

# Raising Students' Awareness Toward Environmental Issues: Will There be Any Impact on Their Purchasing Behaviors?

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**Abstract**— This experimental research was conducted to test whether there was any change in students' environmental knowledge, attitudes, and behaviors following a brief text and video presentation on environmental issues. Thirty students of International Business Management program of a private university in Indonesia, who claimed to have little or no interest in environmental problems, were selected to be the subjects of this research. The results showed that there were indeed some significant changes in subjects' environmental knowledge ( $t = -6.599, p = 0.000$  and  $t = -4.722, p = 0.000$ ) and attitudes ( $t = -4.748, p = 0.000$ ) before and after following the presentation. However, the result also showed that subjects only interested in switching their choice of brands into the ones that claim to be more environmental-friendly ( $t = -3.003, p = 0.005$ ) instead of paying higher prices to buy environmental-friendly products or changing their purchasing behaviors after following the presentation. In short, this research showed that even apathy people can be educated about environmental issues and be induced to change their choice of brands into the more environmental-friendly ones. This situation will definitely bring hope not just to the producers of environmentally-friendly products but also to all human beings.

**Keywords** - Students, Environmental Awareness, Environmental Knowledge, Environmental Attitudes, Purchasing Behaviors

## I. INTRODUCTION

This world is facing major environmental problems, which are: forest destruction, global warming, ozone depletion, pollution, over-consumption of natural resources, and many others [1]. These environmental problems could not be minimized without any raise of environmental awareness among people throughout the world. Increasing environmental awareness can influence

human behavior in several ways, such as reduction of consumption, change of wasteful or harmful consumption patterns, preference of environment friendly products, etc [2].

Environmental awareness is usually treated as a multi-dimensional construction in literature. Zsóka Nemcsicsné distinguishes five dimensions of environmental awareness [2]:

1. **Environmental knowledge**, which is the sum of knowledge about environmental issues.
2. **Environmental values** are part of people's general set of values. Environmental values determine someone's general approach of the issue thus they play an important role in the development of someone's attitudes.
3. **Environmental attitudes** refer to a subject or a situation. Attitudes define the framework of thinking about their subject, as well as state someone's favor or disfavor, its degree and the level of confidence.
4. **Willingness to act** is stated commitment to act. For a consumer's to have the willingness to act, (s)he has to be able and willing to purchase.
5. **Actual action**. Intent to do something does not necessarily lead to actual action, as the situational factors may influence the outcome. Thus, it is also important to observe actual action, too.

According to the earliest model of environmental awareness dating back to the 1970s, ecological knowledge leads directly to environmental related attitudes and finally to pro-environmental behavior [3]. However, the findings of empirical research show that there are gaps between attitudes and actual behaviour. Attitudes do not directly determine behaviour but they influence the intention to act which then shapes actual action [4]. Similar with the other empirical research findings, Nemcsicsné proposes that the components of environmental awareness are closely related to each

other, environmental knowledge (together with other external factors) determines environmental values. All these components determine environmental attitudes. Positive attitudes generate willingness to act, which then leads to actual action [2].

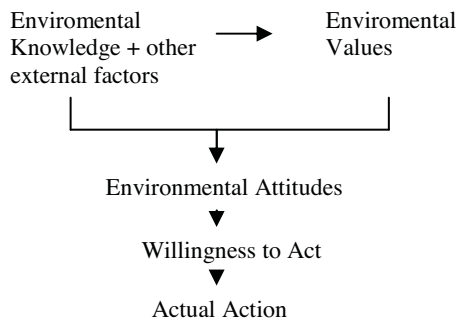


Figure 1. Five Dimensions of Environmental Awareness

This research will focus on giving environmental-related knowledge and measuring both environmental attitudes and willingness to act.

In giving environmental-related knowledge, it is necessary to consider the role of emotional involvement in shaping individual's beliefs, values, and attitudes. If external information contradicts someone's prevailing beliefs, the desire to achieve internal consistency will lead individual to avoid cognitive dissonance [5]. A research conducted by Dickerson, Thibodeau, Aronson, and Miller (1992) showed that cognitive dissonance can be used in motivating subjects in engaging in environment friendly behaviours [6]

Departing from those theoretical backgrounds, this research had developed an experimental method in which subjects were given a brief text and video presentation about environmental issues. The presentation provided both information, and practical skills and knowledge, since to be able to make environmentally aware decisions, individual must have both information, as well as practical skills and knowledge [7].

This research chose Business School students as its subjects under several considerations. First, business school students are expected to be future business leaders. Their approach and decisions on the environmental issues could affect the sustainability of human existence [1] [8]. Second, at the period of transition from adolescence to early adulthood, the young people form behavior pattern, attitudes, and values, which many of these patterns are carried well into their lifetimes [9]. Third, from a marketing perspective, young people are often recognized as a lucrative market segment that forms a powerful consumer spending group in their own way [9]. Therefore, although most of university students still mainly get their 'earnings' from parental contributions and/ or educational loans, they represent a large and important market for many products and services [10], including environment friendly ones.

## II. METHOD

### A. Experimental Method

This research was a simple pre test – post test experiment. Questionnaires were distributed to 70 (seventy) freshmen. There was a discriminatory question at the beginning of the questionnaire (i.e., "To what degree are you interested in environmental issues?"). This question was used to differentiate among subjects who were extremely interested, very interested, somewhat interested, or not interested in environmental issues. Thirty (30) subjects, who answered "somewhat interested" or "not interested" in environmental issues, were asked to join the experiment.

The experiment was conducted by giving presentation and displaying short video on an environmental case. The presentation explained major environmental issues and how they are so related with our daily activities. The video was on the miserable life of Chinese people living in Guiyu. They earned their lives by collecting copper from electronic trash which exposed them to many health care issues such as cancer due to water or air contamination. The presentation took 15 minutes consisted of remarks from the lecturer and a short video (108 seconds) from CBS 60 minutes titled "Sling – A walk around Guiyu" [11]. Students were asked to fill out the questionnaire before and after the presentation.

### B. Questionnaire

The problem of measuring environmental awareness is in its complexity, multi-dimensionality [2]. This research will limit the level of environmental awareness to measure into environmental knowledge, environmental attitudes, and willingness to act. Füle and Kenéz states that measuring environmental values is a difficult task. Researchers can draw the conclusions about those values from someone's attitudes or behaviors [2].

The questionnaire was divided into four sections. The first section consisted of 6 (six) questions of subject's concern of environmental danger (i.e., "In your daily life, are you concerned with the dangers that may arise from UV rays?"). Respondents used 5-point scale to answer this section, which are 0 = "I don't care," 1 = "Not concern," 2 = "Somewhat concern," 3 = "Very concern," 4 = "Extremely concern."

The second section measured subject's knowledge of certain environmental issues. It consisted of 8 (eight) issues (i.e., Of the global environment problems listed below, which one you think is important?). Respondents used 5-point scale to answer this section, which are 0 = "I don't know," 1 = "Not important," 2 = "Somewhat important," 3 = "Very important," 4 = "Extremely important."

The third section measured subject's environmental attitudes. It is important to measure attitudes to learn about the motives of a behavior [2]. This section consisted of 4 (four) statements (i.e., "there are more important things to do in this life than protect the environment."). Respondents used 5-point scale to

answer this section, which are 0 = “Strongly disagree,” 1 = “Disagree,” 2= “Neither agree nor disagree,” 3 = “Agree,” 4 = “Strongly agree.”

The fourth section measured subject’s willingness to act. It consisted of 3 (three) questions (i.e., Are you willing to switch your choose of brands into ones that claim to be more environmental friendly?). Respondents used 5-point scale to answer this section, which are 0 = “Very unwilling,” 1 = “Fairly unwilling,” 2= “Neither willing nor unwilling,” 3 = “Fairly willing,” 4 = “Very willing.”

C. Subject

The subjects of this experimental research were thirty (30) students of an International Business Management program in a private university in Indonesia. This study program, with the admission ratio of 1:5, has been famous to produce well-equipped young entrepreneurs, as well as job seekers, in Indonesia.

III. RESULT

The collected data was analysed using SPSS version 16. Collected data was normally distributed ( $p>0.05$ ). The mean, standard deviation, and reliability coefficient, for each measurement used in the research were presented in Table 1 and 2.

TABLE I  
DESCRIPTIVE STATISTICS & RELIABILITY COEFFICIENT – PRE TEST

Variable	Descriptive Statistics		Reliability
	Mean	SD	
Environmental Danger	2.3287	.61356	.843
Environmental Knowledge	2.6813	.64449	.888
Environmental Attitudes	3.2333	.66609	.679
Willingness to Pay More	3.80	.484	.834
Willingness to Switch Brand	3.70	.596	
Willingness to Change Purchasing Behavior	3.83	.592	

TABLE 2  
DESCRIPTIVE STATISTICS & RELIABILITY COEFFICIENT – POST TEST

Variable	Descriptive Statistics		Reliability
	Mean	SD	
Environmental Danger	2.9447	.68073	.860
Environmental Knowledge	3.1783	.63671	.851
Environmental Attitudes	3.6417	.69071	.717
Willingness to Pay More	4.00	.643	.834
Willingness to Switch Brand	4.07	.583	
Willingness to Change Purchasing Behavior	4.07	.583	

The results of statistical analysis using paired-sample t-test were presented in table 3 and 4.

TABLE 3  
PRE TEST – POST TEST CORRELATION

	N	Correlation	Sig.
Pair 1 Danger & Danger1	30	.692	.000
Pair 2 Importance & Importance1	30	.604	.000
Pair 3 Attitude & Attitude1	30	.759	.000
Pair 4 Pay & Pay1	30	.443	.014
Pair 5 Switch & Switch1	30	.357	.053
Pair 6 Change & Change1	30	.233	.215

TABLE 4  
PAIRED SAMPLE T-TEST

	t	df	Sig. (2-tailed)
Pair 1 Danger - Danger1	-6.599	29	.000
Pair 2 Importance - Importance1	-4.772	29	.000
Pair 3 Attitude - Attitude1	-4.748	29	.000
Pair 4 Pay - Pay1	-1.795	29	.083
Pair 5 Switch - Switch1	-3.003	29	.005
Pair 6 Change - Change1	-1.756	29	.090

The results showed that there were indeed some significant changes in subjects’ environmental knowledge ( $t = -6.599, p=0.000$  and  $t = -4.722, p= 0.000$ ) and attitudes ( $t = -4.748, p=0.000$ ) before and after following the presentation. However, the result also showed that subjects only interested in switching their choice of brands into the ones that claim to be more environmental-friendly ( $t = -3.003, p= 0.005$ ) instead of paying higher prices to buy environmental-friendly products or changing their purchasing behaviors after following the presentation.

#### IV. DISCUSSION

The results of this research showed that subjects indicated no significant change in their willingness to pay more for environmental friendly products or to change their purchasing behaviors over environmental reasons. Previous studies conducted by Fliegenschnee and Schelakowsky (2002) in [12] showed that primary motives that influence environmentally aware behavior can be traced back to situational or internal factors. According to Kollmuss and Agyeman in [12], situational factors include institutional constraints, economic means, social and cultural means, as well as political support. Apparently, subjects' sensitivity toward environmental issues in this economic downturn was still not the main determinants in purchasing a product. An environmentally conscious behavior has to be inline with personal priorities (e.g., buying product with a reasonable price) so that the motivation to act can increase. However, if these two factors are contradictory, the likelihood of action is smaller (e.g., buying environmental friendly product with more expensive price). Furthermore, established old habits (e.g., loyalty to certain brand) may prevent the individual from pursuing environmentally aware behavior [13].

However, the results of this research brought optimism for establishing environment education program in a university since it has been proven to raise students' environmental awareness. As a way to form behavior, attitudes, and values pattern that will last lifetime, environmental education (EE) must be introduced into the school curriculum as early as possible. It must cover wide range of topics including basic concept of ecology, environmental issues (global warming, deforestation, energy, water pollution, nuclear waste disposal, etc.) and the ways they influenced the development and the livelihood of the society. The EE must follow the principle of lifelong-learning, which embraces course integration, engages active participation in problem solving, provides balance between global and local perspective, as well as dwells into sustainable development and international cooperation [14]. This EE must also be a part of Business School's curriculum, as Business students should be both responsible future producers and consumers. Placing the EE as part of Business Curriculum means inserting academic merit system to appreciate good thinking and habit related to environment. This training is expected to change the mindset and habit of students and really prepared them to be the responsible consumers and producers by taking environmental issue into account in making any business, or purchasing, decision.

Last but not least, the results of this research brought hope for the producers of environmental friendly products. With a good marketing campaign, those producers would be able to sell more of their products and save this earth at the same time.

#### V. CONCLUSION

Gore [15] once said that in dealing with environmental challenges, people on this planet need to organize the response appropriately. Implementing the lifelong environmental education is a form of mobilization for renewable energy, conservation, and transition to low carbon economy. Save the earth now.

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