Malaysian Journal of Sustainable Environment
Vol.12.No.1 (2025) 225-240
doi: 10.24191/myse.v12i1.1680

THE EFFECTS OF GENDER AND EDUCATION LEVEL ON ENVIRONMENTAL AWARENESS: FINDINGS FROM THE LENS OF COMMUNITY IN SEREMBAN

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Received: 13 June 2024
Accepted: 04 September 2024
Published: 31 March 2024

ABSTRACT

This present study examines the effects of gender and level of education on environmental awareness in Seremban, Negeri Sembilan, Malaysia. Specifically, this study aims to identify the level of environmental awareness amongst the community in Seremban and to determine the significant difference in environmental awareness based on demographic factors namely gender and level of education. Data was collected through a structured questionnaire from 231 respondents. The statistical techniques used in this study are Descriptive statistics, T-test, and One-way ANOVA to achieve the research objectives of the study. The finding of this study has revealed that the level of environmental awareness among the community in Seremban is high in which majority of the communities are aware of environmental awareness. Besides, results from independent t-tests and one–way ANOVA also have confirmed that there is a significant difference between gender and level of education towards environmental awareness.

Keywords: *Gender, Education Level, Environmental Awareness, Community, Negeri Sembilan*

INTRODUCTION

Malaysia has recently dealt with a number of environmental issues, the most serious are global warming or climate change, air pollution, and water pollution (Mohd Hasnu and Muhammad, 2022). Most importantly, Malaysia is among many other countries worldwide that believe in the existence and threat of climate change. As a peninsular country, the impact of climate change could also pose a serious threat to those living in coastal communities due to the rise of sea levels and others.

A recent survey on climate change has revealed that 82 percent of the population in the country believed that the average global temperature would increase in 2020 (Statista Research Department, 2020). The reason why these environmental issues keep on rising is due to the lack of awareness among the community. As highlighted by Hassan, Noordin, and Sulaiman (2010), the term environmental awareness consists of three (3) concepts namely emotional, attitude and practice of sustainability awareness. Meanwhile, Altin et al. (2014) stated that environmental awareness is awareness of environmental issues and active involvement in environmental organizations. According to Karatekin (2014), environmental awareness is a trigger to nurture positive attitudes and affection towards positive environmental behaviour. Therefore, the awareness and concern about environmental issues and the causes and adverse impacts are important to be measured in an environmental awareness context (Karatekin, 2014).

With regards to the issues of the environment, for instance, the Selangor community has been facing a disruption of water supply due to water pollution. It is due to the water in Sungai Selangor, has disrupted the Klang Valley water supply is contaminated (Team, 2020). As highlighted by Meenakshi Raman, the president of the environmental and social justice organisation Sahabat Alam Malaysia, has revealed that a fundamental flaw with the Environmental Quality Act, which is the fines are not enough to deter businesses from polluting land and waterways, even after the 1996 amendments (Esterman, 2020).

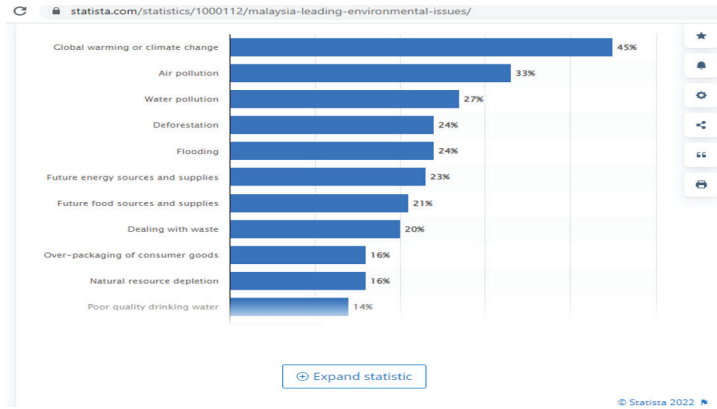

Figure 1. The Most Concerning Environmental Issues According to Citizens Across Malaysia

Source: Statista, (2022).

Besides that, other activities such as deforestation also contributed to these environmental issues. The most common reason for clearing land is to make room for crops and ranches. Trees have been frequently felled for fuel, lumber, and to make room for towns. Many animals die as a consequence of habitat destruction caused by deforestation. Forest degradation and deforestation are complex issues in Malaysia, with numerous causes. However, the focus has been primarily on direct or proximal factors such as industrial logging, large-scale commercial oil palm plantations and agriculture, road development, and major dams. Between 2002 and 2020, Malaysia lost 2.7 million hectares of smoggy primary forest, accounting for 34% of the national annual tree cover loss. The total surface area of Malaysia's smoggy native forest shrank by 17% during this period (Malik, 2021). Malaysia lost 2.7 million hectares of primary forests between 2002 and 2020, according to data from Global Forest Watch (GFW), an online platform that monitors forests. This accounted for 34% of the country's total tree cover loss during the period. Malaysia's primary forest area has also shrunk by 17%. According to environmentalists while corporate and activist replanting efforts are commendable, Malaysia lags significantly behind in aspects of forest preservation. According to Environmental organisation EcoKnights vice-president Amlir Ayat, the figures mentioned in the GFW report are not surprising that Malaysia experienced several economic problems between 2002 and 2020, which resulted in significant logging, which is a quick source of income (Fazaniza, 2022).

Furthermore, open burning, large-scale tree felling, and dumping of garbage or waste everywhere have also resulted in various types of pollution in Malaysia. The issue of environmental pollution is no longer unusual, it has even become a daily challenge. Every year, the haze problem that threatens the health of all creatures as a result of massive forest burning in Indonesia has threatened every country in the region including Malaysia. Unfortunately, there has been no clear solution to the haze threat from Indonesia. In fact, human activities that degrade and even destroy the environment, not only continue, but sadly it is still increasing. On the other hand, efforts to protect and improve the environment are underappreciated or ineffective. This includes environmental policies and legislation. This problem is exacerbated when environmental legislation is not enforced effectively or is viewed as unimportant because the country's economic development is more important or must be prioritised over environmental protection (Adnan, 2017).

Meanwhile, in terms of demographic factors, Dhenge et al., (2022), highlighted that gender can manipulate environmental awareness due to the different roles and duties held by men or women. Based on their perceived level of experience with environmental preservation, they are involved in the management and conservation of biodiversity. In addition, one of the important components of environmental initiatives is a gender-positive mindset. Besides, the highest level of education is another factor that can affect environmental awareness. Based on the study conducted at Karadeniz Technical University Health Services Vocational School, the students' level of environmental awareness or consciousness and behaviour was high (Gumrukcuoglu et al., 2017). Through this study, it has been discovered that they are assisting organisations working to protect the environment, increasing the production of recycled materials, replicating energy-saving products, producing and utilising environmentally friendly products, having chute units for a variety of chemical wastes, and utilising natural gas (Gumrukcuoglu et al., 2017). Given the challenges of modern humanistic education, one should pay special attention to the importance of environmental education in light of the major degradation of environmental quality parameters. The environment influences life dynamic behaviour, population health, spiritual, and moral development (Nazarenko, 2018).

Thus, based on the above-mentioned statements, this study aims to achieve the following research objectives:-

1. To identify the level of environmental awareness among the community in Seremban.
2. To determine the significant difference in environmental awareness based on (i) gender, (ii) and level of education

LITERATURE REVIEW

Environmental Awareness

According to Keles (2012), a deficiency of environmental awareness to overwhelming environmental problems, urbanizations, industrialization, deforestation, rising global temperature, and degradation of biodiversity impedes the achievements of policymakers' efforts to encounter environmental stresses (Keles, 2012). Thus, it is essential to understand the context of environmental awareness. Enger and Smith (2013) define environmental awareness as the science that assists people in developing the values, skills, and knowledge needed to live sustainably. Environmental awareness is important in raising people's understanding of the environment and empowering them to become responsible citizens who care about the environment. According to Mkumbachi et al. (2020), there is a causal association between individual environmental awareness and pro-environmental behaviour. A person who has a strong environmental value is usually conscious of how his or her behaviour impacts the environment. This is to demonstrate that environmental awareness leads to pro-environmental behaviour. When a person obtains accurate information about his or her environment, he or she becomes more conscious of human-caused environmental challenges, which motivates them to live a more sustainable lifestyle. The understanding of their surroundings will shape their attitude, beliefs, and, finally, their expected behaviour (Handayani et al., 2021).

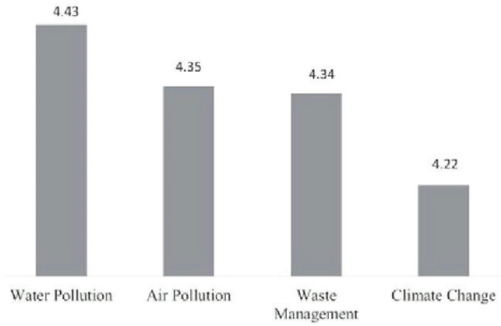

Figure 2. Environmental Awareness Level of Malaysians

Source: Author

SOCIO-DEMOGRAPHIC FACTORS ON ENVIRONMENTAL AWARENESS

Gender and Environmental Awareness

Gender refers to the socially constructed characteristics of men and women with gender norms, roles, and relationships, as well as biological differences between males and females (Osterberg 1996). Gender difference, as a social construct, is an important consideration in developing social policies and promoting social welfare (Taniguchi, 2006). In relation to this study context, research has found that females are socialized to be more caring, altruistic, cooperative, and helpful, while males are socialized to be more independent and competitive (Zelezny, Chua., Aldrich, 2002). As a result of different expectations for men and women, environmental concerns may vary by gender. In general, females are more inclined to foster bonds with nature and possess a higher level of concern for the environment than males (Triantafyllidis., Darvin, 2021). They participate in biodiversity management and conservation based on their perceived environmental protection experience. A positive gender attitude is critical when it comes to environmental activities. It has made a significant contribution to raising awareness of environmental issues and finding solutions to them. As a result, the importance of gender attitudes should not be overlooked when considering environmental awareness. From this perspective, it is critical to comprehend environmental issues and devise appropriate solutions.

Furthermore, there has been little research on gender differences and attitudes toward environmental awareness (Dhenge et al., 2022).

According to Dhenge et al., (2022), gender issues in environmental awareness entail determining the impact of gender roles, responsibilities, and their relationships to the use, management, and conservation of the environment. The roles of men and women in environmental awareness differ from one country to the next, as well as within countries and cultures. It is primarily determined by the respective gender's knowledge, experience, awareness, needs, risks and vulnerabilities, and decision-making power (Soma Chakrabarti 2020). Not only that, gender has an impact on all aspects, including social, economic, and health (Nierenberg, 2002). It is a complex and multidimensional concept in the context of environmental concerns that can be defined as the extent to which men and women are emotionally and sensitively committed to environmental problems and provide support to various environmental protection activities (Chenyang and Aaron, 2015).

Education Level and Environmental Awareness

In general, education can influence household environmental behaviours in a variety of ways. Formal education is the primary means by which people acquire knowledge and skills. Besides, education increases people's access to more sources and types of information, which facilitates knowledge acquisition even more. Environmental knowledge and information may increase people's sense of environmental responsibility. Furthermore, education may boost the marginal utility of pro-environmental behaviours by allowing people to pursue higher levels of demand. Alternatively, education may reduce people's environmental awareness if the education system encourages people to be obsessed with competition and thus focuses on self-improvement values (Wang et al., 2022). Besides, not all levels of education have the same impact on environmental awareness and behavior. Some studies suggest that formal education, especially at higher levels, can increase environmental literacy and concern, but may not necessarily translate into pro-environmental actions. Other studies indicate that informal and non-formal education, such as experiential learning, community involvement, media exposure, and social networks, can have a stronger influence on environmental behavior, especially when they are relevant, meaningful, and empowering for the learners.

According to Wang et al. (2022), individuals' pro-environmental attitudes and behaviors are expected to bring positive externalities to society because environmental problems are closely related to human behaviours. Education can help to promote pro-environmental attitudes and behaviours in a variety of ways. For starters, formal education is the primary means by which people acquire knowledge and skills. Because environmental concepts and topics can be complex, knowledge and skills gained through education familiarize individuals with scientific terms in environmental issues. Second, and relatedly, people with a higher level of formal education have access to a broader range of information sources and types. People's environmental knowledge and awareness improve as their exposure to information grows. Based on the hierarchy of needs theory, education may help individuals meet their basic needs, allowing them to pursue a higher level of demand by adopting a pro-environmental lifestyle. In other words, education may raise the marginal utility of pro-environmental behaviours in comparison to the marginal utility of money.

METHODOLOGY

To identify the level of environmental awareness among the community in Seremban, the survey method involves a collection of information from respondents via a structured questionnaire and self-administered approaches are used. The questionnaires developed for this study were divided into two parts: A and B. Part A consisted of the respondent's background, while Part B covered environmental awareness. The sampling design process involved four steps namely (a) define the target population, (b) determine the sampling frame, (c) select a sampling technique, and (d) determine the sample size. The target population in this study was the individual community who lived in Seremban. The reason why this study focused on Seremban because the Negeri Sembilan government is urged to take more proactive measures in dealing with environmental-related issues such as floods and water disruptions. The respondents of this study come from people who lived in Taman Seremban 3, Taman Lavender 88, Taman Matahari Heights, and Rasah. In this study, the total population in Seremban is about 504,000 (Seremban, Malaysia Metro Area Population 1950-2023, 2023). Thus, based on the table Krejcie and Morgan (1970), about 381 respondents were chosen from the total population. However, during the process of data

collection, only 231 the respondents returned the questionnaires and were used to further analyse the data. In this study, the sampling technique used is purposive sampling with several inclusion criteria such as the respondents are willing to participate in the survey, respondents are aware about the environmental issues, and the respondents possess some knowledge about environmental issues, especially in the Malaysian context. For this study, 5 points-Likert scale was employed ranging from 1 (Strongly not aware), 2 (Not aware), 3 (Neutral), 4 (Aware), and 5 (Strongly aware) to measure the level of environmental awareness amongst the community in Seremban, Negeri Sembilan.

RESULTS AND DISCUSSION

The study findings focus on three sections: the first is to identify the level of environmental awareness among the community in Seremban, the second: to determine the significant difference in environmental awareness based on gender an the third: to determine the significance difference on environmental awareness based on education level and was discussed accordingly based on research objectives of the study.

Table 1. Level of Environmental Awareness among the Community in Seremban

	N	Min	Max	Mean	SD
I am aware of my responsibility towards the environment.	231	1	5	4.43	.742
I know about the environmental issues that have been happening around the world.	231	1	5	4.15	.894
Environmental issues such as the destruction of natural habitats can cause the extinction of flora and fauna.	231	1	5	4.49	.768
I am aware of the initiatives taken by various organizations to reduce environmental pollution.	231	1	5	4.24	.861
It is important to engage in green practices in order to preserve the environment.	231	1	5	4.40	.795
When I buy something, I should consider whether or not it can be recycled.	231	1	5	4.12	.946
I should walk or ride a bicycle when I need to travel a short distance.	231	1	5	4.19	.874
I like to share ideas on how to reduce pollution with everyone around me.	231	1	5	4.07	.948

I like to see people's effort in protecting the environment.	231	1	5	4.48	.757

Source: Author

As shown in Table 1, existing studies has indicates that the level of environmental awareness among the community in Seremban is high. This can be seen with mean value of the environmental awareness which indicates (M=4.49; SD=.768). Thus, based on the current findings, apparently it shows that the community in Seremban are aware about environmental issues happening around them. A person who has a strong environmental value is usually conscious of how his or her behaviour impacts the environment. This is to demonstrate that environmental awareness leads to pro-environmental behaviour. When a person obtains accurate information about his or her environment, he or she becomes more conscious of human-caused environmental challenges, which motivates them to live a more sustainable lifestyle. The understanding of the surroundings will shape their attitude, beliefs, and, finally, their expected behaviour (Handayani et al., 2021).

Research Objective 1: To Determine the Significance Difference on Environmental Awareness on the Basis of Gender

In this study, gender of the respondents is one of the most important factors on environmental awareness. For this study, gender classification is observed. Results of the independent T-test is used to investigate whether or not there is a significant difference between these two groups. The independent T-test was employed as the principal approach for comparing two sets of respondents' namely female and male.

Table 2. Independent T-Test

Variable		Mean	t-value	df	p-value	Decisions
Gender	Male	4.2913	-.084	229	.000 (sig value)	Accept Ha1 and reject Ho1
	Female	4.2990				

Source: Author

As shown in Table 2, statistically the study findings indicated there is a significant difference on environmental awareness between male and female t (-0.084) = 0.000, $p < 0.05$). The mean value of male's gender on environmental awareness (M = 4.2913) is approximately close to female's tendency (M = 4.2990) respectively. As a result of the study findings, this

study reject null hypothesis. In relation to the current study finding, this study was supported by prior studies, Patel et la., (2017), indicated that women are more aware of and concerned about the environment rather than men. On the other hand, males spend more time outside their homes and thus have more opportunities to become aware of environmental problems, potentially leading to more knowledge than females (Patel et al., 2017). Meanwhile, other studies shows that there is no significant difference found between females and males on environmental awareness and no firm conclusions can be drawn regarding the influence of gender on various environmental issues Mohai (1992). Females are more inclined to foster bonds with nature and possess a higher level of concern for the environment rather than males (Triantafyllidis, Darvin, 2021). Apparently, we can see that men and women play different roles and have different responsibilities in our families, societies, and cultures.

Research Objective 2: To Determine the Significant Difference in Environmental Awareness based on the Level of Education

For this objective, respondents have been classified based on their education level namely SPM, Diploma, Bachelor Degree and others (Master's and PhD). Table 3 presents the results of the one-way ANOVA analysis as follows:-

Table 3. Result of One-Way Anova

Variables	Group	Mean (SD)	Levene's Statistics	F-test (p-value
Education Level	SPM Diploma Bachelor's Degree Other	3.9529 (0.87389) 4.4111 (0.52839) 4.4524 (0.53333) 4.4909 (0.59574)	1.400	9.119 (0.000)

Source: Author

As shown in Table 3, the significance value is less than 0.05. Hence, there is a significant difference between the level of education and environmental awareness ($0.000 < 0.05$). As a result of the study findings, this study rejects null hypothesis. In relation to the study findings, the education of the respondents is one of the most important factors of the study. Education is important for people to make a judgement and evaluate what is going on around them. Most importantly, education can help people acquire the knowledge, skills, values, and attitudes that enable them to

understand and appreciate the environment and its interconnection with human activities. Besides, education can also foster critical thinking, problem-solving, and creativity, which are essential for finding innovative and sustainable solutions to environmental challenges. Education can promote civic engagement, ethical responsibility, and global citizenship, which can motivate people to take action and participate in environmental programs, activities and initiatives. This current study finding was supported by Grammare M., J & Stenger (2022), who proved that prior studies have shown that the level of education whether formal or informal can have direct and indirect effects on environmental awareness as well as on the individual environment-friendly behaviours resulting from it.

CONCLUSION

In the Malaysian context, we realized that the Malaysian government has implemented and promoted various environmental awareness programmes and activities held by different relevant ministries and agencies every year such as 'Towards Smart Energy Culture' by Energy Commission Malaysia, 'One State One River Programme' by Ministry of Agriculture, 'Recycle for Nature' by Malaysian Nature Society and "National Environmental Awareness Programmes" and many others. One of the significant reasons all these programs and activities are introduced and implemented in order to create and enhance the level of environmental awareness among citizens. Hence, this paper aims to identify the level of environmental awareness among the community with particular emphasis in Seremban and determine the significant difference on environmental awareness based on (i) gender, (ii) and level of education. By analyzing the data obtained from the lens of individual communities in Seremban, we have contributed further insights into the existing body of knowledge regarding the effects of socio-demographic factors measured in terms of gender and education level on environmental awareness. Besides, due to the escalating severity and recurring environmental issues in Malaysia, and Seremban is no exception, it is of utmost importance to raise community awareness and create a more environmentally responsible society through comprehensive and effective implementation of environment-friendly strategies.

Also, based on the current study findings, it is hoped that the

government can develop comprehensive and effective environmental guidelines and regulations in order to overcome the environmental issues in Malaysia. Therefore, it is crucial to understand the effects of gender and level of education on environmental awareness among communities in Seremban, Negeri Sembilan. Furthermore, this study helps the researchers to gain new knowledge regarding the effects of socio-demographic factors on environmental awareness among the community especially in Seremban areas. Most importantly, this study also could enhance people's awareness and understanding of environmental problems that occurred worldwide including in Malaysia. Thus, it is hoped that the Malaysian government especially the policy makers and also other relevant parties' needs to take a proactive role in overcoming the environmental problems or at least mitigate the problems from pervasive and recurring.

ACKNOWLEDGEMENT

The authors would like to thanks to all those who participated and contributed in making this study possible.

FUNDING

There is no funding for this research.

AUTHOR CONTRIBUTIONS

All authors have contributed to the design of the research, analysis, the interpretation of the data, revising it critically for the important of the discussion. All authors have read and approved the final manuscript.

CONFLICT OF INTEREST

There is no conflict of interest.

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