

THE RESIDENTS OF UNIVERSITY MALAYSIA SABAH (UMS) LEVEL OF UNDERSTANDING AND PRACTICES TOWARDS A SUSTAINABLE CAMPUS

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ABSTRACT

Universiti Malaysia Sabah (UMS) created a history by being recognized as the first university and a higher education in Malaysia to launch the first EcoCampus Action Plan and ranked 44th IU-GreenMetric Campus in the world. The plan was implemented for the purpose of fostering practices of preserving the environment among the campus community. This is a preliminary study and aims to determine the level of understanding and practices of sustainability in campus. Primary data were gathered from 65 random samplings from UMS's students and staffs. The findings show that although the awareness of campus sustainability in UMS is high, their willingness to adopt the practices is still at a moderate level, it was proven that the management of the EcoCampus gives strong commitment to adopt sustainability efforts within the campus. Nevertheless, weaknesses still exist and improvements need to be made from time to time.

Keywords: Sustainable Campus, Understanding, Practices, Community Campus

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1. INTRODUCTION

Sustainable campus is defined as an institute of higher learning practicing and promoting the reduction of negative impact on the use of environmental resources, economic, and social development to meet the educational and research needs [1]. The implementation of sustainable campus in the institutes of higher learning in Malaysia is seen to be widespread, in an effort to preserve the environmental sustainability for the future and narrowing the gap between research and society, an as acting conveyor of knowledge to the public. Universities also play a role in sustainable development through the process of management, planning, development, education, research, operations, community service, procurement, transportation, design, construction of new buildings, renovations, and retrofit. To strengthen the role of University Malaysia Sabah (UMS) as an educational institution that is respected, the former Vice Chancellor, Prof. Dr. Mohd. Harun Abdullah had inspired the introduction of this institution as a sustainable campus for the realization of the sustainable development idea. Currently, UMS is the only university that has set a target to become an eco-campus by 2018 [2]. The Centre for EcoCampus Management was established in 2013 with five core values, namely: sustainable development, ecological protection, resource conservation, environmental stewardship and environmental compatibility [3]. Indirectly, it educates and instills knowledge of sustainability among the campus community to be practiced in their daily life. Thus, awareness, knowledge, and application of the principles of sustainability in higher learning institutions are viewed as something that cannot be ignored [4]. Furthermore, majority of the campus community consist of the staffs and students of the university [5].

1.1 Literature Review

Studies on knowledge, attitude, and behaviour of the Universiti Pendidikan Sultan Ismail's (UPSI) students toward the principles of campus sustainability found that the level of awareness, knowledge, and attitude that are positive for the implementation of the principles of a sustainable campus do not necessarily guarantee the outstanding sustainable practices among them [4]. Encouragement of sustainable behaviours among UPSI's students requires elements of other situations such as enforcement or recognition to be implemented. In National University of Malaysia (UKM), the students' awareness on the environment is high,

however the practices conducted in the environment are at a medium level [6]. It is not very different from the study among UKM employees whereby there are weaknesses in science and sustainable development activities, however, they realize that apart from learning about the importance of protecting the environment, they can also contribute ideas for the implementation of UKM's sustainability [7]. The main obstacles in the establishment of a sustainable campus at a university in Australia are the low level of awareness, knowledge, and understanding of sustainability among the staff [8]. The issue in Green University initiatives is poor awareness about the concept of sustainability among the campus community [9]. Therefore, the objective of this study is to identify the level of understanding and practice among the students and staff of UMS campus on sustainability efforts, and review their willingness to practice them in their daily lives.

1.2 Conceptual Framework

The conceptual framework of the initial survey of UMS community with the knowledge and awareness of sustainability practices is shown in the **Fig.1**. The earlier researchers' review has assisted in identifying two objectives; to identify the level of knowledge, understanding, and awareness of the students and staffs on UMS's sustainable campus, and to review their readiness to practice it. Thus, knowledge plays an important role in finding out the extent of their understanding on sustainability efforts that have been implemented by EcoCampus Management.

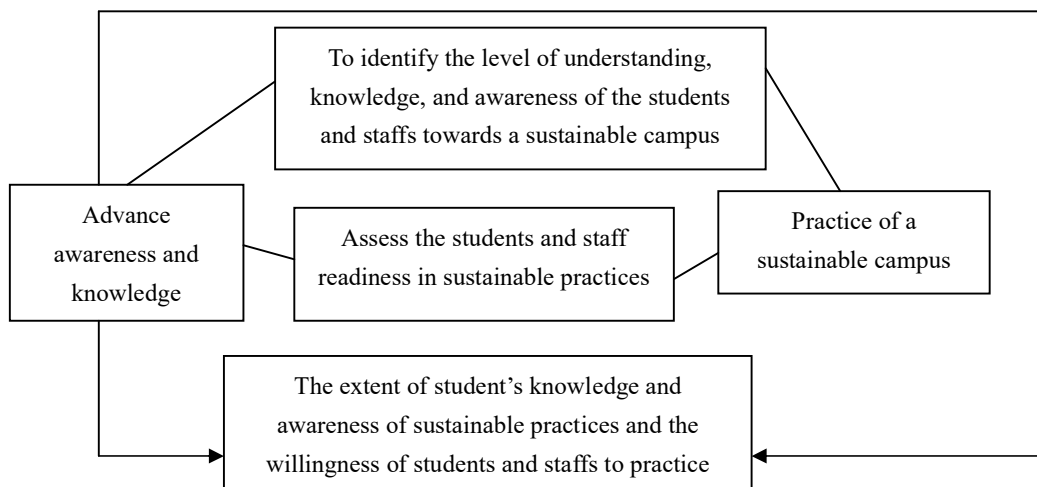


Fig.1. Conceptual framework

Source: Adapted from [10] [11] [13]

3. METHODOLOGY

The study involved 65 participants, including the students and staffs (academic and non-academic) working in UMS. The random sampling method was applied performed and the instrument used was a questionnaire. There are four parts, namely Part A (profile of respondents), Part B (understanding of the campus sustainability), Part C (consisting of two sections; economic and design sections). This section used Likert Scale, which consists of a selection of answers 'strongly agreed', 'agree', 'neutral', 'disagree' and 'strongly disagree'. Suggestions and improvements proposed by the respondents are placed in Part D. Statistical Package for Social Sciences (SPSS) version 21 was used as a method of collecting and processing data and analyzed in the form of crosstab, frequency and descriptive statistics.

4. RESULTS AND DISCUSSION

Table 1 shows the respondents distribution of demographic profile. Female staff category represented the majority of respondents with a total of 22 people (53.7%) and the highest average age was 41 years, which is 7 people (17.1%). For the student category, the total number is 13 (54.2%) male respondents were more than 11 people (45.8%) female, and their average age is between 18 to 25 years old, which is 15 people (62.5%). Degree is the highest level of education for the UKM's staff, which is 17 people (41.5%) and 16 people (39%) most of them working in the Faculty of Business, Economics and Accounting. For the student category, six people (75%) have a degree as their highest education level, and the majority of them are students of the Biotechnology Research Institute, which is 15 people (62.5%).

Table 1. Profile of the Respondents

Criteria	Staffs	(%)	Students	(%)
Gender				
-Male	19	46.3	13	54.2
-Female	22	53.7	11	45.8
Age				
-18-25 years old	6	14.6	15	62.5
-26-30 years old	15	36.6	9	37.5
-31-40 years old	13	31.7	-	-
-41 years old and above	7	17.1	-	-
Education Level				
-PMR/SPM/STPM/ Diploma	9	22.0	1	12.5
-Degree	17	41.5	6	75.0
-Master	11	26.8	1	12.5
-PhD	4	9.8	-	-
Faculty/Department				
-Faculty of Business, Economics & Accountancy	16	39.0	5	20.8
-Faculty of Psychology & Education	4	9.8	-	-
-Biotechnology Research Institute	5	12.2	15	62.5
-Development & Maintenance Department	1	2.4	-	-
-Registrar's Department	1	2.4	-	-
-Dept. of Information	8	19.5	-	-

Technology & Communication				
-Preparatory Centre for Science & Technology	6	14.6	2	8.3
-Center for Research & Innovation	-	-	1	4.2
-Faculty of Science & Natural Resources	-	-	1	4.2

4.1 Understanding the Sustainable Campus

This section identifies the campus community's level of understanding in the preservation of their university campus. An individual who has the awareness and understanding will be able to understand more about sustainability [10]. As explained, the sustainable campus was first introduced in UMS in 2013 and operates under the EcoCampus management. According to **Table 2**, a total of 18 respondents from the staff stated that sustainability is a collaboration of the campus community towards sustainability of their campus. It is in line with the opinion of the students (11 respondents) who chose the same concepts as their first choice. They believe that strong partnerships and sound ability within the campus community are able to empower UMS to become a successful and sustainable campus.

Table 2. Understanding campus sustainability

Criteria	Staff	Students
Reuse all resources in the campus.	9	3
A strategy to improve sustainable performances in the university.	12	5
A concept to increase awareness among employees and students about sustainability.	7	5
Collaboration among campus community towards a safe environment for the population.	18	11

Although the respondents said that they knew the identity of a campus that has executed the sustainable campus, the fact is they do not know about The *Talloires Declaration* (refer to **Table 3**). This declaration is very closely tied to the preservation of the campus, as it is a declaration that promotes the concept of sustainability in higher learning institutions and held in October 1990 in Talloires, France. Only four staff knew about this declaration, and the rest chose to answer “no” (22 respondents) and not sure (12 respondents). Furthermore, for the students, they do not know this declaration which a total of 15 respondents answered “no” and four respondents answering “not sure”.

Table 3. Do you know the *Talloires Declaration*?

Criteria	Staff	Students
Yes	4	-
No	22	15
Not sure	12	4

Almost all respondents stated that they are interested in participating or practicing the concept of sustainability in the college campus, a total of 35 staffs said yes, followed by 16 students (refer **Table 4**). Although they are less aware of the *Talloires Declaration*, their willingness to

participate or practice the concept of sustainability is commendable due to their awareness of the importance a sustainable concept to be implemented for the well-being of the present and future generation especially the campus community.

Table 4. Practice campus sustainability in the campus?

Criteria	Staff	Students
Yes	4	-
No	22	15
Not sure	12	4

4.2 Economic Section

4.2.2 Energy Management

Table 5 shows the sustainability practices carried out by the respondents on campus in energy management. A total of 59 respondents (90.8%) stated that they ‘strongly agree’ to reminding themselves to always turn off the lights before they leave the campus room. It is followed by the practices of turning off the electricity supply when not in use, which accounted for 83.1%, using the washing machine only in full load (67.7%), leaving the laptop in a “safe mode” when not in use (66.2%), and using a light detecting automatic movement in the house at 56.9%.

4.2.3 Water Management

Water is a key element in human survival. Good, systematic water management enables the college communities to manage their lives in a comfortable condition. A total of 39 respondents (60%) agreed that they would report cases of water leakage to the relevant authorities in an effort to save water, the same percentage (60%) as they practice on washing machine usage (refer **Table 6**). Activities like closing the tap while brushing their teeth and using body shampoo are the second highest practice by the respondents at 58.5%. However, as many as 24 respondents (36.9%) said they “strongly agree” to having used excessive water when using the toilet and only 22 respondents (33.8%) are “neutral” towards the practice of taking shorter showers.

Table 5. How do you practice energy savings

Criteria	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
	Switch off the power supply when not in use.	54	83.1	7	10.8	4	6.2	-	-	-
Always make sure lights are turned off before leaving the room.	59	90.8	5	7.7	1	1.5	-	-	-	-
Use the washing machine only with a full load.	44	67.7	9	13.8	10	15.4	1	1.5	1	1.5
Leave the laptop in power safe mode when not in use.	43	66.2	11	16.9	10	15.4	1	1.5	-	-
Use motion detector lights in the house.	37	56.9	8	12.3	15	23.1	3	4.6	2	3.1

Table 6. Do you practice these activities in your daily life?

Criteria	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
Report water leakages.	39	60.0	17	26.2	7	10.8	2	3.1	-	-
Turn off the tap when brushing teeth and applying shampoo.	38	58.5	18	27.7	6	9.2	3	4.6	-	-
Start the washing machine after fully loaded.	39	60.0	13	20.0	11	16.9	1	1.5	1	1.5
Flushing the toilet unnecessarily.	11	16.9	11	16.9	11	16.9	8	12.3	24	36.9
Take short showers.	18	27.7	16	2.6	22	33.8	5	7.7	4	6.2

4.2.3 Waste Management

Waste management is one of the key elements in campus sustainability. Among the practices applied by the respondents in support of waste management is to recycle items such as plastic bottles, glass bottles, clothes, and books whereby 47.7% of the respondents recorded their response as “strongly agree”. Respondents also stated that they “strongly agree” in the practice of bringing their own containers to the cafeteria, which amounted to 35.4% (see **Table 7**). In addition, as many as 50.8% of the respondents “strongly agree” to supporting the practice of recycling products such as furniture, papers, and household items. Meanwhile, the practice of printing a document double-sided was the second highest by respondents who responded “strongly agree” at 56.9%. Making arrangements for digitization practices such as e-mail to replace letters and digital receipts received a response of 80% from the respondents who “strongly agreed” to the effort of reducing paper consumption. It is proven that the respondents welcomed the recommendations of the Vice Chancellor to minimize the use of paper.

Table 7: Do you practice these activities to contribute to proper waste management?

Criteria	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
Recycling of used good, such as plastic bottles, bottles, clothing, books.	31	47.7	21	32.3	7	10.8	6	9.2	-	-
Bring own food container to cafe.	23	35.4	22	33.8	12	18.5	7	10.8	1	1.5
Encourage recycling products such as furniture, papers, and household items.	33	50.8	20	30.8	9	13.8	3	4.6	-	-
Print documents double-sided.	37	56.9	23	35.4	4	6.2	1	1.5	-	-
Prefer digitalization (use email instead of letter, digital receipt, softcopy instead of hardcopy).	52	80.0	11	16.9	2	3.1	-	-	-	-

4.3 Design Section

4.3.1 Infrastructure and Facilities

This section shows the respondents’ perceptions of the infrastructure and facilities available at the university. The study found that the UMS’s staffs agreed that their university has good infrastructure and facilities and is, environmentally friendly, in which a total of 25 respondents answered “yes”. However, for the students, the number of respondents who answered “yes” and “not sure” is the same, proving that half of them found that the UMS infrastructure and facilities to be environmentally sound and in good condition, while the other half were uncertain. The same situation applies to the question, “Have you ever heard of Green Technology in your campus?” For the staff category, the number of respondents who

answered “no” and “not sure” is the same (3 respondents). However, most of the respondents answered “yes”, a total of 35 respondents, and the majority of the students knew about Green Technology (17 respondents) which proves they clearly understand the concept of Green Technology. In addition, the use of public transport is one of the practices that can be implemented by the campus community to reduce carbon dioxide pollution. However, based on **Table 8**, most of the respondents prefer to use their own transport compared to using the public transport. A total of 33 staff and 13 students choose to use their own transport as a more comfortable way to move around in the campus. When asked about their opinion, both of respondents (students and staffs) stated that would be easier for them to use their own transport, in terms of convenience, not having to wait long, as well as reduce costs and save time. Living far away from the campus also contributes to the decision of the respondents to use their own transport.

Table 8. Do you prefer public transport or own transport in the campus?

Criteria	Staff	Students
Public transport	8	11
Own transport	33	13

4.4. Suggestions and Improvements

Although awareness of campus sustainability in UMS is high, their willingness to adopt the practice is still at a moderate level. This is aggravated by lack of activities among the campus management, students and staffs. While the announcement regarding the sustainable campus was widely conducted either in the form of graphics or advertising, lack of enforcement has made these efforts less successful. Furthermore, the attitude of some of the campus community in overlooking the concept of sustainable campus does not help the cause. Thus, some respondents suggested that more improvements should be implemented, including organizing more activities which involve the entire campus and not just focusing on students. Training workshops on campus sustainability should be actively promoted. Respondents also suggested that the management of UMS should use water from the water catchment tank to water the plants in an effort to conserve the water. The use of shuttle busses should also be propagated for practices of reducing carbon dioxide gas which contributes to global warming.

5. CONCLUSION

The level of understanding among the students and staffs about campus sustainability is high, but their willingness to practice is at the moderate level. It proves that the EcoCampus management gives a strong commitment to adopt the sustainability efforts within the campus. Nevertheless, weaknesses still exist and improvements need to be made from time to time.

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