Behavioral intention and its relationship with gender: a study of green school students in Surakarta, Indonesia

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Abstract. The environmental problems faced today have had a great impact on human beings. The root causes of all environmental problems are related to injudicious human behavior. Since human behavior is determined by Behavioral Intention (BI), it is crucial to examine the role of BI with regard to the study of environmentally friendly behavior. As such, in this research, BI was scrutinized; in particular, this study aimed to identify the factors affecting the particular degree of BI from the perspective of gender. This study was conducted with 334 high school student participants in the district of Surakarta, Indonesia. According to the New Ecological Paradigm (NEP) result, the BI possessed by high school students does not sufficiently promote environmentally friendly behavior. This research also found that there is no significant link between BI and gender.

Key words: Environmentally Friendly Behavior, Behavioral Intention, Gender

1. Introduction
Environmental problems are an ever-increasing global issue and exert adverse effects on human life. Such problems should be dealt with immediately, with respect to both organic and inorganic elements. One organic component that contributes to environmental problems, and is becoming the focus of attention for those who are attempting to preserve the environment, is human behavior [1][2][3]. Ever-changing human behavior requires the consumption of increasingly large amounts of Earth’s natural resources [4]. As such, environment and social experts are focusing their efforts on improving human behavior as quickly as possible, in order to realize sustainable development [5][6].

Environmentally friendly behavior is supported by Behavioral Intention (BI) as the main factor in conditioning the emerging behavior [7][8][9][10]. Every individual’s BI is different, due to the effects of certain factors, one of which is gender. In psychological research, gender has been found to affect mindset, attitude, and belief in making decisions, impacting on the readiness to perform a behavior [11][12][13]. Another study mentions that gender does not affect an individual’s BI [14]. The discussion relates to the effect of gender on BI; generally, significantly different effects have been found in various studies, and this study will attempt to establish the nature of the relationship between gender and BI in Surakarta district, Indonesia.
1.1. Environmentally Friendly Behavior and Behavioral Intention: New Ecological Paradigm Scale Measurement

Human behavior is affected by BI. Ajzen (1991) [7] notes that BI is the main factor assumed to capture the motivation factors affecting human behavior [15]. An individual realizing that the result of performing a behavior is positive will have a positive attitude, belief and perspective regarding the behavior, and similarly, a behavior with a negative result will engender a negative attitude [10][15].

BI on the environment consists of some factors that are assumed to encourage an individual to behave in an environmentally friendly manner. The factors affecting BI are subjective norms, which control attitudes towards the environment [7,16]. Other aspects affecting an individual’s behavior regarding the environment are the cognition an individual has of the environment [17-20], beliefs, and the amount of responsibility they feel for the environment [21]. BI represents an individual’s cognitive readiness to behave [22] and affects the behavior to appear [14, 17, 18]. Cultural and social differences in every area affect the cognitive level, thereby impacting on different BI [16, 23].

BI can be measured by using the New Ecological Paradigm [24]. The NEP has been used widely as an instrument to determine the relationship between BI and supporting aspects [14, 25-32]. The NEP instrument is one which is adapted to social life in America [33]. The limitations relate to the content existing in the NEP statement, which should be adjusted according to the area of the object of research.

1.2. The Effect of Gender on Behavioral Intention

Gender plays an important part in affecting an individual’s BI. The difference between the mindsets and beliefs of men and women results in the difference in values supporting BI. Such differences have resulted from cultural patterns and biological factors. However, cultural factors have a greater potential to cause differences in factors affecting BI than biological factors [34-37].

The differences between men and women are created by sociocultural norms and expectations, behavior, and attitude [11]. These differences are explained in the research conducted by Park & Slaby (1983) which found that parents tend to give boys more freedom than girls to develop their potential and to prevent girls from taking action [38]. Further differences were studied by [11] Eisler et al. (2003), who explained that men’s knowledge levels tend to be higher than those of women, while women’s motivation levels are higher than those of men. The effect of gender on behavioral attention potentially has a close relationship with and impact on an individual’s BI.

2. Methodology

This research was conducted by using an NEP instrument [33]. This instrument is valid and reliable, and has been applied in various countries, including Niger [14], Malaysia [39], and the United State of America [40], to measure NEP and factors affecting environmentally friendly behavior. The NEP instrument consists of 15 revised statements [41] and gender status. The NEP status is categorized using a scale (1–5): 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree.

The sample was taken from the Senior High Schools that have been named as green schools in Surakarta district, Indonesia, using a random sampling technique. The questionnaire was distributed to the students of Senior High Schools because they are adolescents. Adolescent students tend to exhibit manners of thinking that can lead to a wise or emotional decision [42-43]. The sample was conducted in Solo Raya because the regencies in that area have achieved the Adipura award as a form of appreciation their care for the environment. In such an area, it is assumed that awareness and understanding of environmentally friendly behavior is encouraged. The NEP instrument was distributed to 352 students, of which 334 questionnaires (89 males and 245 females) were deemed valid; 18 were not valid because some question items had not been answered. In other words, the response rate was 100%, and 94.88% of questionnaires were complete. Data analysis was carried out quantitatively using SPSS 17 application and Itemen version 3.0 in order to determine the validity, reliability, mean score, and relationship between BI and gender.
3. Results and Discussions

3.1 Results

The result of the NEP score, deriving from the mean score of 334 students, was 3.27 (5-scale). The mean NEP obtained indicates low BI among the students [44]. The reliability score was 0.465, indicating low instrument reliability based on Cronbach’s alpha criteria. The validity of the question for items 1–15 obtained, respectively, the item-scale correlation scores of: 0.44, 0.48, 0.49, 0.46, 0.37, 0.01, 0.15, 0.41, 0.04, 0.41, 0.43, 0.46, 0.47, 0.26, and 0.19. The data validity shows that items 5, 6, 7, 8, 14, and 15 obtained item-scale correlation coefficient < 0.3 and are thereby stated as invalid. The details of the mean score and standard deviation of the respondents can be seen in Table 1.

Table 1. NEP Items with Frequency, Mean, and Standard Deviation of Respondents

| NEP facets        | Statement items                                                                 | Responses (%) | Mean | SD  |
|-------------------|---------------------------------------------------------------------------------|---------------|------|-----|
| Limit to growth   | The earth’s ability of supporting the human population number is limited.        | 62            | 18   | 20  | 3.60 | 1.03 |
|                   | Actually, earth has much natural resource to support human life, but human does not sufficient knowledge to utilize it.º | 11.6          | 73.8 | 14.6 | 2.14 | 0.88 |
|                   | Earth has limited space and resources to support human life.                    | 49.5          | 24.2 | 26.3 | 3.42 | 1.22 |
| Anti-anthropocentrism | Human beings has right to utilize resource and environment completely in sufficing their life.º | 15.5          | 69   | 15.5 | 2.21 | 1.09 |
|                   | Living organism other than human being has equal right to live and to utilize resource and environment. | 92.8          | 1.5  | 5.7  | 4.51 | 0.48 |
|                   | Human being can master natural resource and environment completely to be utilized for his interest.º | 40.8          | 27.5 | 31.7 | 3.19 | 1.09 |
| Fragility of nature | When human being utilizes natural resource and                                | 58.8          | 15.5 | 25.7 | 3.54 | 0.91 |

º
| Category                        | Description                                                                 | Score 1 | Score 2 | Score 3 | Score 4 | Score 5 |
|--------------------------------|-------------------------------------------------------------------------------|---------|---------|---------|---------|---------|
| Rejection of exemptionalism    | Natural balance becomes damaged frequently.                                  | 57.9    | 10.5    | 31.6    | 3.58    | 0.84    |
|                                | Natural resource and environment will not be harmed by modernization and technology created by human beings. | 66.3    | 19.1    | 14.6    | 3.62    | 1.35    |
|                                | Natural balance is damaged easily.                                            | 12.5    | 40.6    | 46.9    | 2.61    | 0.74    |
|                                | Despite intellectuality and technology, human beings keep submitted to natural resource. | 60      | 10.2    | 29.8    | 3.70    | 0.84    |
|                                | Human beings with intellectuality and technology they create can always solve natural resource and environment problems. | 6.6     | 68.7    | 24.7    | 2.17    | 0.71    |
| Possibility of an eco-crisis   | In utilizing natural resource, human beings always act without mature consideration. | 47.7    | 25.1    | 27.2    | 3.28    | 1.11    |
|                                | The current condition of natural resource and environment tend to be worse and harmful to human life sustainability. | 82.7    | 4.5     | 12.8    | 4.10    | 0.68    |
|                                | The story of environment and natural resource damage is actually exaggerated. | 51      | 17.3    | 31.7    | 3.44    | 1.00    |
|                                | Mean total NEP score                                                          | 3.27    | 0.33    |         |         |         |
The result of analysis shows that the mean scores of the facets of NEP were obtained as follows: limit to growth result 3.05 ± 1.21, anti-anthropocentrism 3.30 ± 1.33, fragility of nature balance 3.58 ± 1.01, rejection of exemptionalism 2.82 ± 1.08, and possibility of an eco-crisis 3.61 ± 1.02. The comparison of the mean score for every facet can be seen in Figure 1.

![Figure 1. Respondents’ Mean Scores and Standard Deviation on NEP Facets](image)

The result of the analysis shows the mean scores of 3.33 and 3.25 for men and women, respectively. The significance level of 0.058 shows that there is no significant difference between women and men. The comparison of NEP mean scores between men and women can be seen in Table 2.

| Gender   | Mean score | SD  |
|----------|------------|-----|
| Male     | 3.33       | 0.33|
| Female   | 3.25       | 0.33|

### 3.2 Discussion

This research aimed to discover the NEP value of Senior High School students from schools with a green status and to determine the relationship between gender and NEP value as the indicator of BI assessment. The result of the analysis shows that the NEP value of students is not sufficient to support the appearance of environmentally friendly behavior. The score obtained (3.27) is similar to those of a number of samples from areas such as Africa [14] (2.95; Ogunbode, 2013), Australia [45] (3.96; Blakie, 1992), the United States [46] (3.57; Kortenkamp, & Moore, 2006), Brazil [47] (3.55; Schultz et al., 2000), Turkey [48] (3.50; Erdogan, 2009). The difference in the NEP mean score of women and men is not significant (0.058); this finding is similar to the result of the research conducted by Ogunbode (2013) [14]. The analysis of learning materials utilized in schools shows that, in fact, some
of the opinions expressed by students regarding the rejection of exemptionalism items are inconsistent with the content taught.

Environmental education, as an attempt to create sustainable development, should provide output that encourages the establishment of sustainable development, either individually or collectively [49]. The low NEP value was obtained because the individuals have not yet understood the content of the statements proposed [14], and the learning process does not yet support the intention to behave in an environmentally friendly manner [50-51]. Different cultures and social conditions in every area also affect the materials taught. An individual’s perspective determines whether or not something is good, and this is highly influenced by culture and social life. For example, in Indonesia’s south beach, there is a tradition to dispose of a buffalo’s head on the beach as an expression of gratitude to God. This traditional perspective can be viewed differently when related to various disciplines. Culture and social life are inseparable from an individual’s perspective in determining behavior and becoming the factors which affect different BI [23, 29, 30, 32, 52].

The different effects of sex on BI play a significant role. Eisler et al. (2003) explain that differences in sex affect mindset, perspective, and behavior, due to the process of establishing maturity by environment and culture [11]. Psychological and biological factors of men and women can also impact behavioral differences [37]. Men tend to be more intelligent, in theory, but women have a greater understanding of feelings in making decisions. The absence of significant differences in this research is due to some factors, such as: age [12], moral development or maturity [53], and education [54]. Further research related to the factors accounting for BI differences should be conducted in the future.

4. Conclusions
The results of the research show that the NEP mean score of Senior High School students based in a green school is not adequate to support the appearance of BI. There is no significant difference between the BI of boys and girls. Varying NEP values in every aspect show that the students have different perspectives on BI, which are affected by cultural, social, education, psychological, and biological factors. More research should be conducted to determine which factors affect the low BI, such that it will be possible to encourage environmentally friendly behavior among students, thereby improving the social and environmental conditions in which Indonesian people live.

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