

## **Influence of Age and Level of Education on Environmental Awareness and Attitude: Case Study on Iranian Students in Malaysian Universities**

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**Abstract:** Student environmental awareness and attitudes as one of the components of the environmental education have been investigated for many respects. The present study reports to influence of age and educational level on student's environmental awareness and attitude in Malaysian universities. Total 541 students were selected through the stratified random sampling technique out of 2200 students in 14 private and governments' university. Age groups were divided in 3 categories (17-25, 26-40, >40) and educational groups were included (Bs, Ms and PhD). They were assessed using the Likret scale for environmental attitude and multichoice with an option for environmental awareness. Results revealed that there is statistical significance the effect of age on overall environmental awareness for all the three levels of education groups (Bs, Ms and PhD). Result showed that increasing in age and levels of education have effect on increasing of environmental awareness and attitude.

**Key words:** Environmental awareness, environmental attitude, age, level of education, random sampling, assessed

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### **INTRODUCTION**

Now-a-days, man has through his power to transform his environment wrought, accelerated changes in the balance of nature. The result is frequent exposure of living species to dangers which may prove irreversible. The declaration of the United Nations Conference on Human Environment organized in Stockholm in 1972 proclaimed: to defend and improve the environment for present and future generations has become an imperative goal for mankind. This undertaking urgently calls for new strategies, incorporated into development which particularly in the developing countries is a prerequisite for any such improvement.

Now-a-days for improve and solve of problems, one of important way is people's awareness, knowledge and attitude to different issues. Education utilizing the findings of science and technology should play a leading role in creating awareness and a better understanding of environmental problems. It must foster positive patterns of conduct towards the environment and nations' use of their resources. Also one of the ways to improve the quality of life is by saving attention to environmental issues. The man has duty to be aware of our environment for sustainability and protection (Yaghoobi, 2003). One of the most important people for saving and protection of

nature are students. Student's environmental awareness is one of the most important indicators for displaying national civilization. It reflects many aspects of environmental status such as personal consideration and behavior, public capacity and the local citizens' attitude towards sustainable society as a whole, etc. (Kaiser, 2003).

Athman and Monroe (2000) stated that environmental awareness of processes and systems play an important role in EE (Environmental Education). Regarding awareness, Palmer (1998) emphasized that students should acquire appropriate range of awareness, understanding and concepts about the environment so that critical judgment can be achieved. On the other hand, Madsen (1996) explained that environmental awareness is necessary to achieve environmental protection and restoration. Madsen emphasized that the students must have a basic grasp of environmental problems. Awareness was studied along with environmental knowledge and concern by Hausbeck *et al.* (1992).

They concluded in their study that awareness and concern scores were significantly higher than knowledge levels in high school students. They linked this result with the fact that a primary source of environmental information is electronic media. Also attitude is one of the important components in EE which is investigated in this

study. Following Cluck *et al.* (1997), environmental attitudes have been conceptualized as a 3 dimensional concept. The dimensions of environmental attitudes include environmental worldview, environmental concern and environmental commitment. There are many theoretical and empirical approaches to investigate environmental attitudes (Dunlap and Van, 1978; Buttel, 1978; Ramsey and Rickson, 1976) though conceptualization and operationalization of environmental attitudes varies in and across studies, most approaches identify environmental attitudes as a component of environmentalism.

Environmental values, the relationship between the environment and society and perceptions of natural source consumption directly affect overall environmental balance (Dunlap and Van, 1978). The effects of individual factors on environmental attitudes have been examined by researcher.

There are some predictors of environmental awareness and attitude, like gender, residence, income and political tendency which are investigated by Arcury (1990), Tarrant and Cordell (1997), Cottrell and Graefe (1997) and Dunlap and Van (1978). In a study of cohort group differences in environmental concern, Honnold found decreased levels of environmental concern in almost all age groups since the 1970s.

As an entry-level variable, education has good use as a predictor of environmental knowledge and subsequent behavior. On examination of the effect of education on environmental knowledge, Ostman and Parker found significant relationships between education and environmental awareness, environmental knowledge and subsequent behaviors.

In support, Van Liere and Dunlap stated that education is positively related to environmental knowledge. Scott and Willits found that people with more years of formal schooling have a higher incidence of pro-environmental behavior than did less educated and lower income respondents. In other study, younger persons are more environmentally concerned than older persons (Arcury, 1990) because environmentalism is an appropriate outlet of younger persons' relatively low commitment to the social order and lower regard of dominant value system. Some researcher such as Tarrant and Cordell (1997), discussed gender effect of environmental attitudes. So age and educational level are one of the most explanatory variables related to environmental awareness and attitudes.

## **MATERIALS AND METHODS**

The survey was conducted on Iranian students in 14 private and governmental Malaysian universities.

**Instrumentation:** The questionnaire of awareness which is defined as concern for what is happening in the environment. The concept was examined with a series of questions inquiring about the global environment.

The second questionnaire is used to measure attitude that is defined as the acquisition of values, feelings and motivations towards the environment. This was examined using the amended USEPA instrument, asking questions regarding the environmental issues. These instruments were evaluated among Iranian students in Malaysian universities.

The instrument is including two sections environmental awareness and attitude. The awareness of environment scale (15 items) is used to measure actual awareness of students about global environment. The multiple choice items are used because they are considered the most versatile methods among all objective test items. The total score was computed by 15 questions that each question has 1 score so the total score are 15.

If student had selected correct answer, they were given 1 score on the otherwise will take 0 score (correct answer = 1 and wrong answer = 0). The Likert scale measurement was used for every statement for environmental attitude on a 5 point scale. Each alternative item is assigned from 5 (strongly agree) to 1 (strong disagree) for favourable items. In case of unfavourable items the scoring is reversed, i.e., from 1 (strongly agree) to 5 (strongly disagree).

Independent samples t-test was used as a test of statistical significance. The procedure was applied to compare means of the 2 independent groups of variables (male and female).

If the observed t-test value exceeded the critical values from the results of the table, the null hypothesis ( $H_0$ ) was rejected and this infers that there is significance different between the two variables. The significance level ( $\alpha$ ) is 0.05. For >2 groups (3 groups of age including 17-25, 26-40, >40 and 3 groups of level of education including Bs, Master, PhD) one way ANOVA was applied. Due to non-homogeneity of variance in one way ANOVA on environmental awareness score a Kuruskal Wallis analysis was applied to see the comparison of mean scores between educational groups.

## **RESULTS AND DISCUSSION**

The subsequent results are in this study to determine the level of environmental awareness and attitude among Iranian students in Malaysia by age and levels of educational groups.

Table 1: Statistical test of respondents between educational level groups

Level of study	N	Mean rank	df	Sig.
<b>Environmental awareness</b>				
Bs	121	215.80	2	0.001
Ms	156	240.10	-	-
PhD	222	275.60	-	-
Total	499	-	-	-

Level of significance (p<0.05)

Table 2: Result of statistical test of respondents between educational level groups

Groups	Sum of squares	df	Mean square	F	Sig.
<b>Total attitude score</b>					
Between groups	44.531	2	22.266	1.393	0.249
Within groups	8279.357	518	15.983	-	-
Total	8323.889	520	-	-	-

Level of significance (p<0.05)

### Comparison of environmental awareness and attitude scores between educational level groups

**Environmental awareness:** A one way ANOVA was conducted to investigate whether there are any differences in environmental awareness scores between different educational groups. Due to non-homogeneity of variance in one way ANOVA on environmental awareness score a Kruskal Wallis analysis was applied to see the comparison of mean scores between educational groups. Table 1 shows, there is significance differences responding to environmental awareness score among the three level of Educational groups (df = 2, p = 0.001), this is indicated that PhD respondents have more awareness towards environment than two other groups.

**Environmental attitude:** Result showed that there was no statistically significant difference in attitude scores for the three educational groups (F (2, 518) = 1.393, p = 0.249), this is indicated that 3 educational groups respondents have similar attitude about environment (Table 2).

### Comparison of environmental awareness and attitude scores between age levels

**Environmental awareness:** Result showed that there was a significant difference at the p<0.05 level in environmental awareness scores for the three age level (F (2, 491) = 7.158, p = 0.001) (Table 3). Despite reaching statistical significance, the actual difference in mean scores between the groups was quite small.

The effect size calculated using eta squared was 0.02. Post-hoc comparisons using the Tukey's HSD test indicate that the mean of total environmental awareness score for group 1 (M = 9.603, ±SD 2.831) was significantly different from group 2 (M = 10.567, ±SD = 2.610). Group 3 (>40) did not differ significantly from 2 other groups. This is indicated that older age groups respondents have more awareness towards environment than 2 other groups.

Table 3: Result of statistical test of respondents between age groups

Groups	Sum of squares	df	Mean square	F	Sig.
<b>Total attitude score</b>					
Between groups	99.380	2	49.690	7.158	0.001
Within groups	3408.233	491	6.941	-	-
Total	3507.613	493	-	-	-

Level of significance (p<0.05)

Table 4: Result of statistical test of respondents between age groups

Groups	Sum of squares	df	Mean square	F	Sig.
<b>Total attitude score</b>					
Between groups	100.191	2	50.095	3.158	0.043
Within groups	8137.484	513	15.863	-	-
Total	8238.039	515	-	-	-

Level of significance (p<0.05)

**Environmental attitude:** There was a statistically significant difference at the p<0.05 level in environmental attitude scores for the three age level [F (2, 513) = 3.158, p = 0.043] (Table 4). Despite reaching statistical significance, the actual difference in mean scores between the groups was quite small. The effect size calculated using eta squared was 0.01. The post-hoc comparisons using the Tukey's HSD test indicate that the mean of total environmental attitude score for group 1 (M = 36.02, ±SD = 3.926) was significantly different from Group 2 (M = 36.80, ±SD = 4.002). Group 3 (M = 37.54, ±SD = 4.044) did not differ significantly from 2 other groups. This is indicated that older age groups (26-40) respondents have more attitudes towards environment than the first group (17-25).

**Environmental awareness and attitude among levels of education:** The results showed that the mean of overall environmental awareness subject among PhD groups was more than BS group; this is means that PhD groups have more awareness towards environment than 2 BS groups. The possible explanation that the students who are studying in high level of education (PhD) due to their levels of education and their age are their chance to learn more is greater.

The results also show that there is no significant difference between the groups with regard to issue of attitude. The students have a high attitude about environmental issues. The high attitude among level of educations likely from mass media and possibly NGO's function where they are very active in this issue. Furthermore, students may be active members of one of these NGOs and their attitude is reasonable as a result of their previous career. Richmond (1976) stated that 48.1% of the students chose private reading, the radio and television as their main source of environmental knowledge, awareness and attitude. The peak of attention to the environment coincides with a modern political era

in Iran's history which happened through the elections in 1997 and a new government with good environmental attitudes came to power hence, more focus turned towards increasing environmental awareness and attitude. During this period, the number of environmental NGOs (Non-governmental Organizations) had a rapid growth from below 10 to above 1000 (annual report of Department of the Environmental Protection of Iran). Therefore, may be these students grew up during the period of 1997.

#### **Environmental awareness and attitude among age group:**

In this study, there was a significant difference in responding to the questions on environmental awareness among age groups. This difference was between 1st group (17-25) and 3rd group (>40). Apparently, older respondents answered more frequently correct awareness than younger respondents.

One of the major factors influencing environmental awareness in research projects is getting experienced against the time that is spent. Hence, the impact of this learning in higher study levels and high ages might have significant different effects compared to lower study levels and ages. The older age may receive this information from the media in validating the above findings (Arduni, 2000; Strong, 1998; Yun, 2002; Chung and Poon, 2003; Sehat, 2000). Younger ages groups due to less experience and less study levels may be less receive information about above subject than older ages. However, the same result was achieved about environmental attitude. The older group (>40) has a higher attitude than the other 2 groups about environmental attitude. Based on an interpretation of (Strong, 1998) older ages has more chances for learning due to the life time.

#### **CONCLUSION**

In this study with increasing students' environmental awareness and attitude, they increase their environmental views. Some of finding in present study including good indication level of environmental awareness and attitude among students may come from the media or private interest to environmental issues. Media should, therefore be used more intensively to facilitate the transmission of environmental information and promote more positive environmental attitudes. Lim (1995) provides a good description of roles played by the media in disseminating environmental news in Singapore. The environmental awareness and attitude of the students in this study showed that the increase of age and level of study regardless of gender differences have shown significant differences. With regard to environmental attitude without

any significant difference, their environmental awareness is at a good level since, the Iranian students under this research have not conducted any academic education of environmental issues during their past and present education. Based on statistical results on stay period of students in Malaysia, there was no significant difference on above subjects.

This variable (students' stay period in Malaysia) is not included in the objective of the current research but it is measured as additional for confirmation that this information of students on environmental awareness and attitude may come from public media and due to the quite short residence of respondents in Malaysia, it is clear that the origin of their environmental awareness and attitude is the place where they had grown up.

During the recent years, the number of Iranian students in Malaysia has significantly increased. Taking into consideration the good study conditions of Malaysia, this procedure is expected to continue and more students are expected in coming years. Hence, more researches need to be conducted to evaluate the environmental attitudes and awareness of these students. In Iran, the governments take all decision to centrally due to NGOs (Non Government Organization) as a legal body is not in the position to make any action or decision instead of government therefore, it is the role of the government to do so.

#### **RECOMMENDATIONS**

However, it is compulsory for the government to take significant action against these environmental disturbances.

To make people more knowledgeable about the action and decisions which are being made by any of these bodies, the government should provide adequate information and news release through the media. This is consistent with Agenda-21 that is recognized by the Iranian government and committed for future action.

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