Students’ environmental awareness and pro-environmental behaviour: preliminary study of geography students at state university of malang.

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Abstract. In today’s world the environmental problems call for the serious solutions before they reach the point of no return. University students as scholars must be well informed about the current pressing environmental problems through formal education and informal education and become role models and champions of protecting the environment. The aim of this study was to evaluate the level of environmental awareness and pro-environmental behaviour among undergraduate Geography students at State University of Malang. This study used descriptive qualitative research design using survey method. To collect data, questionnaire was distributed among 100 respondents selected using simple random sampling method. Results on environmental awareness indicated that, most of the students were well informed and possessed higher understanding of environmental problems. However, the findings on self-reported environmentally responsible behaviour indicated otherwise that only few students practiced pro-environmental behaviour. There was a mismatch between students’ awareness on environmental problems and their actions towards environmentally responsible behaviour. That means being environmentally aware does not necessarily translate directly into environmentally responsible behaviour. There is need to increase rising awareness and enhance university students’ engagement to sustainability activities to establishing sustainable initiatives both on campus and beyond.

1. Introduction

Nowadays environmental problems are at alarming rate. Geography students are expected to possess the necessary information about today’s pressing environmental problems to become responsible and globally enlightened citizen and the champions for caring and protecting the environment. They are expected to bring about big difference as agents of change to protect the environment.

Universities are platforms that play crucial roles in transforming our societies by educating students to become rational future leaders and decision-makers with new knowledge, competences, informed decision and the power to create more sustainable communities [1]. Since Geography is one among other courses or studies that are directly concerned about the study of environmental problems to bringing about suitable and sustainable measure to these environmental problems.

Geography students are expected to demonstrate higher environmental caring behaviour through practicing environmentally friendly behaviour and became the good examples for caring the environment so as to be able to influence and attract community to practice those pro-environmental bevaighbour as a means to continue rising awareness as great agents of change.
Therefore, evaluating students’ environmental awareness and their pro-environmental behaviour is very crucial since it can present significant results to educational stakeholders, practitioners and decision makers to draw appropriate decisions about the effectiveness of our educational programs for students who are currently enrolled in universities and for the future generations on environmental issues [2].

1.1. Environmental Awareness
Environmental awareness is creating general awareness of environmental issues and their causes by bringing about changes in perception, attitude, values and skills necessary to solve environment related problems. It is the state of being aware, having knowledge about, and being conscious of the external surroundings in which people live and work, and which tend to influence people’s development and behaviour. Environmental awareness as an understanding of natural systems combined with how they interact with human social systems while many consider this as the ultimate driving force that stimulates knowledge [3]. Environmental awareness is the degree to which people are aware of problems regarding the environment and their support efforts to solve them and the willingness to contribute personally to their solutions [4].

Environmental awareness is the ultimate driving force that is stimulated by knowledge. Individual’s environmental awareness and pro-environmental behaviour increase with higher education and vice versa [5]. Highly educated individuals seem to possess a higher level of environmental knowledge and motivated to engage in environmentally responsible behaviour. Therefore, environmental awareness creates a community of knowledgeable and empowered citizens who engage in positive environmental actions to protect ecosystems. It creates positive attitudes about environmental issues, whilst curbing the negative role of human actions on the environment. Environmental awareness plays a crucial role in developing the character of caring in community [6].

It is widely accepted that environmental awareness leads to intentions to act on environmentally friendly behaviour. When people are aware of the environmental impacts brought by their own practices or actions they might feel guilt for destroying their own environment. Thus, if students are well informed about pro-environmental behaviour they might be great agents of change through practicing environmentally friendly behaviour as they interact with the environment to obtain their needs without compromising the needs of the future generation. Therefore, Geography students should acquire more appropriate range of awareness, understanding and concepts about the environment issues while they are in school so that they can achieve future critical judgment in their societies [7].

1.2. Indicators of environmental awareness.
Environmental awareness is a result of a combination of motivation, knowledge and skills. Knowledge refers to the information that shapes attitudes and beliefs, which in turn the attitudes and beliefs leads to desired action. Knowledge is predictor of an individual’s attitudes regarding pro-environmental behaviour.

**Indicators of Environmental Awareness**

| Stimulus | Perception | Reaction |
|----------|------------|----------|
| **Environmental Knowledge** | **Environmental Awareness** | **Pro-environmental Behaviour** |
| - Information about the causes and impacts of various environmental problems | - Human activities and consumer behaviour contributes the most to the environmental problems | - Practicing environmentally friendly behaviour |

Figure 1. Elements of environmental awareness [7]

Motivation to improve the environment is highly based on values and attitudes. Values are the moral principles and beliefs or accepted standards of a person or social group. Values influence the individual decisions and those individual decisions are consequential in shaping individual and
ultimately group’s behaviour with regard to the environment. Attitude is the way a person views something or tends to behave in a certain manner towards it. It is a relatively stable and enduring predisposition to behave or react in a certain characteristic way. But sometimes environmental values and attitudes may not necessarily lead to environmental friendly behaviour although they enhance it.

1.3. Theories of environmental awareness
Psychologists have developed several models and theories of environmental awareness. Theory of Planned Behaviour developed from the theory of reasoned action (TRA) foresees human behaviour by proposing that the behaviour of a person is affected by behavioural intentions, which are primarily affected by attitudes toward the act and by subjective norms [8]. Theory of reasoned action (TRA) has two components: The first component is the attitude toward the act which is the function of perceived consequences. The second component is the subjective norms which are a function of beliefs about the significance of referents and motivation to act in accordance with those referents [9]. These associations were supported by numerous articles related to consumer behaviour and social psychology. An extension of the theory of reasoned action (TRA) is the theory of planned behaviour (TPB). The TPB added the concept of perceived behavioural control to the TRA as a third predictor of intention [8].

1.4. Pro-Environmental Behaviour
Pro-environmental behaviour is a sort of behaviour that consciously seeks to minimize the negative impact of one’s actions on the natural and built world (environmentalism). It is behaviour that reduces environmental harms and considers societal protection for the environment [10].

Pro-environmental behaviour is any behaviour or action which enhances the environmental quality with or without such intention [11]. Therefore, pro-environmental behaviour is a rational practice to promote resource protection, conservation practices and supports sustainable use of the natural environment. Pro-environmental behaviour as the behaviour that has less of a negative impact than an alternative behaviour towards environment [12].

1.5. Indicators of pro-environmental behaviour
Intent, necessity and possibility are the indicators of pro-environmental behaviour. Intent refers to an anticipated outcome that is intended or that guides your planned actions. Necessity is the greater sense of personal responsibility. Meanwhile, responsibility refers to the responsibility to improve the world and also the responsibility for the environmental impact caused by one’s own behaviour. Individuals with high necessity regarding behaviour are more likely to adopt a particular behaviour. Thus, individuals with a greater sense of personal responsibility are more likely to have the intention to engage in pro-environmental behaviour [13].

1.6. Factors influencing pro-environmental behaviour
There are three main factors influencing pro-environmental behaviour namely demographic factors, external factors and internal factors [14].

Demographic factors (age, gender and education) whereas women seem to exhibit more or demonstrate greater concern for the environment than men. Compared to men; women are more committed to higher pro-environmental behaviour such as recycling and buying locally produced organic products [15]. Likewise, older people do not care about environmental issues in general. This is because there is a broad variability between concerns and attitudes amongst elders as environmental beliefs decline with age. Therefore, older people engage less often in active behaviour such as joining environmental groups and volunteerism [16].

External factors (institutional, social, economic and cultural) whereby there exists a broad variation on pro-environmental behaviour due to the influence of external factor in such that educated people are more aware and concerned with social welfare. Therefore, pro-environmental behaviour is directly associated with high income and higher education that is higher socio-economic status. It is believed
that people in developed economies are more likely to exhibit pro-environmental behaviour than people in developing countries [17].

Internal factor (motivation, environmental knowledge, awareness, values, attitudes, responsibility and priority). Various studies on pro-environmental behaviour provide assumption that individuals make reasoned choices and choose alternatives with perceived cost and benefits such as money, moral and normative concerns (effort or social approval, and affect).

1.7. Theories of pro-environmental behaviour

There are various theories of pro-environmental behaviour. The highly accepted and studied model for exploring pro-environmental behaviour in various domains is Value-Belief-Norm Theory [18].

According to Value-Belief-Norm (VBN) theory, personal values, ecological worldview, adverse consequences for valued objects, perceived ability to reduce threat and sense of obligation to take pro-environmental actions are considered as successive variables needed for generation of pro-environmental behaviour. Value-Belief-Norm (VBN) theory is a combination of value theory, norm-activation theory and New Environmental Paradigm (NEP). Value-Belief-Norm (VBN) theory is a better predictor of pro-environmental behaviour compared to other theories developed thus far [19].

Behavioural intention is the determinant of pro-environmental behaviour, perceived behavioural control, attitude and moral norm as explains the variables of intention [3]. This means that social norm has indirect influence while moral (personal) norm has direct influence on intention [20]. In contrary from previous studies, perceived behavioural control and habits as well as intention to act were determined as the direct predictors of pro-environmental behaviour.

1.8. Measuring pro-environmental behaviour.

In this study pro-environmental behaviour were measured using questionnaire on self-reported behaviour (verbally). The behaviour included in the questionnaire was the behaviour identified by environmental scientists as having the greatest impact on the environment. It measures the respondents’ pro-environmental behaviour using a questionnaire in the form of scores.

2. Methods

The objective of the study was to assess the students' environmental awareness in relation to their environmental friendly behaviour to protecting the environment among geography students at State University of Malang. This is because the extent of an individual’s attitude toward environment is exclusively observable through their behaviour. The study employed descriptive qualitative research design to describe the relationship existed between environmental awareness and pro-environmental behaviour. This approach was appropriate because it provides an in-depth view of the subject at hand [21].

The subjects of the study were undergraduate geography students from faculty of social science at State University of Malang. Sample consisted of 65 geography students from six (6) classes. The sample was purposely selected from different classes as they were expected not only to be most informed individuals about today’s environmental problems but also to be future actors of sustainable development.

Data were collected using 15-items structured questionnaire developed by the researcher divided into two sections whereby only 65 questionnaires were returned and used for the data analysis. The first section had 5 questions aimed at measuring the general knowledge on environmental issues. Respondents were asked to indicate the extent to which they agree or disagree to the given environmental awareness statements from “strongly disagree” to “strongly agree” to determine their level of awareness. Meanwhile the second section had 10 question aimed at measuring self-practiced environmentally responsible behaviour in environmental conservation, energy efficiency and resource management, waste management and green consumption. The respondents were asked to specify how frequently they do practice the given pro-environmental behaviour in their daily routines from “never” to always” to determine their frequency. The investigated behaviour was determined according to an
in-depth literature survey of previous studies. To overcome potential problems with self-reporting bias and clarity of responses, all questions are close-ended, hence respondents had to select from a range of provided answers to reduce the richness of responses. Table1. Presents the behavioural indicators used in the questionnaire.

| Variable                        | Indicator                  | Description                                                   |
|---------------------------------|----------------------------|---------------------------------------------------------------|
| Behaviour in environmental      | Reduced pollution          | Walking or cycling for short distances                        |
| conservation                    |                            |                                                               |
| Behaviour in energy efficiency   | Energy/water saving        | Turning off lights/ electronics devices when not in use        |
| and resource management         | actions                    | and wisely use of water                                       |
| Behaviour in waste management   | Reduced the consumption of | Using reusable items and taking your own shopping bags         |
|                                 | disposable items           | when shopping                                                  |
| Behaviour in green consumption  | Living environmentally     | Buying locally produced products and not ordering take-out    |
|                                 | friendly lifestyle          | from restaurants.                                              |

Data were analyzed through three steps namely data reduction, data display, and drawing conclusion.

3. Results and Discussion
The findings on environmental awareness showed that most of the students were well informed and demonstrated to possess higher understanding of environmental issues. However, the findings on self-reported environmentally responsible behaviour indicated that only few students practiced environmentally friendly behaviour.

This means that a large number of students did not improvement to bring about environmental stewardship to become the champions for caring and protecting the environment despite being aware of the various stressing environmental problems. Therefore, based on the above result it can be concluded that there was a serious mismatch between being awareness and practicing environmentally responsible behaviour.

This shows that environmental awareness does not necessarily translate directly into environmentally responsible behaviour. Most of environmental problems in our daily life does not simply solved by being aware of it is negative impacts to both humans non-humans and future generations. Rather environmental problems will be solved if individually and collectively we will develop a true culture of life caring values to bring about deep change as a best practice to the entire environment as a whole.

The reason behind the above result probably could be due to lack of encouragement from lecturers such as teaching by doing (leading). Lecturers need to teach by doing as a means of setting out the living examples to students. Example. Using re-usable bottles and reducing Carbon foot-print by walking or cycling. Likewise, another reason could be lack of direct students’ engagement in sustainable issues. Example: Students does not full participate in waste management, planning and innovation activities (learning and doing) on campus and beyond.

4. Conclusion
There is need to increase continual improvement through awareness raising (moral responsibility). This means Geography students needs to feel proud as scholars and future leaders created with intelligence and will power to bring about sustainable changes and become role models and champions of caring and preserving the environment.

Universities has to establish food sustainable initiatives such as free filtered water stations to encourage re-usable life and discount on cafeteria costs if students bring their own utensils to cater plastic pollution.
Last but not least, there is a need to enhance students’ engagement with sustainability activities (getting hands dirty) both on campus and outside campus. University students should be encouraged to participate in environmental conservation projects such as clean-up and tree planting projects through volunteering or internship to foster their participation on real life environmental conservation activities.

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