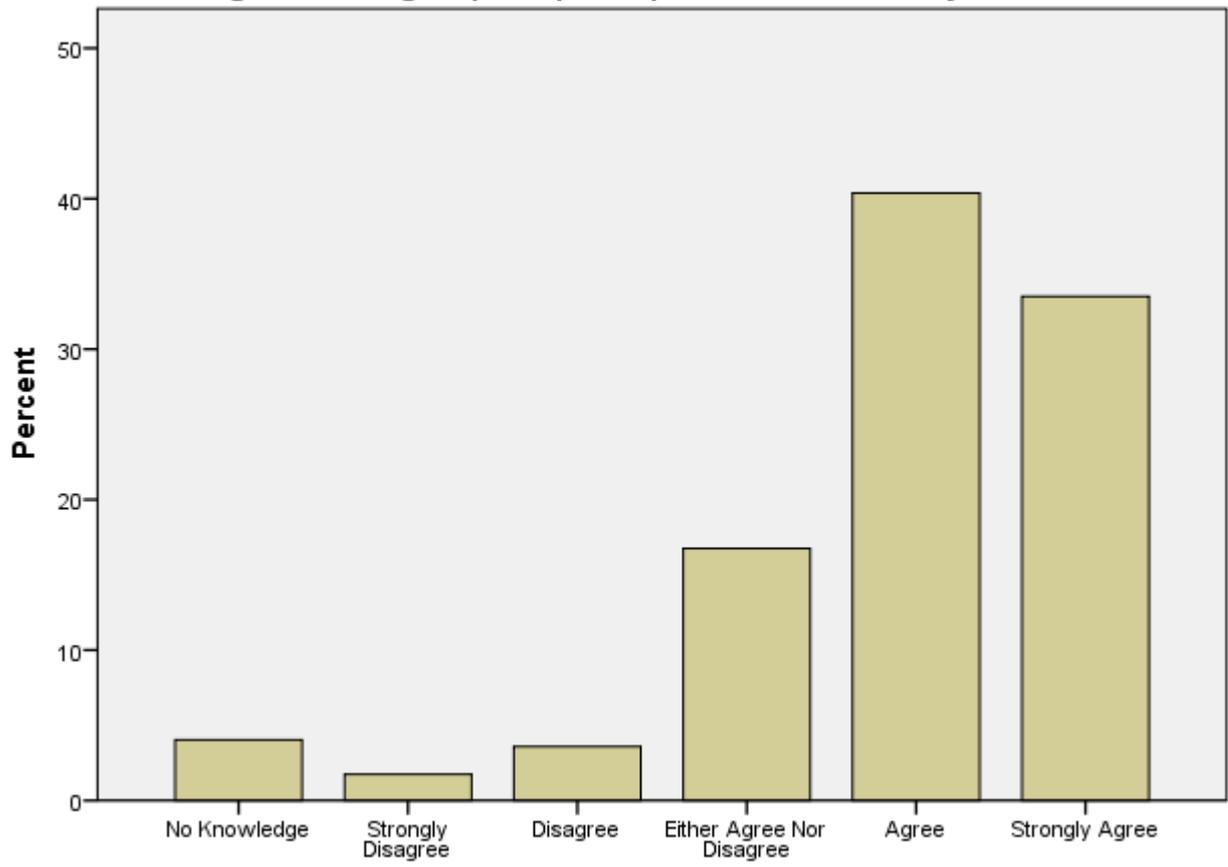
Provides students with environmental sustainability practice facilities.

Establish student groups with a focus on sustainability.



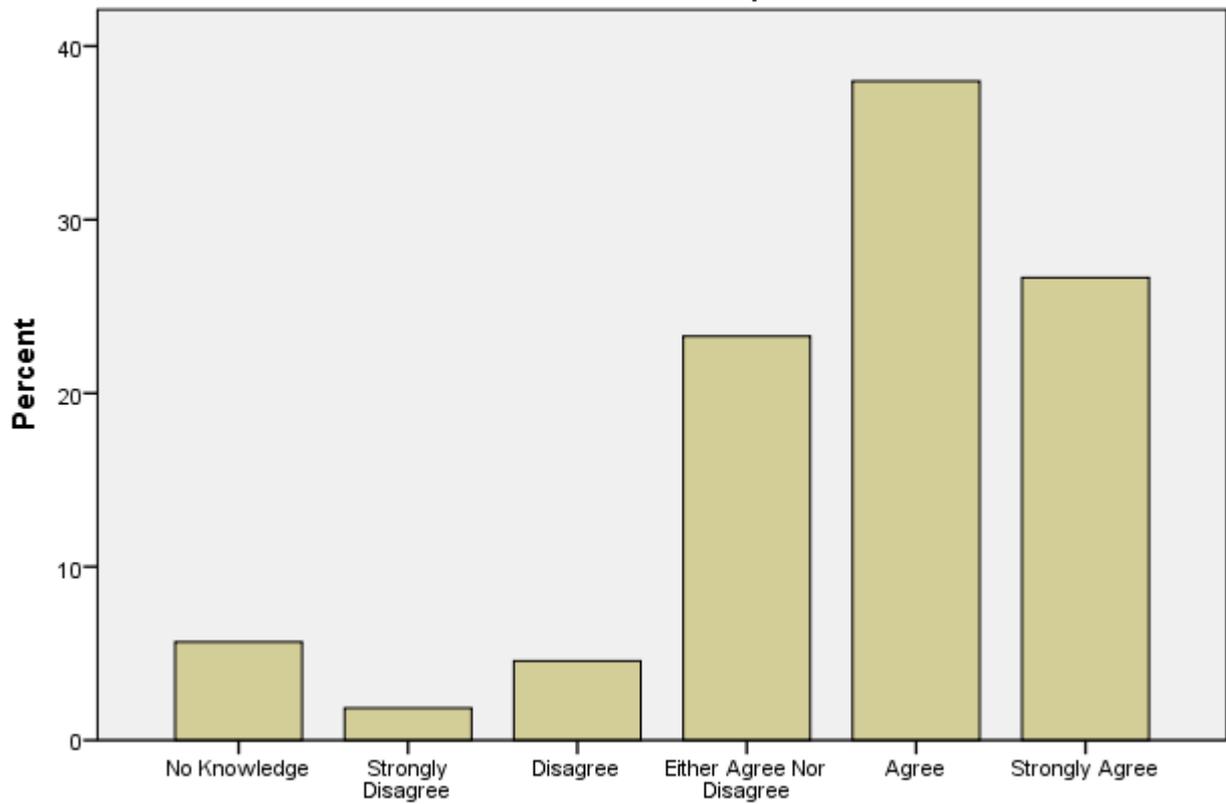
Establish student groups with a focus on sustainability.

Encourage student groups to participate in sustainability initiatives.



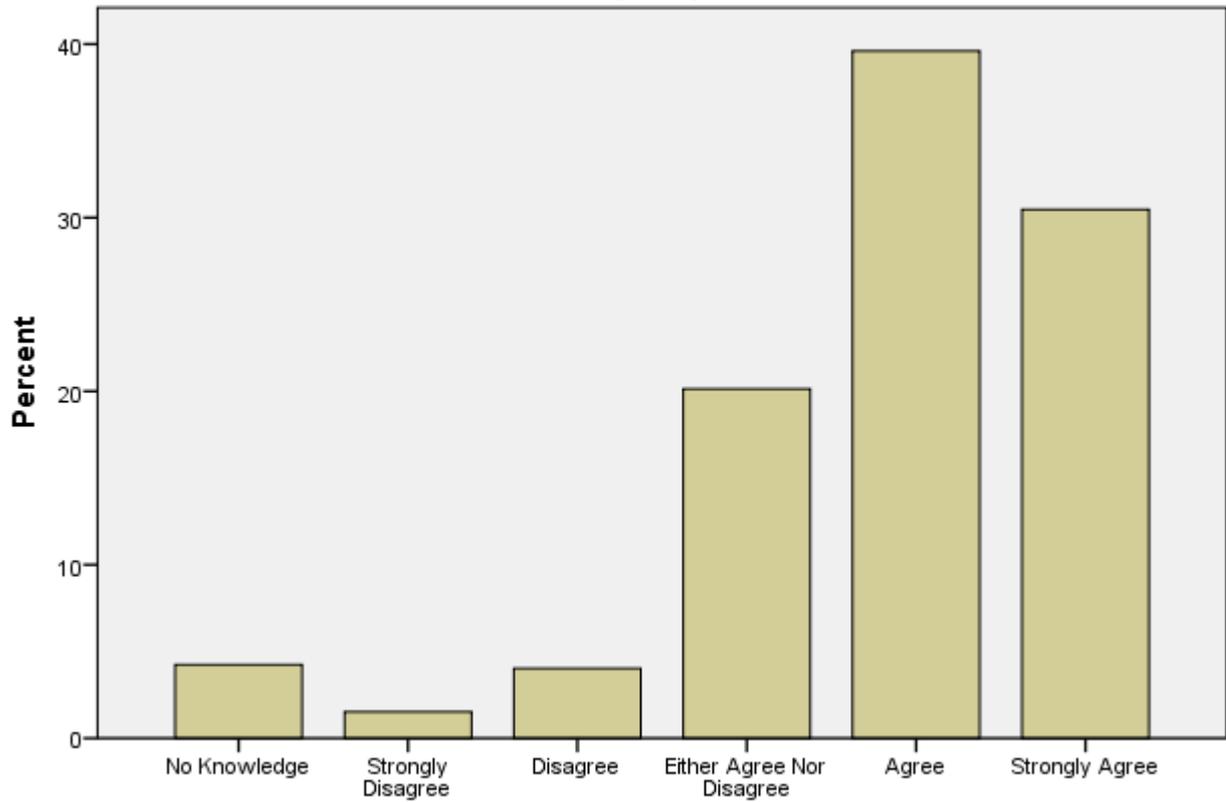
Encourage student groups to participate in sustainability initiatives.

Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises.



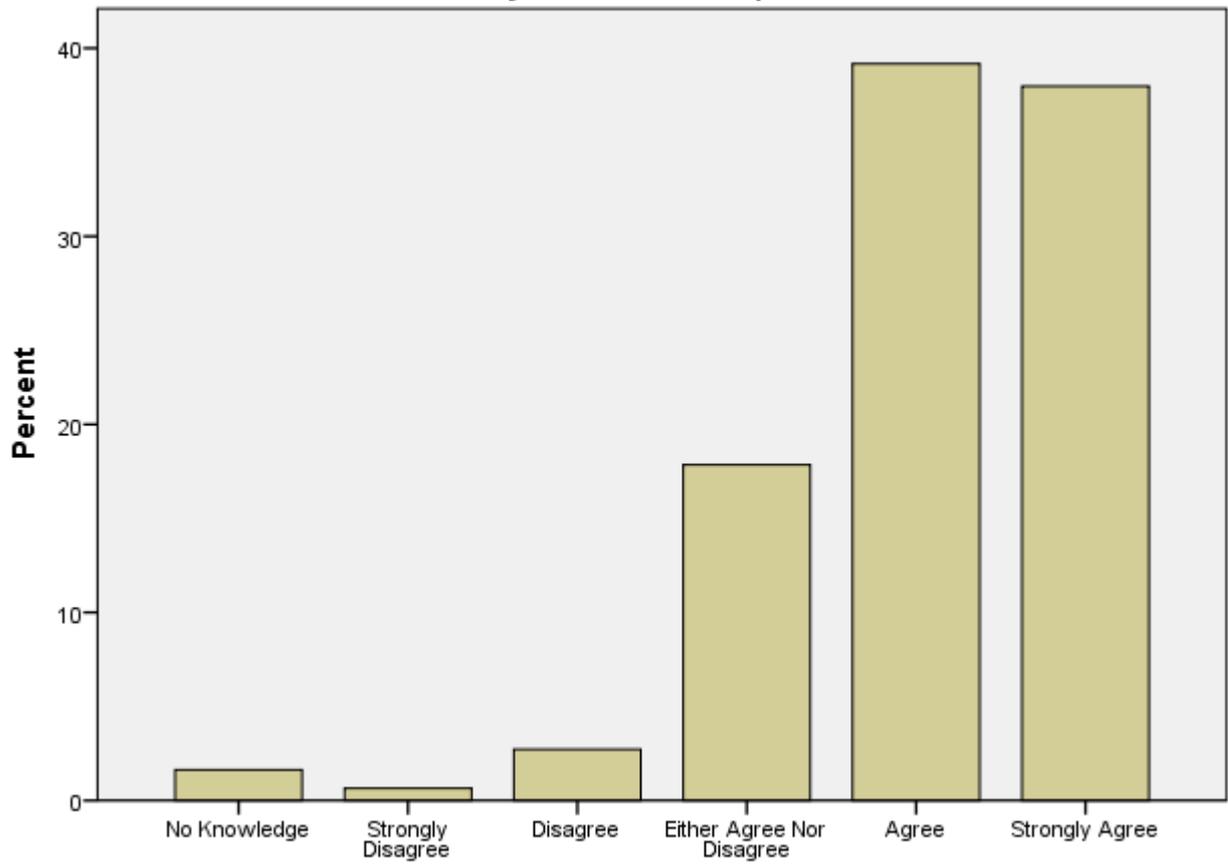
Encourage students to consider job fairs and career counselling focused on work in sustainable enterprises.

Encourage students to support enterprises that pledge to be socially and environmentally responsible.



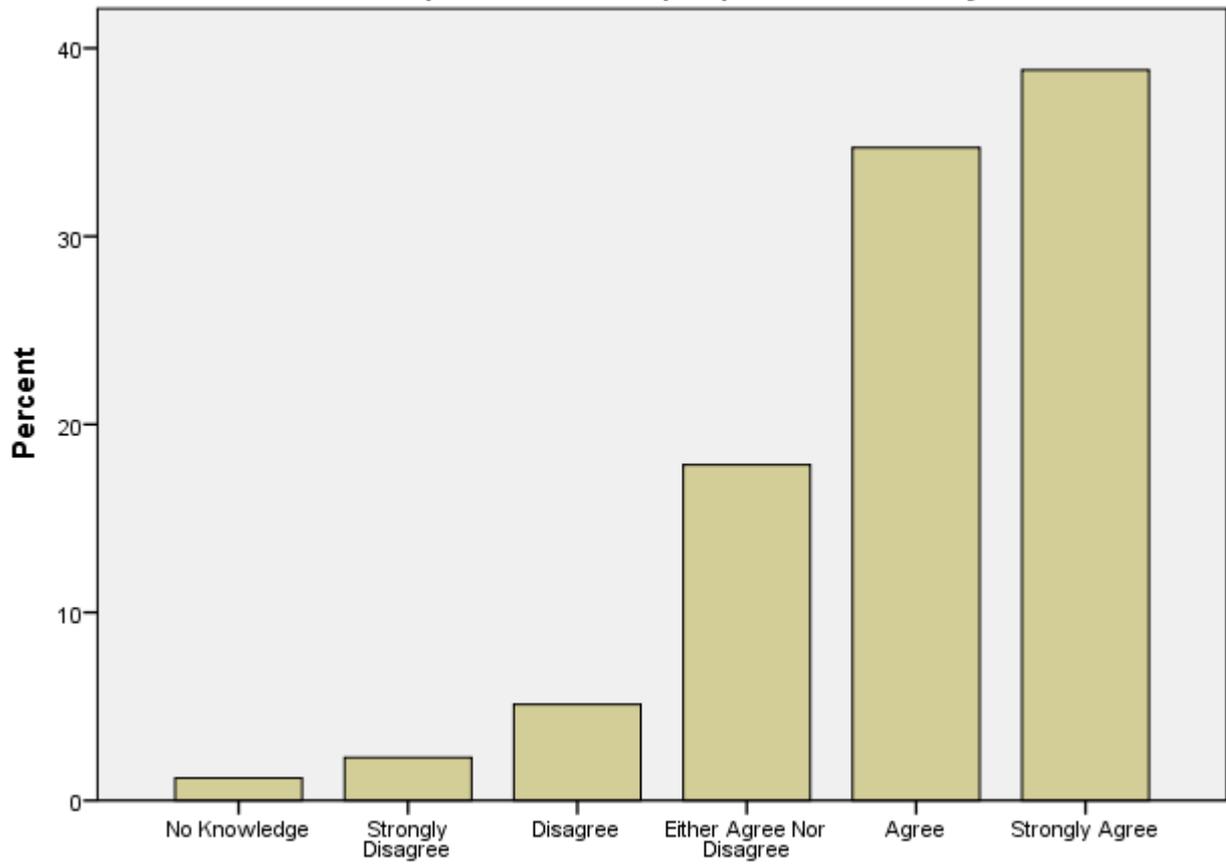
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Security within the campus.



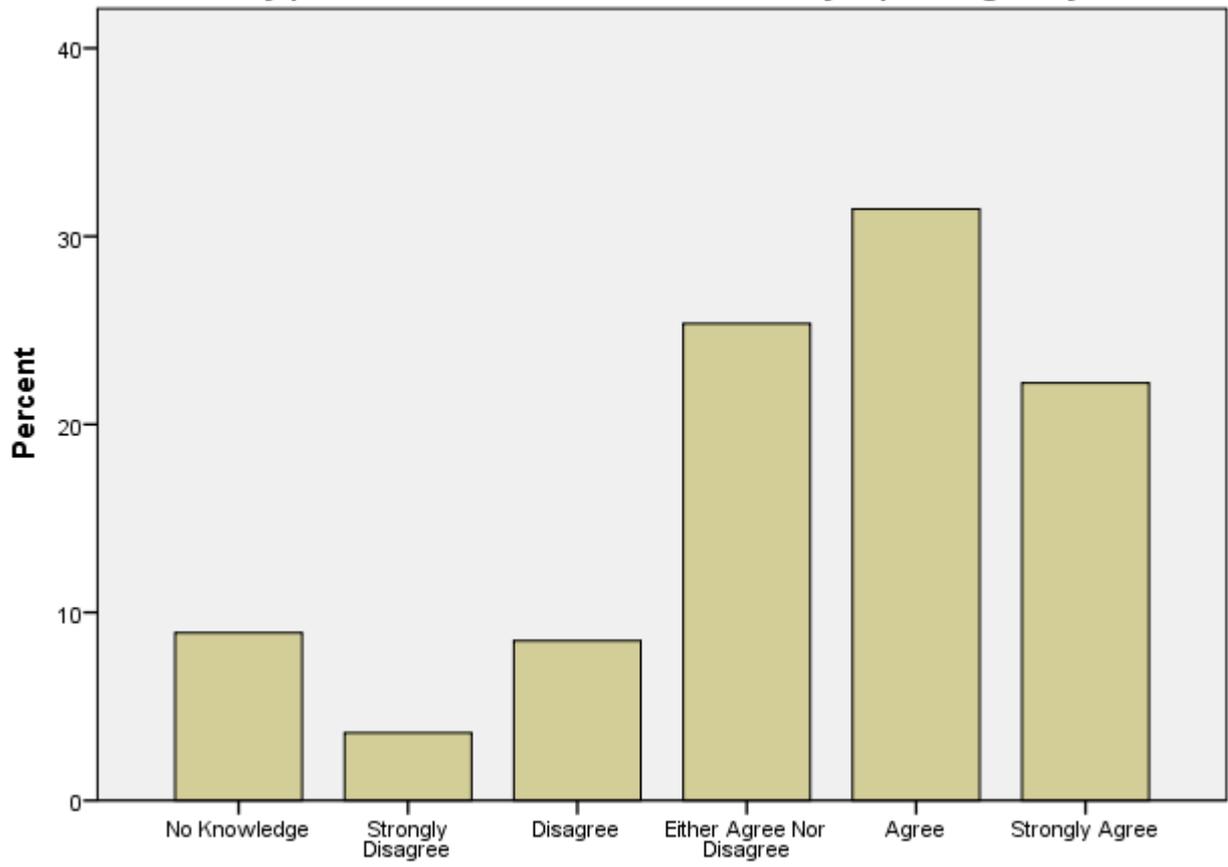
Security within the campus.

Provide adequate access to people with disability.



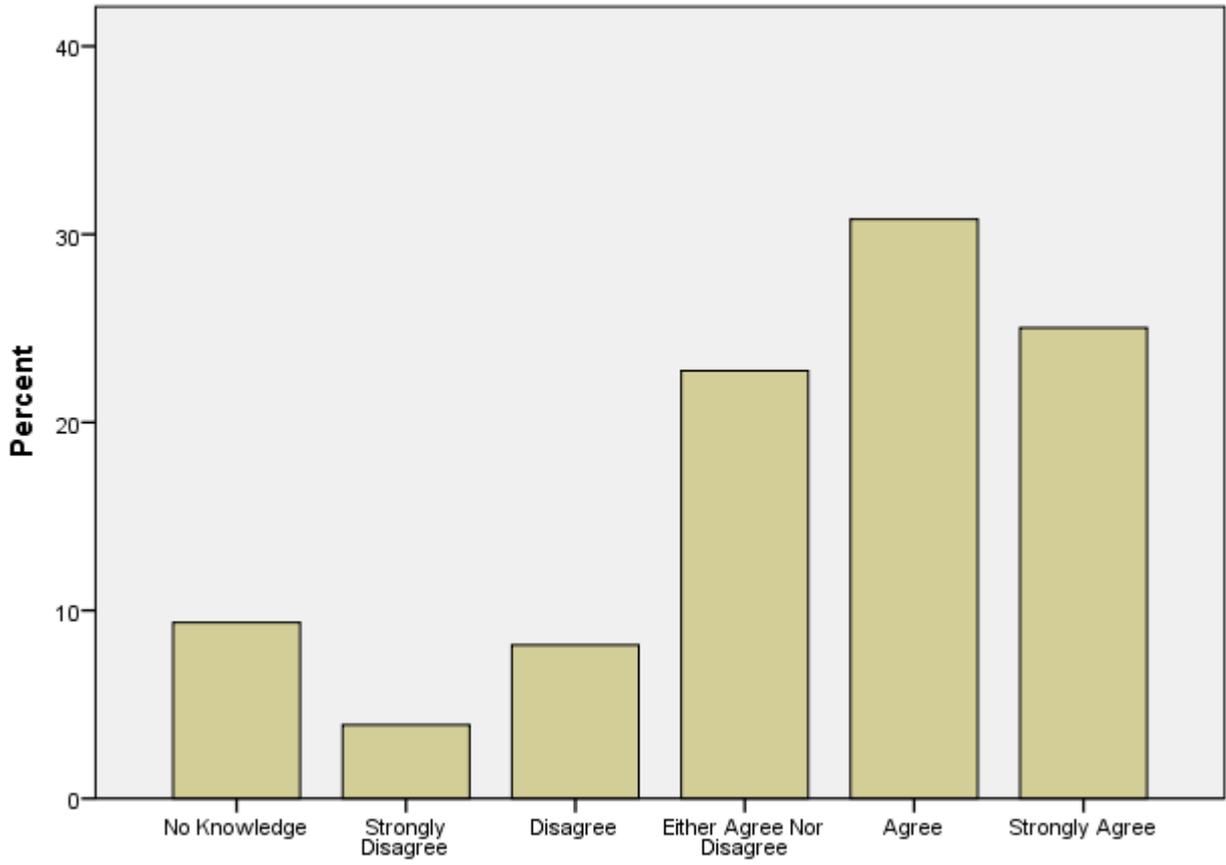
Provide adequate access to people with disability.

University publishes stand-alone sustainability report regularly.



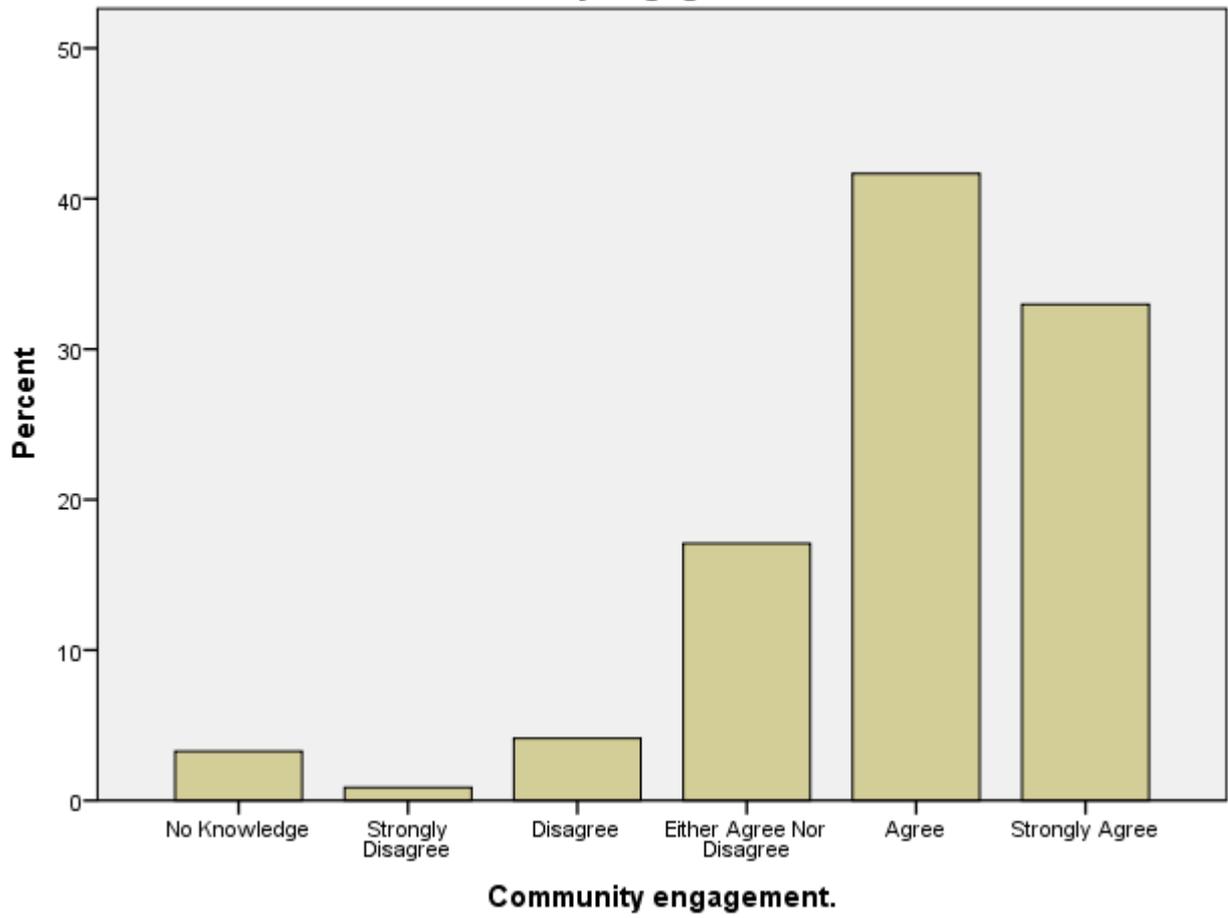
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University has a dedicated website for campus sustainability.

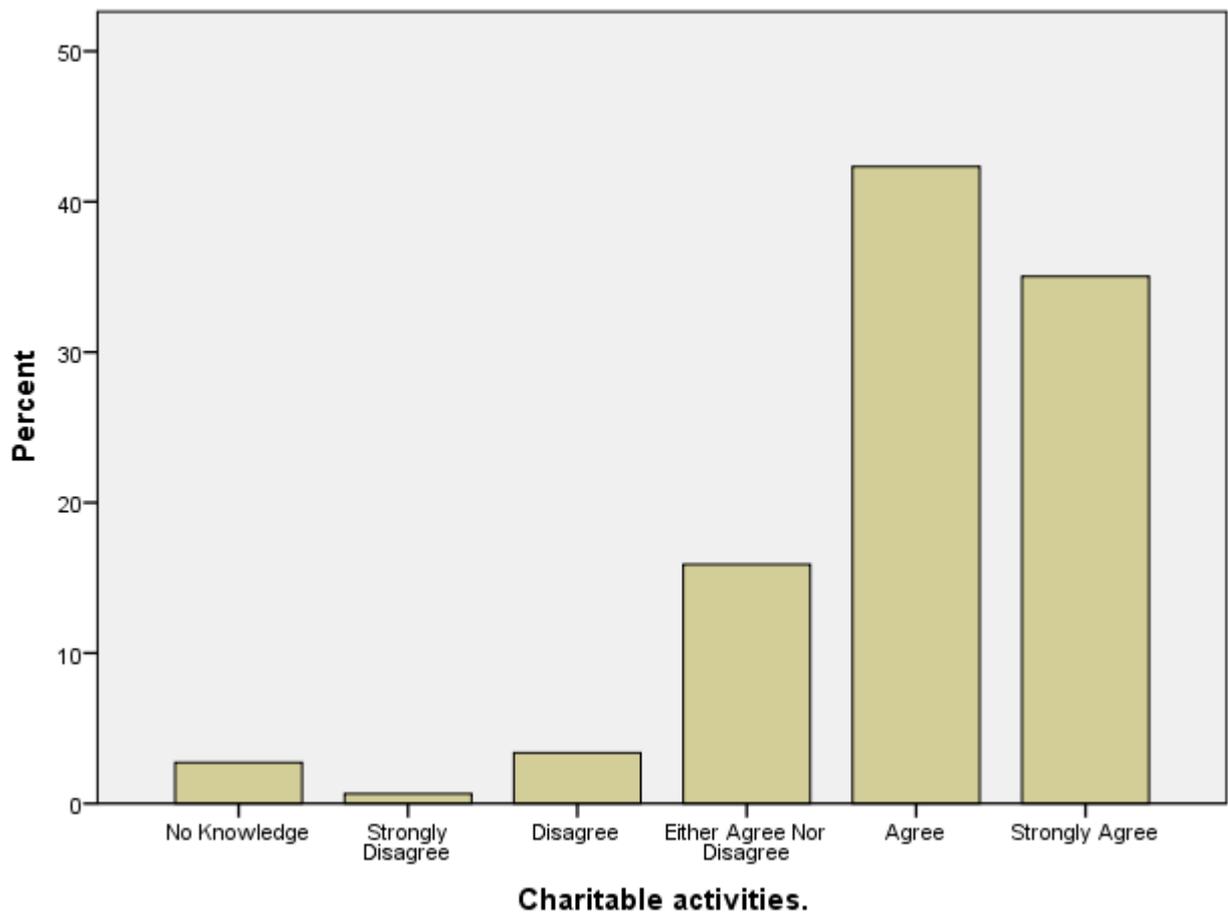


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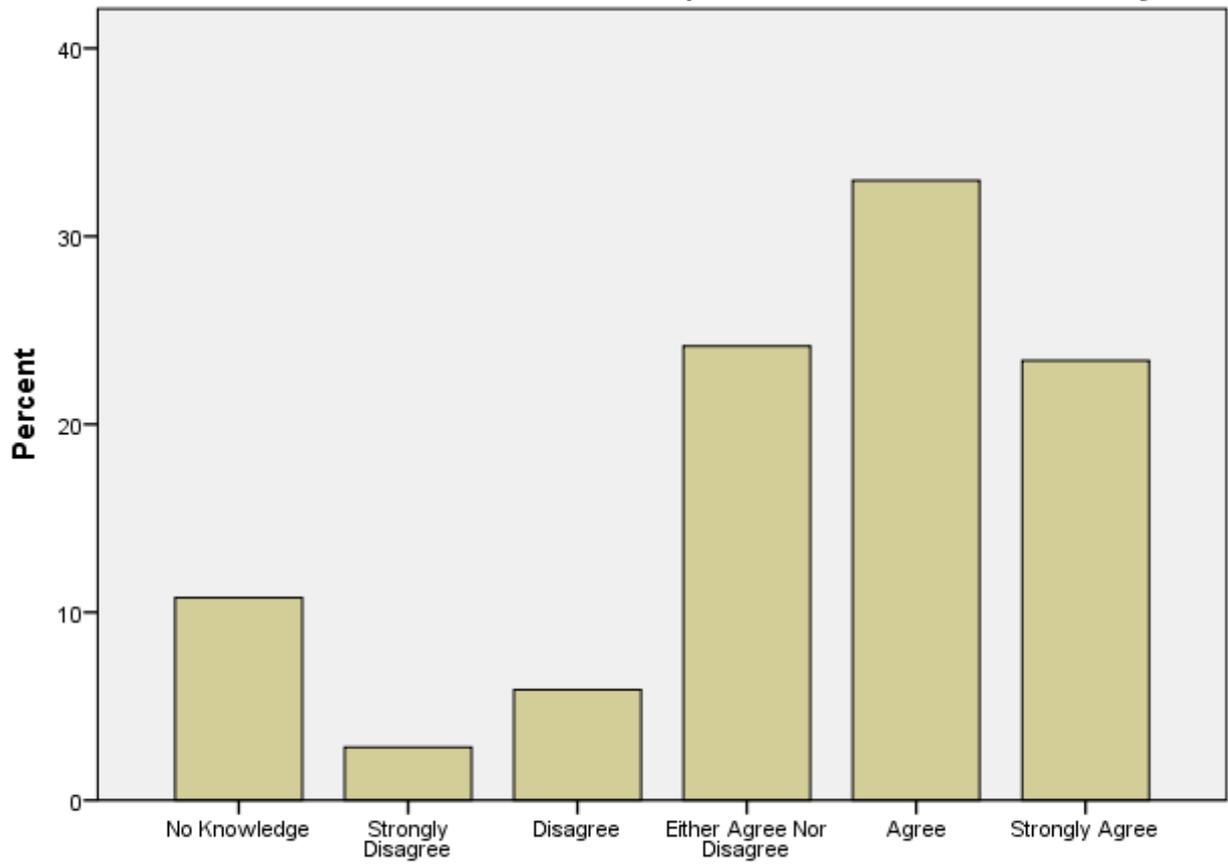
Community engagement.



Charitable activities.

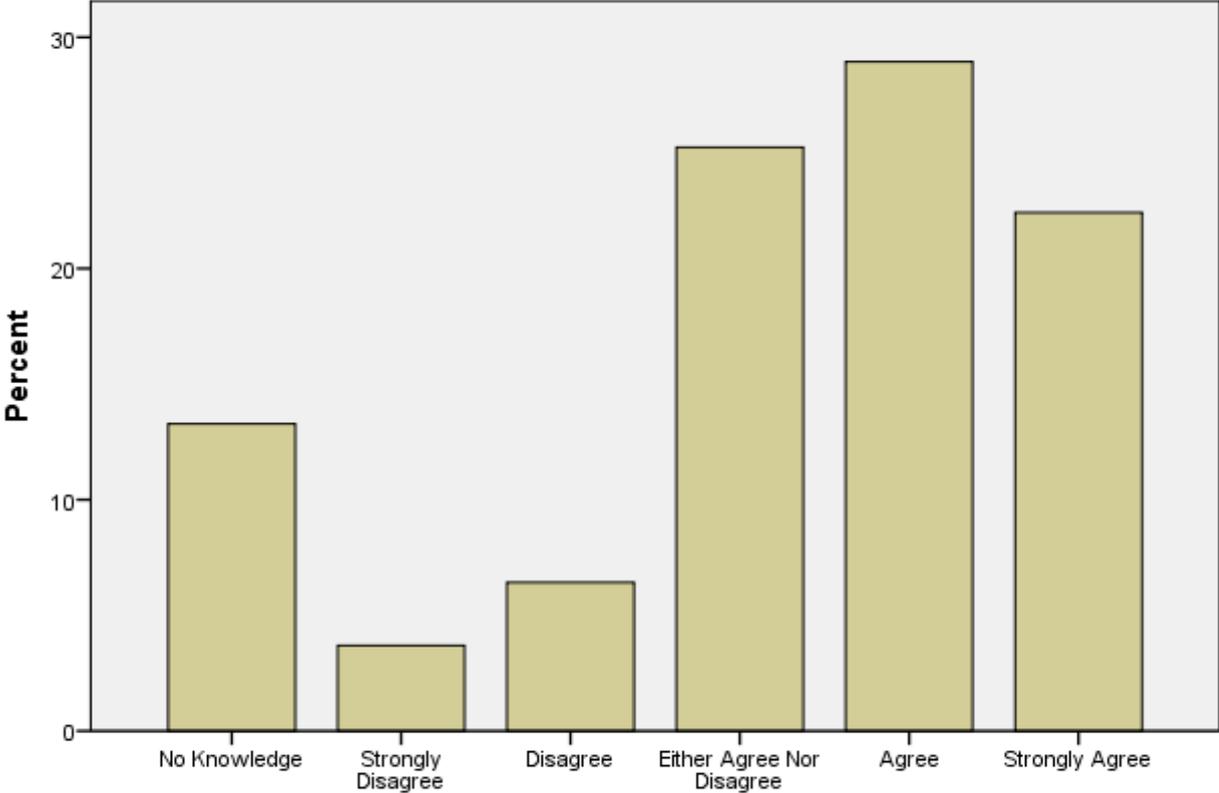


Has a dedicated section in their annual report dedicated to sustainability.



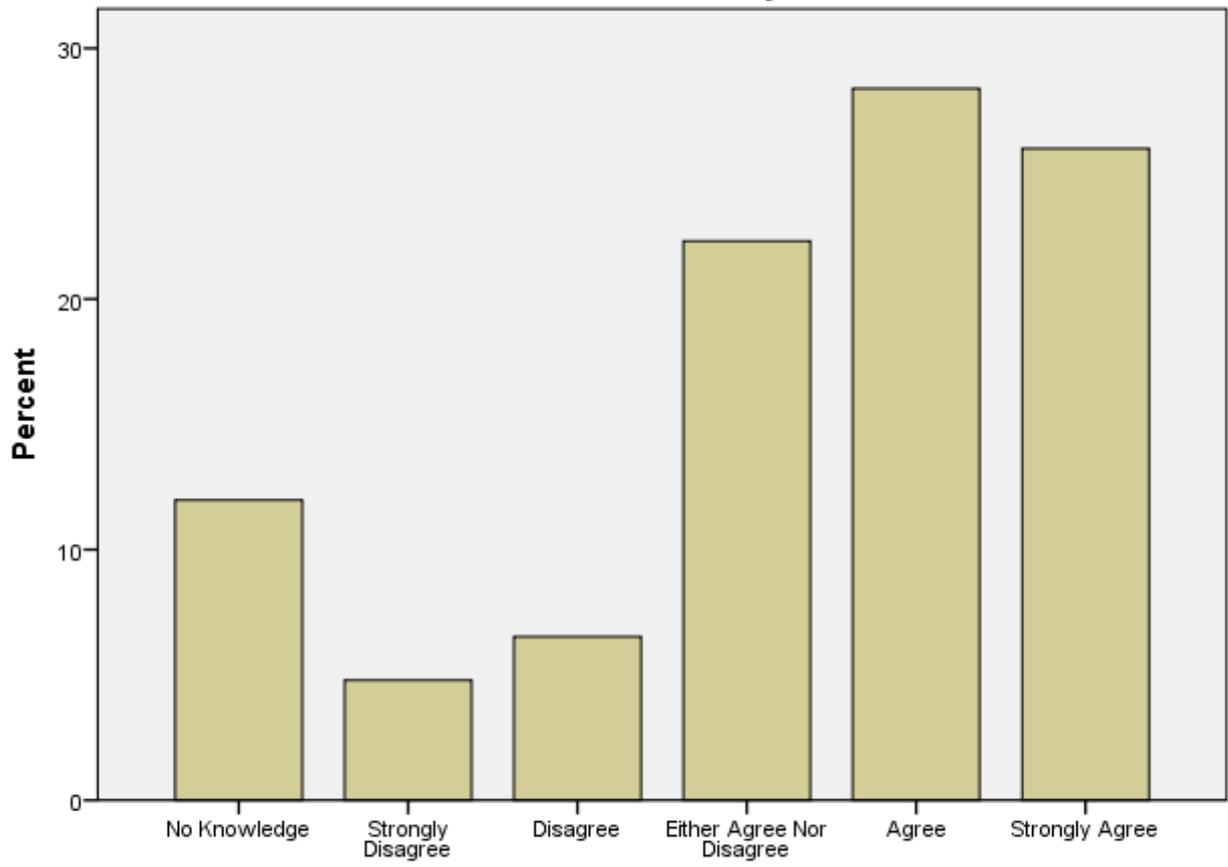
Has a dedicated section in their annual report dedicated to sustainability.

University is accredited by independent organisation such as Global Reporting Initiative.



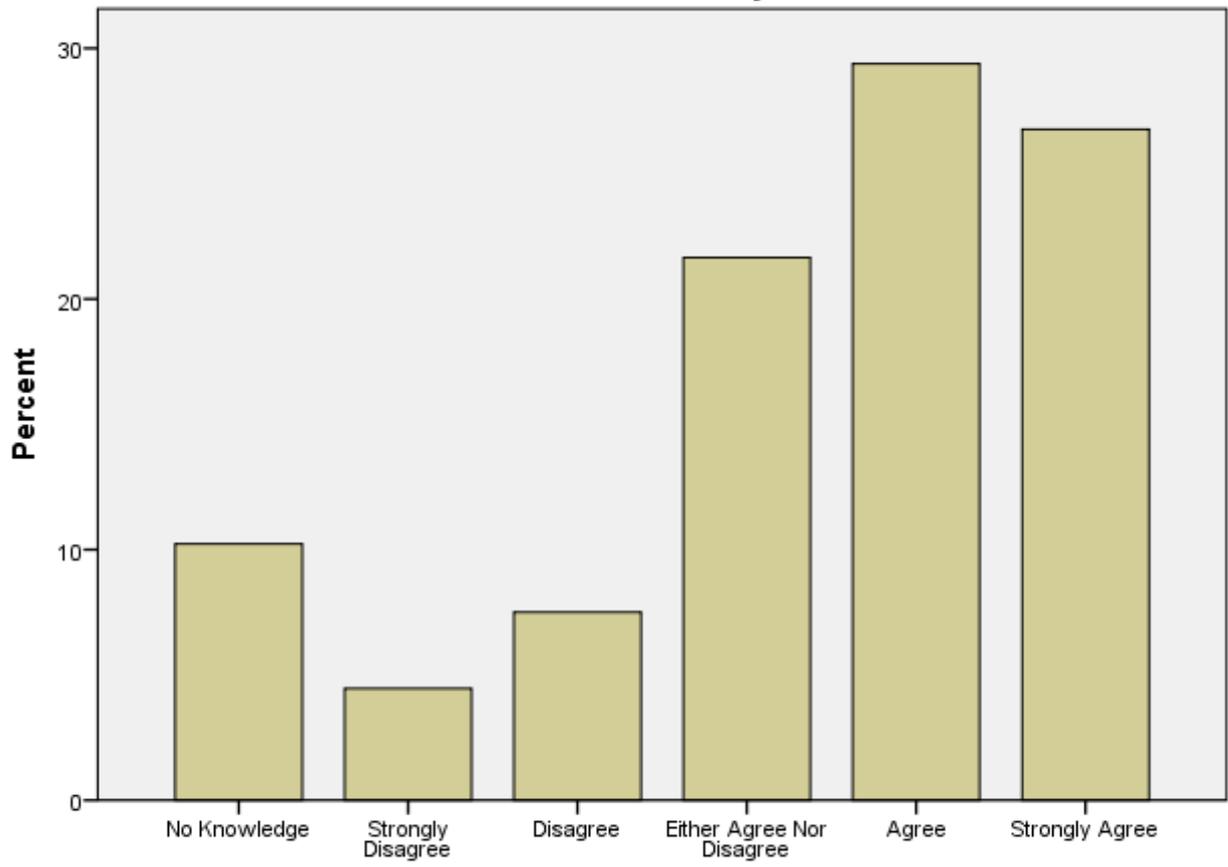
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Has a dedicated sustainability officer.



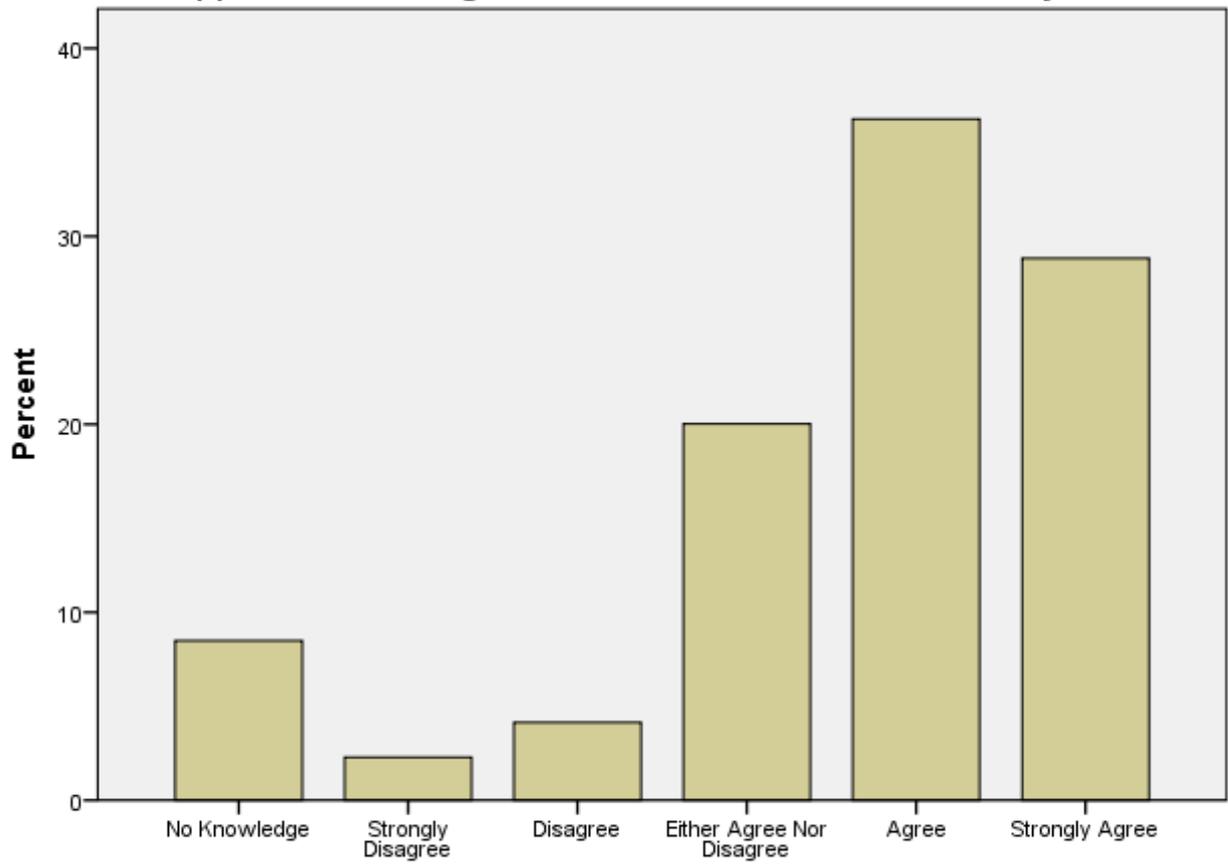
Has a dedicated sustainability officer.

Has a dedicated sustainability division.



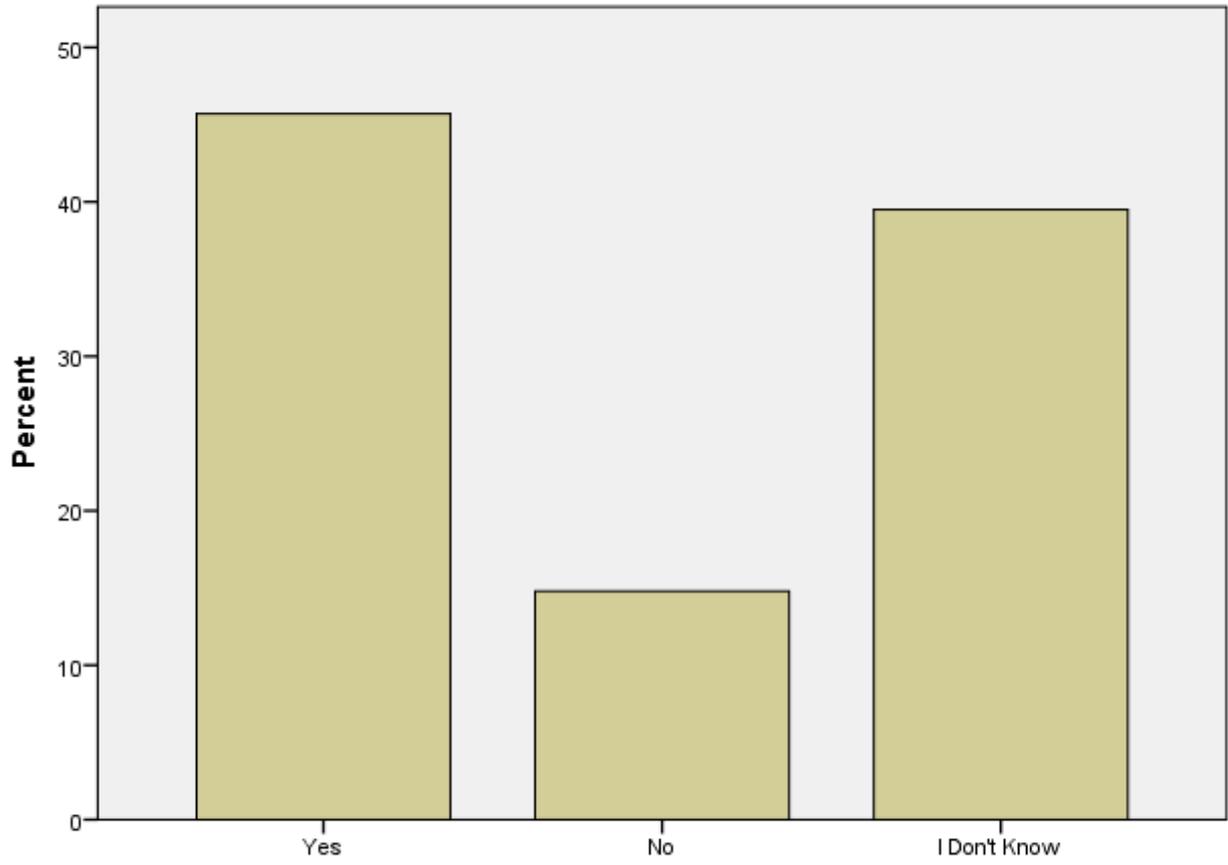
Has a dedicated sustainability division.

Supports outside organisations that focus on sustainability.



Supports outside organisations that focus on sustainability.

Do your university have any specific unit on sustainability?



Do your university have any specific unit on sustainability?

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