

## SUSTAINABILITY AWARENESS OF STUDENTS FROM A GREEN UNIVERSITY IN SABAH, MALAYSIA

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**Abstract:** *The Green campus has become a trend and it has also become an important factor for higher education providers in their bid to create a conducive learning experience for college students. The green campus concept endeavours to extend learning beyond the campus learning settings to develop responsible attitudes and commitment to the environment, both at home and in the wider community. Labelled as a boutique green university, it is timely to examine University College Sabah Foundation (UCSF) students' sustainability awareness to find out if the green campus concept has made them more aware of their surroundings. The sample is drawn from the current UCSF students from six programmes. Quantitative research using questionnaire survey is used to measure the level of sustainability awareness of the students and to examine the relationship of the dependent variable (sustainability awareness index) with three independent variables - sustainability knowledge, behavioural attitude and sustainability information. Data collected is analysed using SPSS. Results from the study showed that sustainability knowledge and sustainability information have a significant influence in determining the level of sustainability awareness of the students. Based on the results obtained in this study, it can be deduced that efforts to further increase the awareness of the students can come from formal education and through the dissemination of sustainability information.*

**Keywords:** *Sustainability Awareness; Sustainability Knowledge; Sustainability Information; Behavioural Attitude; Green Campus*

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### Introduction

According to the United Nations (UN), climate change has become a defining issue because its impacts are global in scope and unprecedented in scale (UN, n.d.). As a result of the issue of climate change, sustainable development has become synonymous with every facet of developed as well as developing societies. The latest trend is for universities and colleges to adopt the sustainability concept in what is popularly known as the green campus concept.

In Malaysia, the government is committed to promote sustainable development on the young generation. This is evident in the inclusion of the concept in the country's education system at all education levels (Foo, 2013). The goal is to educate and to bring about awareness to the young generation on the importance of sustaining human needs and preserving the environment for the future.

According to Foo (2013) and Ahmad, Noor & Ismail (2015), educational institutions in the country including Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM) and Universiti Teknologi Mara (UiTM) have played active roles in sustainable development through various programmes.

At Sabah, Malaysia, University College Sabah Foundation (UCSF) has taken a lead role in cultivating the culture and practice of sustainability development through its green university concept. A study to examine sustainability awareness of its students is therefore timely and will contribute to new knowledge.

### **Problem Statement**

As a new university (established in the late 2014), UCSF made a bold move to embrace the green concept through the labelling of its new institution as a boutique green university. Some efforts have been made to implement sustainability activities within the campus. However, no study has been conducted to determine the level of sustainability awareness of the students. A research study to conduct a survey on the students' knowledge and attitudes toward the environment is therefore timely. The findings from this study would be used as a guide by the university to further enhance their greening efforts.

### **Research Objective**

The purpose of this study is three-fold: firstly, to examine the association between sustainability knowledge, behavioural attitude and sustainability information and sustainability awareness of UCSF students, secondly, to determine the level of sustainability awareness of UCSF students and thirdly, to propose effective greening mechanisms that will further enhance sustainability awareness of UCSF students.

### **Research Question**

Therefore, this study is guided by the following key research question:

*'Does sustainability knowledge, behavioural attitude and sustainability information influence sustainability awareness of UCSF students?'*

### **Research Scope**

This study will determine the level of awareness of UCSF students based on a sustainability awareness index and will examine the association of three independent variables, namely, sustainability knowledge, behavioural attitude and sustainability information and their influence on sustainability awareness. These variables have been examined in prior studies (Sivamoorthy, Nalini, & Kumar, 2013; Ahmad et al., 2015; Mahat & Idrus, 2016; and Fu, Zhang, Xiong & Bai, 2018), to name a few. This research is therefore limited by the variables under study.

However, this study will build on the limited understanding on the level of sustainability awareness of UCSF students and findings from this study is significant in providing a platform where the university can build on to further enhance their sustainability programmes.

## **Literature Review**

### ***Definition and Concepts of Sustainable Development***

According to the definition by the World Commission on Environment and Development (WCED), 1987, sustainable development is development that meet the needs of the current world's population without compromising the needs of the world's population in the future.

In 1992, the United Nations released a ground-breaking action plan for sustainable development called Agenda 21. Agenda 21 is a blueprint that sets out actions that can be taken to contribute to global sustainability in the 21st century. It recognises that most environmental challenges have their roots in local activities and therefore encourages Local Governments to promote local environmental, economic and social sustainability by translating the principles of sustainable development into strategies that are meaningful to local communities (UN, 2002).

The Sustainable Development Goals (SDGs) is the successor to the Millennium Development Goals (MDGs) and is widely known as Agenda 2030, with reference to the end year by which the SDGs should have been attained globally. The issues on sustainable development will thus continue (UN, 2018).

### ***Sustainable Development and Education***

The United Nations (UN) through its declaration of 2005-2014 as the Decade of Education for Sustainable Development (DESD) aims to integrate the principles, values and practices of sustainable development into all aspects of education and learning. The UN believe that education will encourage changes in behaviour to shape a more sustainable future in terms of environmental integrity, economic and fair society for present and future generations (UNESCO, 2007).

According to Scott (2013), it is through education that changes in values, attitudes, skills and behaviour can be achieved.

Tilbury, Stevenson, Fien, & Schreuder (2013) further added that the steps taken by most countries to promote the theory and practice of education on sustainable development is through active participation of the academic community.

### ***Sustainability Awareness***

Many studies have been conducted to measure the sustainability awareness of university students across the globe. Among these studies are Tikka, Kuitunen & Tynys (2000) – Finland; Sivamoorthy et al (2013) – India; Heyl, Moyano Diaz, & Cifuentes (2013) – Chile; Chaplin and Wyton (2014) – UK; Zwickle, Koontz, Slagle, & Bruskotter (2014) – USA; Ahmad et al Ismail (2015) – Malaysia; Jeong, Jung, & Koo (2015) – USA; Mahat & Idrus (2016) – Malaysia; Garcia & Luansing (2016) – Philippines; and Fu et al (2018) – China. The literature on sustainability is vast but there is still plenty of room for new knowledge in view of the pervasiveness of the topic.

## **Methodology**

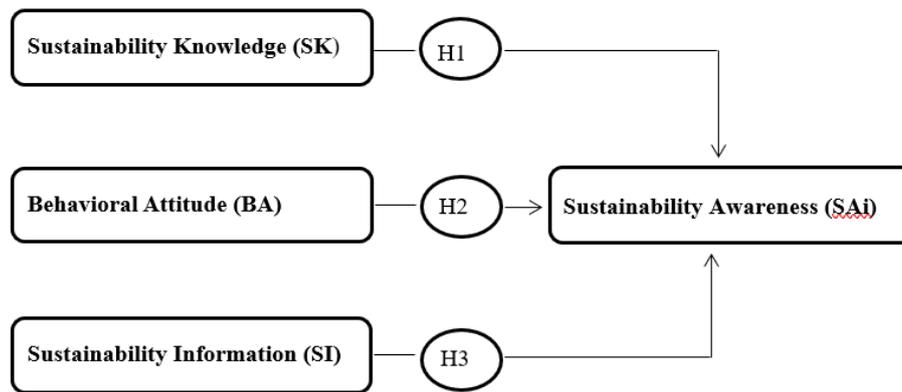
A very simple quantitative approach is adopted for this research study. Questionnaires provide a relatively cheap, quick and efficient way of obtaining large amount of information from a

large sample of people. This is useful for large populations when interviews would be impractical (McLeod, 2018).

Initially, the survey forms are distributed to UCSF students using Google Docs, but the response was very slow even though a link was given to them. A contingency plan was devised which required the use of printed forms to obtain better response and feedback.

The data are analyzed descriptively in terms of measures of central tendency and measures of variability using SPSS. Correlations and regression analysis are conducted to measure the relationships between the dependent and independent variables.

***Research Framework and Model***



Below are the hypotheses that support the theoretical framework of the study:

- H1: There is a positive relationship between sustainability awareness and sustainability knowledge.
- H2: There is a positive relationship between sustainability awareness and behavioural attitude
- H3: There is a positive relationship between sustainability awareness and sustainability information

Sustainability Awareness index (SAi) is the dependent variable, while Sustainability Knowledge (SK), Behavioural Attitudes (BA) and Sustainability Information (SI) are the independent variables.

***Measurement of the Variables***

Sustainability Awareness index is measured using a twenty (20) yes-no response to general questions related to sustainability. The number of correct responses is converted to percentages to derive the sustainability awareness index.

Sustainability Knowledge requires the respondents to answer twenty (20) multiple-choice questions that test the respondents’ knowledge on sustainability related issues.

Behavioural Attitude aims to identify the attitude of the respondents toward various aspects of the environment using ten (10) sustainability related statements.

The last independent variable, Sustainability Information examines the type of medium of communication that has helped the respondents to become aware of sustainability issues and initiatives.

## Findings and Discussion

### *Descriptive Statistics*

The population of the study consisted of UCSF students both at the diploma and degree levels. A total of 276 students (169 diploma and 107 degree), out of about 600 students participated in the survey.

Table 1 and 2 shows the breakdown of respondents by programme and place of residence respectively.

**Table 1: Breakdown of Respondents by Programme**

<b>Programme</b>	<b>Frequency</b>	<b>Percentage</b>
Accounting	51	18.5
Business & Entrepreneurship	82	29.7
Tourism & Hospitality	111	40.2
Arts & Creative Media	10	3.6
Social sciences	10	3.6
Sciences	12	4.3
<b>Total</b>	<b>276</b>	<b>100</b>

**Table 2: Breakdown of Respondents by Place of Residence**

City	143	51.8
Urban	70	25.4
Rural	63	22.8
<b>Total</b>	<b>276</b>	<b>100</b>

Most of the respondents are diploma students from the Tourism & Hospitality programme who are residing in the city.

### *Descriptive Analyses*

Based on Table 3 below, the sustainability awareness of the respondents is over 70% regardless of gender, age and level of study.

**Table 3: Sustainability Awareness by Gender, Age and Level of Study**

<b>Gender</b>		<b>Mean</b>
Sustainability Awareness	Male	72.89
	Female	74.41

<b>Age</b>		Mean
Sustainability Awareness	18-20	73.25
	21-23	73.91
	24+	75.39

<b>Level of Study</b>		Mean
Sustainability Awareness	Diploma	72.63
	Degree	75.61

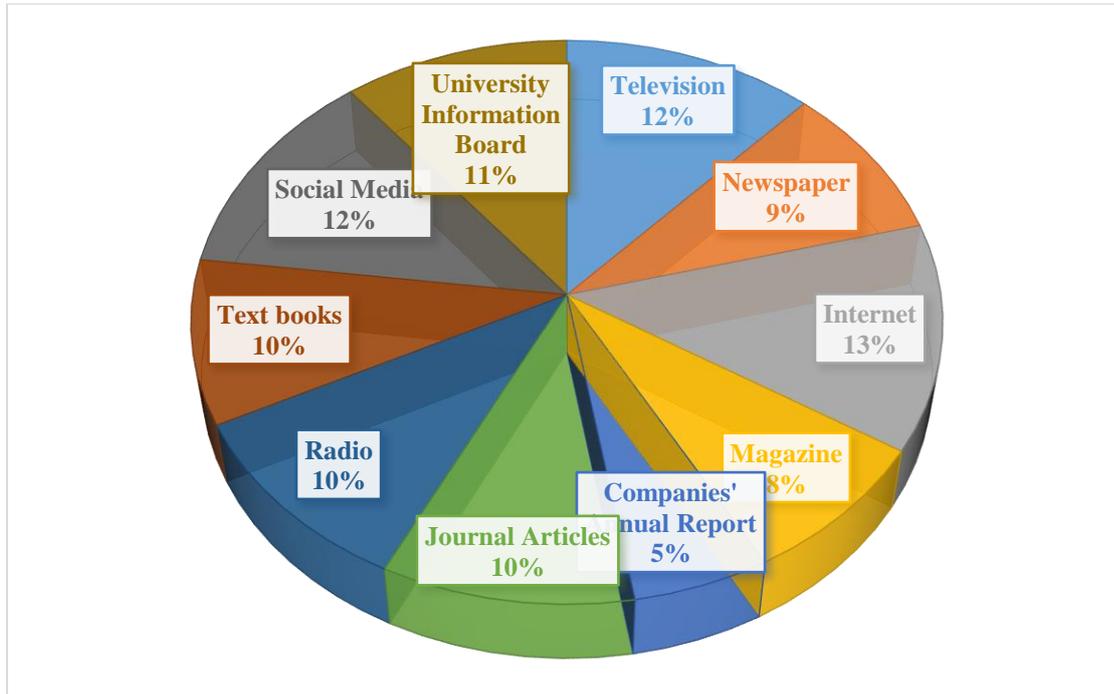
The above data is further substantiated by the programme and place of residence where the awareness is also over 70%.

**Table 4: Sustainability Awareness by Programme and Place of Residence**

<b>Programme</b>		Mean
Sustainability Awareness	Accounting	79.90
	Business & Entrepreneurship	72.32
	Tourism & Hospitality	71.17
	Arts & Creative Media	75.50
	Social Sciences	78.00
	Sciences	77.08

<b>Residence</b>		Mean
Sustainability Awareness	City	72.48
	Urban	75.21
	Rural	75.16

Figure 1 below shows that the most popular source of sustainability information comes from the internet, social media and television.



**Figure 1: Sustainable Information Sources**

**Correlations Analysis**

Table 5 below shows that sustainability knowledge and sustainability information are significant predictors of sustainability awareness at the  $P < .05$  and  $P < .001$  levels respectively.

**Table 5: Pearson Correlations**

		Sustainability Awareness	Sustainability Knowledge	Behavioural Attitude	Sustainability Information
Sustainability Awareness	Pearson Correlations	1	.142*	.057	.209**
	Sig. (2-tailed)		.018	.343	.000
	N	276	276	276	276

\* Correlation is significant at the 0.05 level

\*\* Correlation is significant at the 0.01 level

**Regression Analysis**

From Table 6 below, sustainability knowledge and sustainability information are significantly related to sustainability awareness at the  $P < .05$  and  $P < .001$  levels respectively.

The data also do not have any collinearity problem. Tolerance is  $> 0.1$  and VIF  $< 10$  for all variables.

**Table 6: Regression Analysis**

	Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta			Tolerance	VIF
(Constant)		15.027	.000		
Sustainability Knowledge	.121	2.044	.042	.986	1.014
Behavioural Attitude	.021	.357	.721	.977	1.024
Sustainability Information	.194	3.254	.001	.972	1.028

Adjusted R<sup>2</sup> = 0.59, F = 5.96, P < 0.001

### ***T-test Analysis***

An independent sample T-test is conducted to compare the level of sustainability awareness and the self-ranked sustainability awareness (S) where respondents rate themselves on their level of sustainability awareness.

There are significant differences in the scores for level of sustainability awareness (M = 73.79, SD = 14.99) and the self-ranked sustainability awareness (S) (M = 59.79, SD = 18.73), t (276) = 11.05, P = 0.000. One possible reason may be that the respondents are not aware of their sustainability level due to lack of practical applications.

**Table 7: Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Sustainability Awareness - Sustainability Awareness (S)	13.931	20.994	1.264	11.443	16.419	11.024	275	.000

### **Conclusions and Limitations**

In conclusion, the level of sustainability awareness based on the respondents demographic data do not differ by gender, age, level of study, programme and residence. The findings from the study also showed that sustainability awareness of UCSF students is high with sustainability knowledge and sustainability information being the most significant influencing factors.

This study, however, has a few limitations: the first limitation is the lack of generalisability due to the setting; the study is also limited by the variables being examined – other variables may produce different results; and lastly, response bias may have affected the accuracy of the data and thus, the results.

## Implications and Future Directions

The findings from this study show that sustainability awareness is greatly influenced by sustainability knowledge and sustainability information. This implies that courses in sustainable development would greatly enhance the students' awareness and the use of proper media tools that are of interest to the students.

Being sustainability aware is not the end but rather the beginning of more concerted effort towards the practise of sustainability. The mindset of students must be transformed from being sustainably aware to become full fledge advocate of sustainability. The green campus concept which endeavours to extend learning beyond the campus learning settings to develop responsible attitudes and commitment to the environment is therefore an effective platform for a life-long learning experience which students can bring with them to their homes and into the wider community.

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