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## **The Level of Awareness towards Environmental Issues and Concern among Students in Tertiary Level: Case Study of Universities Students in Kuala Lumpur and Klang Valley of Malaysia.**

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### **1.0 INTRODUCTION**

The environment is the combination of living things which are closely related to human, animal and vegetation. One of the best ways of preserving the environment is through environmental education and creating awareness among society, especially students as they are the future leaders (Thapa, 1999). Environmental education is a way of creating knowledge, comprehension, values, attitudes, skills, abilities and awareness among individuals and social groups, towards environmental problems such as global warming, depletion of ozone layer, deforestation, excessive waste generation and other environment issues.

The research on environmental awareness can be vast in subjects matter as well as spatial contexts. This study, however, limits itself to the assessment of environmental awareness among students at the tertiary educational centres in Kuala Lumpur and Klang Valley of Malaysia.

Environmental awareness is one of components in achieving sustainable development globally. Sustainable development can be defined as developments that could meet the needs of the present generation without damaging the environment or compromising the ability of future generations to meet their own needs (Bruntland Report, 1987; Dale and Hill, 2001; Giddings et al., 2002). The lack of continuous and comprehensive environmental education in learning institution has caused youth to overlook the importance of the environmental protection in their daily life. This is because they do not have continuous exposure on environmental issues either through formal or informal education (Hansen, 1991). Moreover, research in this area indicates that although environmental education is taught as a subject in the curriculum, the subject faces certain limitation with regard to its proper implementation. By including subject specialization, it could enhance the efficiency of the subject content as well as to sustain the students' inner urge to protect the environment.

There are several objectives which have been formulated for this study. The first objective is to identify the level of environmental knowledge of students at tertiary level. Secondly, this research aims to find out the current concern towards the environmental issues among the students. Third, the research aims to identify the types of exposure on environmental awareness experienced by the students. Next, the research sets to identify what efforts have been done by the students in contributing towards environmental protection and lastly, the research intends to recommend suitable measures in order to increase the level of awareness towards environmental issues and concern.

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To achieve these objectives, the research employed questionnaire survey as the primary data collection method. The questionnaire was divided into four sections which are environmental knowledge, environmental concern, efforts towards environmental awareness and also environmental commitment.

## **2.0 LITERATURE**

### **2.1 ENVIRONMENT IN THE CONTEXT OF SUSTAINABILITY**

As the population has increased, natural ecosystems have declined and changed in the balance of natural cycles leading to negative impacts on both humans and other living things. In order to create an integration and balance between natural and built environment, an initiative called Local Agenda 21 (LA21) was proposed at the United Nations Conference on Environment and Development (UNDEC) in 1992 (Tonami and Mori, 2007). LA21 is “an agenda that set tasks and a vision in order to promote sustainable development at the local level and shows the menu of actions” (Nakaguchi, 2004:28). Sustainable development requires the integration and balance of environmental, social and economic benefits in decisions of any development (Atkinson, 2004). The starting point of sustainable development is the idea that the long-term preservation of the environment, as well as its biodiversity and natural resources, could only be possible if proposed developments are integrated with economic, social and political objectives. In particular, efforts are geared to the reaping of benefits by the poorest members of the society. Sustainability also finds its expression in the integrated concept of environment and future development through actions and awareness.

Environmental awareness is one of the components in strengthening the sustainable development of any country. According A. H. Ziadat (2009), Young (2000) and Harvey (1995), public awareness through educational programs is very important and an essential step towards sustainable developments. The development of environmental awareness among the public is a key element in the formation of fundamental solutions for environmental problems that are blocking sustainability. In addition, Fien (2002) stated that environmental opinions are commonly more mutual among the younger generation as compared to older generation.

### **2.2 ENVIRONMENTAL EDUCATION**

According to National Environmental Education Advisory Council (NEEAC) (1996), environmental education is a process that creates awareness and understanding of the relationship between humans and their environments. Environmental education is concerned with knowledge, values, and attitudes, and aims towards creating responsible environmental behavior. Palmer (1998) have emphasized that the general aims of environmental education are to support and make powerful the community to preserve the integrity and diversity of nature, and to ensure that natural resources are used in an equitable and ecologically sustainable manner.

Education is commonly perceived as a one-way flow of information, mainly by educational institutions, particularly schools. On the other hand, environmental education can be a two-way communication with full contribution and awareness by people of all ages. The educational procedure itself becomes sustainable when the participants accept liability and guide the process themselves. Environmental education should not be restricted to schools, it is also a significant tool for managers, civil servants, community groups and NGOs alike, in enabling them to implement policies that can minimize negative impact to the environment (Hampel and Holdsworth, 1996).

According to Tomar (2007), there are three major aspects to be considered in environmental education which are:

1. Education about the environment. Environment as the subject of investigation.
2. Education through environment and where the environment is a medium for education.
3. Education for environment. Education for conserving and improving the environment. A study of environmental problem and working towards their solutions.

These three aspects specify that education should be about the environment by making environment as a subject of investigation.

### **2.2.1 Formal and Informal Environmental Education**

Environmental education should not be confined to the narrow scope of only school education. It should reach a wider public in order to effectively address environment issues. In other words, environmental education should be understood not only in the aspect of formal education, but also in that of non-formal and information settings. It is “the process of helping people, through formal and informal education, to acquire understanding, skills and values that will enable them to participate as active and informed citizens in the development of an ecologically sustainable and socially just society”(ASEAN Secretariat, 2001, p.3).

While formal education can be understood as school education, the definition of informal education according to the Educational Resources Information Centre (ERIC) of the US Department of Education (ERIC) is “organized education without formal schooling or institutionalization, in which knowledge, skills, and values are taught by relatives, peers, or other community members” (ERIC, 1999, p.12). This includes any planned and organized education outside schools, for example, workshops and seminars conducted by NGOs, communities, businesses and the mass media. Although formal education can only provide education to students, informal education can deliver it to the general public, especially those who are outside the reach of formal education. Informal learning is “casual and continuous learning from life experiences outside organized formal or informal education” (ERIC, 1999, p.14). This includes learning in the family, workplace and the social life. Accordingly, an increase in environmental information is a key to promoting informal learning. In this context, the media, and the use of it by other parties such as government, NGOs and businesses, play an important role.

### **2.2.2 Benefits of Environmental Education**

According to Suzana Ariff Azizan (2009), there are several benefits of environmental education including:

- **Better understanding of the environment**

By taking these courses students will have a better knowledge regarding the topic. The experiential learning adopted gives the opportunity for students to understand the relationship between human and the environment.

- **Raise awareness on the importance of environment**

Students will be exposed to the various issues pertaining Mother Nature and its environment. This will give them ideas on how they can contribute in protecting and preserving the environment. Students are allowed to be more responsible with their surroundings.

- **Form an ethical society**

Throughout the courses, students are taught to look at the impact of human actions on environment and how the environment influences the daily life. Moreover, this will discipline the students and help them to be environmentally ethical; think wisely and make appropriate decisions to protect and preserve the environmental value.

- **Enhance students’ good characteristics.**

The strategies applied in the curriculum such as the development of critical thinking and skills motivate students to build up good characteristics. The skills include making the right decision, solving problem and learning to work as a team.

- **Produce a balanced human being**

With environmental education in their syllabus, it will balance the students’ life so that it does not solely focus on career-based education in the various fields they are originally doing; for instance, law, engineering and architecture.

## **2.3 Steps to create environment awareness society behavior**

Saiful Hadi (2010) have highlighted several ways to establish environmental awareness behavior. According to him, shaping the behavior of individuals or groups of people to have a practical environmental awareness can be done through the followings:

### **2.5.1 Individual effort towards environmentally friendly**

Environmentally conscious behavior starts with doing things in small steps that are called eco-friendly, eco-living or are living with attention to their surroundings. In their daily life, every individual has a different habit from, if carefully considered the behavior of individuals can be forced to always pay attention to small and easy to do things (Duroy, 2005). Environmentally friendly behavior is the simplest actions that can be done by anyone, for example, using water wisely, unplugging electrical appliances when not in use to avoid electricity wastage, planting tree, saving fuel and practicing the 3R approach (Reduce, Reuse, and Recycle).

### **2.5.2 Environmental education activities**

Education can instil ethical and environmental awareness, values, attitudes and behaviors among citizens, to develop a more sustainable life. This also reinforces the notion that education is not only focused on the environmental aspects of physical and biological environment but also the socio-economic environment and human resource development. Government'd responsibilities are to support the sustainable development of the state. Education needs to:

- Create an environment for and development of education for all ages in line with situations that developed.
- Involve school children in the study or learning about a healthy environment both at local or regional environments, including drinking water rescue, medical care, food, and economic impacts of resource use and environmental resources.

The propaganda agenda of environmental education in the 21st century will work well if it is really responded to by every institution education providers, at different types or levels of education in all over the country, both in local, regional and national levels.

### **2.5.3 Campaign or movement organization and mass media**

Shaping the behavior of people's can be performed with a variety of activities that can be associated directly to the needs of individuals, groups, and society at large. These activities can be performed by various civil society organizations in the environmental community itself. Citizens can participate in the movement or campaign about important issues of concern to be known by the public. In return, the community experience exchange of knowledge, attitudes, behaviors and skill and values of life. The role of civil society organizations or even the mass media such as television, newspapers and radios are very big in helping the campaigns for reformed ideas. The public can easily follow and participate and witness their own changing behaviour due to the campaign. Mass media, additionally, have the advantages of which are:

- Reaching a broad audience or reader and a big fast
- Creating knowledge and disseminate information
- Encouraging change in the attitude and behaviors.

Both non-governmental organizations (NGOs) and the mass media have an important role which is expected to develop the patterns of development and saving the environment with a variety of news and activities made by the organizations. In other words, programs conducted by the NGOs and

broadcast through mass media will be easily accessible, by the public. News on these successful stories will affect the response, feelings, attitudes, and behavior of individuals or society.

### **3.0 METHODOLOGY**

The survey was conducted on 451 students from 5 different universities in Malaysia which are Universiti Islam Antarabangsa Malaysia(UIAM),Universiti Malaya(UM), Universiti Putra Malaysia (UPM),Universiti Kebangsaan Malaysia (UKM) and Universiti Institut Teknologi Mara (UiTM). There are two types of sampling techniques were used which are convenience sampling method and stratified sampling. The main tools of data collection in conducting the study was a self – administered questionnaire and containing a closed-ended and open-ended question. The questionnaire consists of four sections which are regarding,

- The environmental knowledge and environmental education of the respondents.
- The concern towards environmental issues and protection,
- The effort of the respondents in contributing towards environmental protection

The Awareness of Environment Scale (21 items) which is developed by Jussoh and Harun (2005) was used to measure actual awareness of students about global environment. Basically, there were 21 questions and each question carried 1 mark for correct answer and wrong answer carried 0. So, the total score is 21 marks out of 21 questions. Respondent's awareness on environmental knowledge was categorized according to the composite score of responses of twenty one questions. Respondents who score 0 to 6 have a low awareness, 7 to 13 have a moderate awareness, and 14 to 21 have a high awareness on environmental knowledge. The Likert scale measurement was used for every statement for environmental issues on a 4 point scale. Each alternative item is assigned from 1 (Totally concerned) to 4 (Very not concerned) for favorable items (Shobeiri, 2005). This is to enable the respondents to rate each and every variables base on their level of concerned. Scoring system subsequently in the research in order to identify the variables with higher and lower weighted score, and is arranged accordingly to priority. This was done by allocating numeric value to the options for example if the respondents chose the option as the first choice they will be scored 3 second choice as 2 and third choice as 1 and the last choice as 0 mark. Then, all the data were keyed in SPSS software for analytical process.

### **4.0 ANALYSIS**

#### **4.1 Environmental knowledge**

Results in this study are to determine the level of awareness towards environmental issues and protection among students in the tertiary education. The Awareness of Environment Scale (21 items) which was developed by Jussoh and Harun (2005) was used to measure actual awareness of students about global environment. Basically, there were 21 questions and each question carried 1 mark for correct answer and wrong answer carried 0 mark. Therefore, the total score is 21 marks out of 21 questions. Respondent's awareness on environmental knowledge was categorized according to the composite score of responses of twenty one questions. Respondents who score 0 to 6 have a low awareness, 7 to 13 have a moderate awareness, and 14 to 21 have a high awareness on environmental knowledge. The levels of environmental knowledge among the students were recorded in Table 1.

Table 1: Level of Environmental knowledge among student

Level of environmental knowledge	Frequency	Frequency (%)
High	11	2
Medium	247	55
Low	193	43
Total	451	100

Source: Questionnaire Survey, 2011

The 55% of the students acquire a medium level of environmental knowledge. Only 2% of the students acquire a high level of environmental knowledge. The remaining 43% are considered low level of environmental knowledge. A chi square test was conducted to identify the factors influencing the level of environmental knowledge among students. It has been found that the factors are race, citizenship and place of residency whether it is city or rural area. Table 2 shows the results of the chi – square test.

Table 2: Level of Environmental knowledge among student (race)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.265(a)	2	.026
Likelihood Ratio	7.324	2	.026
Linear-by-Linear Association	2.120	1	.145
N of Valid Cases	451		

Source: Questionnaire Survey, 2011

Based on analysis using chi-square technique, the calculated chi-square for the relationship between race and the level of environmental knowledge is at 7.265 which are higher that critical chi-square value at 2degree of freedom which is 5.99. In addition, the p-value is 0.026 which is lower than 0.05. This shows that the level of environmental knowledge is dependent on race. This indicates that null hypothesis is rejected.

Table 3: Level of Environmental knowledge among student (place of residency)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	94.352(a)	2	.000
Likelihood Ratio	37.006	2	.000
Linear-by-Linear Association	21.292	1	.000
N of Valid Cases	451		

Source: Questionnaire Survey, 2011

Table 3 shows the calculated chi-square for the relationship between place of residency (city/rural) and the level of environmental knowledge is at 94.352 which are higher that critical chi-square value at 2 degrees of freedom which is 5.99. In addition, the p-value is 0.000 which is lower than 0.05. This

shows that the place of residency does influence the level of environmental knowledge of the respondents.

Table 4: Level of Environmental knowledge among student (citizenship)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	159.556(a)	6	.000
Likelihood Ratio	53.961	6	.000
Linear-by-Linear Association	9.994	1	.002
N of Valid Cases	451		

Source: Questionnaire Survey, 2011

Referring to table 4, the calculated chi-square for the relationship between race and the level of environmental knowledge is at 159.556 which are higher that critical chi-square value at 6 degree of freedom which is 12.59. In addition, the p-value is 0.00 which is lower than 0.05. This shows that citizenship influence the level of environmental knowledge of the respondents. Moreover, the research also identifies the extent of relationship between several variables. Spearman Rho's correlation tests was run to determine the relationship between factors which are age, gender, level of education, place of residency (rural/city), citizenship and Kuliyyah with environmental knowledge. Based on the test, the result indicates that the factors of age, citizenship, kuliyyah and place of residency do have significant relationship towards the environmental knowledge of the respondents.

Table 5: Spearmen Rho Correlation

		Gender	Age	Level of education	Kuliyyah	Citizenship	Place of residency
Environmental knowledge	Correlation Coefficient	.034	.145**	-.003	.181**	.093*	.104*
	Sig. (2-tailed)	.471	.002	.944	.000	.049	.027
	N	451	451	451	451	451	451

\*\* correlation is significant at 0.01 level (2 – tailed)

\* Correlation is significant at 0.05 level (2 – tailed)

The survey disclosed that there is a significant relationship between the factor of age, citizenship, kuliyyah and place of residency and the level of environmental knowledge of the students. There was a positive correlation between kuliyyah and level of environmental awareness, which was statistically significant ( $r = 0.181^{**}$ ,  $P = 0.000$ ). Moreover, a strong relationship also shown between citizenship ,place of residency and age with environmental knowledge with ( $r = 0.093^{*}$ ,  $P = 0.49$ ), ( $r = 0.104^{*}$ ,  $P = 0.27$ ) and ( $r = 0.145^{**}$ ,  $P = 0.002$ ).

Table 6: Environmental related subject offered by respective courses.

Environmental related subject in respective courses	Frequency	Frequency (%)
Yes	192	42
No	259	58
Total	451	100

Source: Questionnaire Survey, 2011

The study also included data on environmental related subject in the course. Table 6 shows findings on 451 respondents. The table above, more than half of the students stated that students who have not involved in environmental related subjects are 58%. Moreover, majority of the respondent responds 85% agreed that environmental related subject should be a compulsory subject in all programs. This shows that the students are indeed aware of the needs and importance of environmental related subjects in their studies.

Table 7: Environmental related subject should be compulsory

Environmental related subject should be compulsory	Frequency	Frequency (%)
Yes	385	85
No	66	15
Total	451	100

Source: Questionnaire Survey, 2011

#### 4.2. Environmental concern

The respondents were asked on how important the environment issue to them is. Table 8 below depicts the respond from the students.

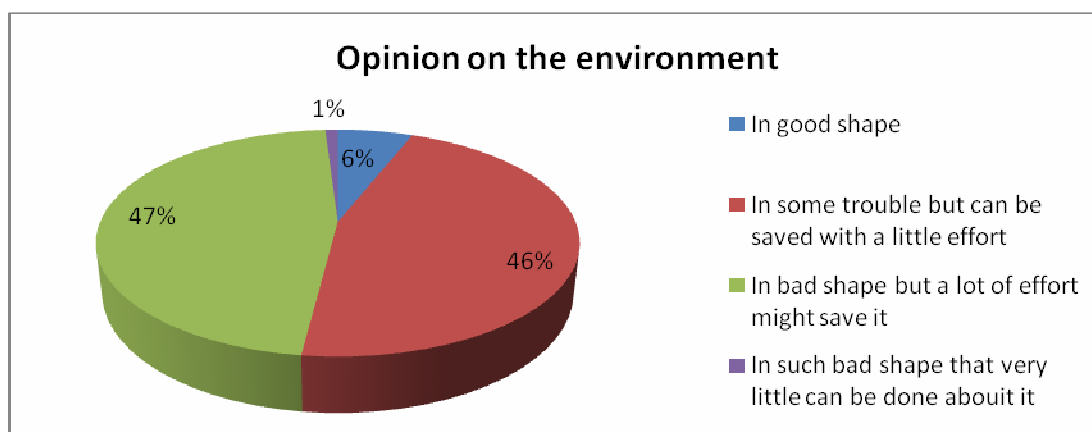
Table 8: Importance of Environmental Issues

Importance of environmental issues	Frequency	Frequency (%)
Very important	248	55
Important	194	43
Not Important	9	2
Very not important	0	0
Total	451	100

Source: Questionnaire Survey, 2011

Based on the result from the survey, more than half or 55% of the respondent stated that environmental issues is very important to them.

Figure 1: Opinion on the current environment



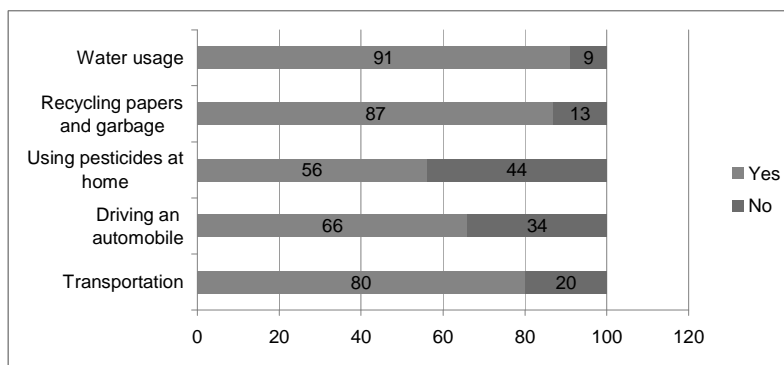
Source: Questionnaire Survey, 2011



Furthermore, based on the survey conducted on opinion of the students on the current condition of our environment, it shows that 47% of the respondents respond that the environment is in a bad shape but a lot of effort might save it. This followed by 46% respondents which stated that our environment is in some trouble but can be saved with a little effort. 6% of the respondent thinks that our environment is in good shape while another 1 % stated that our environment is in such bad shape and that very little effort can be done about it. The graphical presentation is shown in the figure 1 above. Therefore, it can be conclude that, most of the students of tertiary education strongly agreed that the environmental issues are very important. The environment is in a bad shape but with a lot of effort, it can be saved.

A list of environmental issues has been identified and the respondents were asked to rate the issues according from totally concerned to very not concern. Based on the survey, the result showed that students in tertiary education are most concerned towards the issue of air pollution with the highest weighted score of 989. Second is climate change with the weighted score of 979. The environmental issues which is the least concerned among the students in tertiary education is the usage of pesticides in food production with the weighted score of 827. The next question aims at identifying whether concern towards environmental issues have changed the behavior of the respondents. The activities which have changed the most for the student in tertiary level due to environmental concern is in term of waters usage. 91% of the students responded that their concern towards the usage have changed due to environmental concern. The rest of activities are shown in the following graph.

Figure 2: Changes in behavior due to environmental concern



Source: Questionnaire Survey, 2011

#### 4.3. Environmental awareness

This section is divided into three parts which are exposure on environmental issues; participation in environmental society or NGOs; willingness to pay for environmental product. The first part is to identify level of exposure on environmental issues and knowledge which divided into three parts which are electronic media; printed media and leisure activities

Analysis found that media was the main source of information on environmental issues where television record the majority of responds with 57%. Similarly for printed media, most of the respondents acquire exposure on environmental issues and knowledge was through newspaper with 31%. Furthermore, the respondents also respond that they acquire exposure on environment from leisure activities is by sharing hobbies and interest with each friends and colleagues. The second part of the questionnaire is participation in environmental society/ Non – Governmental Organizations (NGO). The student respond that they were mostly involve in lectures and public forum organize by the environmental society or the NGOs with the percentage of 32%. In the third section, the respondents were asked on their willingness to pay for environmental product. It indicated that most of

the students in tertiary education are willing to pay up to 50% extra and above common product for environmental products which is with 46%.

#### 4.4 Environmental Commitment

The last part of questionnaire is to acquire information and data on environmental commitment exhibits by the students in tertiary level. The first question is regarding bodies which the respondents think responsible for providing a safe environment. 38% of the respondents answered that the government has the most responsible in providing a safe environment while 23% of the respondents answered that each individual is responsible in providing themselves a safe environment. Table 9 is as follow.

Table 9: Responsible bodies

Responsible bodies	Frequency	Frequency (%)
Government	169	38
Environmental group	30	7
Community	76	17
Individual	104	23
Non – Governmental Organization	24	5
Industries	48	11
Total	451	100

Source: Questionnaire Survey, 2011

Regarding Malaysia's effort in protecting the environment were asked in the study to comprehend the respondent's point of view. 50% of the respondents respond that Malaysia's have given 50% – 74% of the efforts concentrating toward sustainability. This followed by 30% of the respondents which stated 75% - 99% of Malaysia's efforts have been concentrating toward sustainability. While 12% of the respondents thinks that only about 25% - 49% of the efforts have been concentrating toward sustainability. 8% of the respondent thinks that about 100% of the effort has been concentrated towards achieving sustainability.

#### 4.5 Summary of the research

Based on the analysis, several findings can be summarized as below:

- 55% of the students in International Islamic University Malaysia (IIUM) have medium level of environmental knowledge and environmental education play a role in determining the level of environmental knowledge of the person. There are several factors which have been identified which might have influence the level of environmental education which are gender, age, level of education, place of residency and citizenship. From the tests which have been done, factors which affect the environmental knowledge the most are the student's citizenship, race and place of residency.
- Not all of the faculties in tertiary education contains environmental related subjects in their courses and most of the students of IIUM think that there is a need to make environmental related subject as a compulsory subject for every faculties.

- More than half of the students of tertiary level stated that the environmental issues are very important because in their opinion, the environment is in a bad shape but with a lot of effort, we might save it.
- Concern in term of water usage is the behavior which has changed the most due to environmental concern among the students.
- Students in tertiary level obtained their informal/formal education on environmental issues and knowledge through newspaper, television and hobby/interest.
- One third of the students participate in lecture or forum related to environment organized by the environmental societies and NGOs rather than donating, signing petition related environmental issues, involve in demonstration and become a member of environmental group.
- Three quarter of the students in tertiary level are willing to pay up to 50% and above for environmental products and services.
- Approximately 38% of the students think that government is the most responsible body in ensuring we have a healthy environment and 50% of the students think that, Malaysia has given 50% – 74% of the efforts concentrating toward sustainability.

## 5.0 CONCLUSION

The researcher has managed to accomplish the goal of the study which is to determine the level of awareness towards environmental issues and protection among students in the tertiary level. This study has highlighted that 60% of the students in tertiary level have medium and high level of environmental knowledge and environmental education play a significant role in determining the level of environmental knowledge of the person. Citizenship, race and place of residency of the students have been identified as some of the factors which influenced the level of knowledge of the students.

Furthermore, not all courses in the respective universities encompassed environmental related subjects in their courses. The majority of the respondents agreed that there was a need to make environmental related subject as a compulsory subject for every universities in tertiary level. Lastly, the study also identify the level of concern towards the environmental issues among students in the tertiary level is moderate.

It is suggested that future research to be conducted on students with different type of educational background at other universities. To increase the applicability and transferability of the findings in this research, future efforts of extending the research to other localities and communities are imperative.

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## ABSTRACT

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Environmental education is a means of creating knowledge, comprehension, values, attitudes, skills, abilities and awareness among individuals and social groups towards the environment protection. The current study reports on the awareness towards environmental issues and protection among 451 students from various universities in Malaysia namely International Islamic University Malaysia (IIUM), University Putra Malaysia (UPM), University Malaya(UM), University Kebangsaan Malaysia (UKM) and University Institute Technology Mara (UiTM). The students have been assessed through a series of questionnaire which have been distributed in order to capture their levels of environmental knowledge and environmental practices. Furthermore, the study also identified the levels of exposure on environmental issues and the sources of these exposures. The result revealed that the level of awareness towards environmental issues and protection among students in tertiary level is at moderate level. The environmental awareness must be strengthened as students today are the leaders for tomorrow.

**Key words:** Environment, education, awareness, students, Malaysia

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