Environmental Concern, Attitude and Intention in Understanding Student’s Anti-Littering Behavior Using Structural Equation Modeling

Hayati Ibrahim 1,2*, Manohar Mariapan 1,*, Evelyn Lim Ai Lin 1,* and Sheena Bidin 1,*

1 Faculty Forestry and Environment, University Putra Malaysia, Seri Kembangan 43400, Selangor, Malaysia; ibrahim.hayati@yahoo.com
2 Department of Tourism and Hospitality, Polytechnic Sultan Idris Shah, Sungai Ayer Tawar 45100, Selangor, Malaysia
* Correspondence: mano@upm.edu.my (M.M.); limailinevelyn@upm.edu.my (E.L.A.L.); sheena@upm.edu.my (S.B.)

Abstract: Concerns about the environment began to rise as various issues such as littering increased. Littering is one of the problems involving the environment, and higher education campuses are also actively practising anti-littering to show their efforts. The aim of this study is to test the relationship between environmental concern, attitude and intention on anti-littering using Theory of Planned Behavior Extended Model. A total of 303 students of the Polytechnic Malaysia campus were respondents in this study and the data were analyzed by Structural Equation Modeling using SPSS Amos 24.0 Statistical Packages. Findings show that there is a direct and indirect effect between environmental concern and student’s anti-littering intention. The indirect result shows that attitude towards anti-littering behavior partially mediates the relationship between environmental concern and anti-littering intention. The implications of the research findings and suggestions for the future study are also included in the study.

Keywords: anti-littering; environmental concern; attitude; intention; SEM

1. Introduction

Littering is a negative activity that has brought various adverse effects on the environment. The problem stems from human behavior that is not sensitive to the environment. Littering activities can bring a negative visual effect on the image of the area and give a bad impression towards the surrounding community. Higher education institutions are also no exception to these issues. Sugar wrappers; plastics and paper waste; food and beverage packaging containers are often left everywhere and not thrown in the bin properly around the campus area. These littering activities can be seen either inside or outside the lecture room and either after break time or before the end of lecture time. Rubbish is any discarded item, dirt, or something that is not valuable or useful [1]. Rubbish or garbage that is not properly disposed of in the bin will cause bad air. Emitting unpleasant odor was the bad air from the scattered rubbish is an attraction for wild animals like rats, dogs, monkeys and also flies that are looking for food. They are all the disease carriers. The waste management system is not something that can be underestimated because the cost of operating the cleaning system is very high. The government had reported that more than RM1 billion had been allocated to establish and fund the operations of the Solid Waste Management and Public Cleansing Corporation for this purpose. To prevent littering activities from continuing to pollute the environment, proactive measures such as anti-littering are very important to carry out. Anti-littering is one of the pro-environmental behaviors. Pro-environmental behavior refers to behaviors that contribute to the sustainability of the natural environment and reductions in pollution [2]. Ojedokun [3] says that individuals...
will have more tendencies to engage in pro-environmental behaviors if they have certain desirable personality characteristics and an unfavorable attitude towards littering.

2. Literature Review

Studies on littering behavior are increasing in several countries in Asia such as Jordan, Iran, Japan and Singapore. Malaysia is also no exception in addressing this issue to ensure the well-being of its people [4]. Previously, Ong and Sovacool [5] discovered that agencies, organizations, and public people play an important role in shaping a good atmosphere where cleaning is avoided, and millions of dollars are spent per year on litter removal in their study on littering behavior in Singapore. However, in Japan, waste is respected, and cleaning is regarded as efficient and noble, with little money spent on litter removal due to the large number of volunteers. A study conducted by Asmui, Norhuda, and Wahid [6] has found that campus students are also a contributor to littering behavior. Higher education institutions also see anti-littering practices as something very important because they are aware that a clean environment has an influence on students’ learning performance [7]. This means that if the learning institute area is clean, then more successful students will be produced and vice versa. Anti-littering practices are important to ensure the cleanliness of an area for the purpose of maintaining health, safety, and comfort. However, the approach used to produce anti-littering behavior remains vague to this day. Previously, scholars often associated littering behavior with motivational factors, knowledge, awareness. Moqbel, El-tah, and Haddad [8] in their study have suggested that combining intrinsic and extrinsic motivators in understanding anti-littering can improve the strategy. Mapotse and Mashiloane [9] have suggested that environmental education be applied to school students because it can increase students’ awareness on littering. Anwar, Saudi, and Sinaga [10], in their study using the knowledge factor in littering behavior, found that students find it difficult to throw rubbish in the rubbish bin. Mulder [11] said that persuasive technique has produced a positive effect on students anti-littering behavior. In the study of social psychology, attitude is a core principle that is often used to explain changes in human behavior because it allows us to learn more about how we view the environment and act [12]. In this study, the power of attitude will be used to predict students’ campus anti-littering behavior. The theory that will be used in this study is the Theory of Planned Behavior. It is a powerful theory in predicting human behavior [13,14]. In TPB, attitude is an antecedent to study a person’s behavior, and behavior has a direct relationship with behavioral intention. Attitude involved an overall evaluation towards the attitude object (e.g., favor or disfavor; or like or dislike) [15]. The attitude object in this study is anti-littering behavior. The Extended TPB Model is often used to enhance the explanatory effect of TPB [16] and some scholars suggest adding the environmental concern as a construct in The Extended TPB Model especially studies on environment [17].

2.1. Research Framework and Hypotheses Development

The Theory of Planned Behavior is a theory used to study human behavior, and its ability to predict human behavior is undeniable. Because anti-littering is a planned action, the theoretical basis given by the Theory of Planned Behavior (TPB) was found applicable for this research. The TPB has been successfully applied to a wide range of studies focusing on ecological behavior [18]. The TPB model was proposed by Ajzen in 1991 and derived from the Theory of Reasoned Action (TRA) that was developed by Fishbein and Ajzen in 1975. It consists of three important components, namely attitude, subjective norm, and perceived behavioral control which are used as important determinants in understanding the intention of human behaviors and this intention that influences humans to make behavioral changes [19]. Attitude is the most influential component of the TPB on human intentions and human behavior [20]. This study is also supported by Yarimoglu and Gunay [21]; on 400 respondents on green hotels, they also showed that attitudes towards green hotels positively affected the intention to visit green hotels. Attitude is an individual’s positive or negative evaluation of performing a specific behavior [19]. It means, when individuals
have a more positive attitude, their behavioral intention will be more positive and vice versa [22]. What is also interesting about the TPB is that this theory allows researchers to use extended TPB models other than the original components in the theory. Many scholars use the extended TPB model to prove the effectiveness of the use of the TPB and it turns out that the variance is increasing [23]. Recently, issues about the environment have been growing as a result of the awareness of the importance of the balance of nature in human life. Thus, many scholars use the environmental concern construct in their studies. Environmental concern is a general attitude toward environmental conservation, and it is an important construct to determine whether people change their behaviors more environmentally [24,25]. Using the extended TPB model, Chen and Tung [16] in their study found out that environmental concern successfully influences customer attitude towards green hotels. Hartmann and Apaolaza-Ibáñez [26] found out that attitude toward the brand was successfully influenced by environmental concern. De Groot and Steg [17] in their study have combined an environmental concern construct and the TPB to understand the behaviors of shoppers and employees in the Netherlands in intention to use the transferium. They found that environmental concern has a significant effect on intention. This is supported by Naalchi [27] who has conducted his research on 450 students from the Islamic Azad University of Yazd on their intention to purchase green products. He found that student’s environmental concerns had a significant positive effect on intention toward green products. A meta-analysis about the correlation between environmental concern and behaviors found it was average, which is 0.35 and 0.26, respectively [28]. It indicates that environmental concern does not have a very high effect on behaviors. Bamberg [29] suggested that an individual’s environmental concern is an indirect determinant of specific behaviors. It means an individual’s environmental concern would have an impact on specific behaviors through situation-specific beliefs and attitude. Onurlubaş [30] found out that the impact of environmental concern on green-product-buying intention is partially mediated by environmental attitude. Maichum, Parichatnon, and Peng [31] also found that environmental attitude has partially mediated the relationship between environmental concern and intention on green products. Because environmental concern is an important antecedent determining an individual’s specific behaviors, this study has used it for understanding student’s campus anti-littering intentions. Figure 1 shows proposed research framework for the current study based on the theoretical review above.

![Diagram](Figure 1. Proposed research framework of student’s anti-littering intention based on the Theory of Planned Behavior Extended Model.)
2.2. Research Hypothesis

**Hypothesis 1 (H1.)** There is a direct significant effect of environmental concern on anti-littering intentions.

**Hypothesis 2 (H2.)** There is a direct significant effect of environmental concern on attitude towards anti-littering.

**Hypothesis 3 (H3.)** There is a direct significant effect of attitude towards anti-littering on anti-littering intentions.

**Hypothesis 4 (H4.)** There is a mediation effect of attitude towards anti-littering between environmental concern and anti-littering intention.

3. Materials and Methods

This study was conducted in Malaysia because Malaysia is also a country that is not exempt from environmental issues. Because this study was conducted to examine student’s campus anti-littering, therefore this study will use polytechnic students as the study sample. A polytechnic is one of the institutes of higher learning that has a large campus to accommodate a large number of students. In total, the polytechnic has a total of 36 campuses throughout Malaysia, and almost all of its students (Semester 1 to Semester 5) live on the campus. It is only offering a full-time course for undergraduate students. This sample is selected by using simple random sampling as all polytechnic campus students have the same opportunity to answer the distributed instruments. The person in charge has been identified earlier at each polytechnic. Only polytechnics that agreed to collaborate in this study would distribute questionnaires to their students.

This study uses a questionnaire as a research instrument, and it consists of two parts. The first part is related to the background of the respondents while the second part contains 11 items that were used to measure environmental concern (5 items), attitude (3 items), and intention (3 items). All items were measured using a 5-point Likert-type scale from 5-strongly agree to 1-strongly disagree. All items were obtained based on previous studies. Items that were used to measure environmental concern—such as “we are approaching a limit on the number of people the earth can support”, “plants and animals have as much right as us to exist”, “our interference with nature always produces disastrous consequences”, “Despite our special abilities, we are still subject to the laws of nature”, and “human are severely abusing the environment”—were adapted from [32]. The scale used to measure attitude and intention is based on [33]. The data is displayed in the Appendix A.

Data collection is carried out online using a Google form and distributed through WhatsApp application. The students were only required to click on the response they thought was suitable because the study instrument is created using an online form. The procedure of this study involves two steps. The first step is the pilot study, and the second step is the actual study. In the pilot study, a total of 70 respondents answered the questionnaire. The value of Cronbach alpha from 0.86–0.95 to the three constructs indicates that the items have excellent internal consistency. The actual study has been implemented in January 2021, and a total of 310 respondents answered the questionnaire, but only 303 data can be used for analysis.

In this study, the data were analyzed using SPSS 26.0 and SPSS Amos 24.0 Statistical Software Packages. SPSS 26.0 was used to conduct descriptive statistics analysis of the data sample while SPSS Amos 24.0 was used to analyze structural equation modeling (SEM). SEM is a confirmatory method providing a comprehensive means for validating the measurement model of latent constructs. The validation procedure is called confirmatory factor analysis (CFA) [34].
4. Results

4.1. Sample Description

Table 1 shows that students aged between 18–19 years are the largest group of respondents, comprising 60% from the total. Female students were found to be the largest respondents with a total of 58.4%, while the rest were male. Malay students were the largest respondents with a total of 63% followed by Sarawak Ethnics at 23.3% and followed by Chinese students at 9.2%. Muslim students were found to dominate this study with a total of 65.6%, followed by Christians as much as 26.9%. At least 2% of students are Hindus. The majority of respondents in this study are from the information technology (IT) field students (40.7%), followed by students majoring in business (37.7%), engineering (15.4%) and tourism and hospitality (6.2%). The number of students answering this questionnaire consisted of Semester 1 students (26.6%), followed by semester 5 students (23.6%), Semester 3 (17%), Semester 4 (16.7%) and Semester 2 (16.1%). A summary of the sample data is as in Table 1.

![Table 1. Sample description.](image)

| Item          | Classification     | Sample Amounts | Percentage (%) |
|---------------|--------------------|----------------|----------------|
| Age           | 18–19              | 183            | 60             |
|               | 20–21              | 107            | 35.1           |
|               | 22 and above       | 15             | 4.9            |
| Gender        | Male               | 127            | 41.6           |
|               | Female             | 178            | 58.4           |
| Race          | Malay              | 192            | 63             |
|               | Chinese            | 28             | 9.2            |
|               | Indian             | 4              | 1.3            |
|               | Sarawak Ethnics    | 71             | 23.3           |
|               | Sabah Ethnics      | 10             | 3.3            |
| Religion      | Islam              | 200            | 65.6           |
|               | Buddha             | 21             | 6.9            |
|               | Hindu              | 2              | 0.7            |
|               | Christian          | 82             | 26.9           |
| Study Field   | Business           | 115            | 37.7           |
|               | Tourism and Hospitality | 19 | 6.2 |
|               | Engineering        | 47             | 15.4           |
|               | IT                 | 124            | 40.7           |
| Semester      | 1                  | 81             | 26.6           |
|               | 2                  | 49             | 16.1           |
|               | 3                  | 52             | 17             |
|               | 4                  | 51             | 16.7           |
|               | 5                  | 72             | 23.6           |
| Total         |                    | 303            | 100            |

4.2. Confirmatory Factor Analysis (CFA)

The CFA method is able to determine the unidimensionality, validity and reliability of a latent structure. The CFA was conducted for all the latent constructs before modeling the inter-relation in an SEM [34]. The measuring objects are unidimensional if the factor loading of the respective latent structure is appropriate. Any object with a low factor loading should be omitted from a measurement model to ensure its unidimensionality. There are three types of validity measurement, namely convergent validity, construct validity, discriminant validity. When all elements in a measurement model are statistically relevant, it is said to have convergent validity. The convergent validity of each construct may also be verified by computing the Average Variance Extracted (AVE). To achieve convergent validity, the value of AVE should be 0.5 or higher. When a fitness index for a construct reaches the standard, construct validity is achieved. When the measurement
model is free of redundant items, discriminatory validity is achieved. The degree to which a measurement model is accurate in measuring the intended latent construct is referred to as its reliability. Internal reliability, composite reliability (CR), and average variance derived are the three types of reliability tests (AVE). When the Cronbach’s Alpha coefficient is greater than 0.7, internal reliability is achieved (calculated in SPSS). CR assesses a latent construct’s reliability and internal consistency. To achieve CR for a construct, a value of CR >0.6 is needed and calculated using a formula. The average percentage of variance explained by the measuring items for a construct is denoted by AVE. An AVE greater than 0.5 is needed and is calculated using a formula.

This study has compressively verified the fit statistics of the model by selecting statistics such as Chi Square/Degrees of Freedom ($\chi^2$/df), Root Mean Square of Error Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI). In general, if $2$/df is between 1 and 3, TLI, CFI, and RMSEA are both greater than 0.9, and RMSEA is less than 0.08, the model measurement has strong fitness indexes [34]. The results for fitness indexes (Figure 2) in this analysis showed that the measurement model is fitting ($2$/df = 2.882, CFI = 0.973, TLI = 0.964, RMSEA = 0.079).

![Fitness Index Results](image-url)

**Figure 2.** Fitness index results.

As presented in Table 2, the composite reliability (CR) of three latent variables ranges from 0.877 to 0.936. All the result is above the 0.7 cut-off [35]. Thus, the comprehensive model has a high internal consistency and reliability. Second, the convergent validity of the measurement model is tested using standardized factor loading coefficient and average variance extraction (AVE). The standardized factor loading coefficient for the 11 observable variables in the comprehensive model ranges from 0.769 to 0.899. The result shows all the factor loading are above the 0.5 threshold. As a result, the latent variables are well explained by the observable variables. Furthermore, the AVE of all latent variables varies between 0.704 and 0.746. This result is higher than the 0.5 cut-off [35]. This result shows that the variance of all the observable variables that is explained by latent variables is greater than the number of variables explained by error.
Table 2. Convergent Validity and Composite Reliability.

| Construct               | Item | Factor Loading | CR  | AVE  |
|-------------------------|------|----------------|-----|------|
| Environmental Concern   | EC1  | 0.856          |     |      |
|                         | EC2  | 0.895          |     |      |
|                         | EC3  | 0.872          | 0.936| 0.746|
|                         | EC4  | 0.859          |     |      |
|                         | EC5  | 0.835          |     |      |
| Attitude                | A1   | 0.899          |     |      |
|                         | A2   | 0.865          | 0.896| 0.742|
|                         | A3   | 0.818          |     |      |
| Intention               | N1   | 0.860          |     |      |
|                         | N2   | 0.884          | 0.877| 0.704|
|                         | N3   | 0.769          |     |      |

The discriminant validity for all the constructs is evaluated by comparing the square root of AVE and the correlation coefficient of constructs. If the square root of AVE (diagonal value with bold) is larger than the correlation coefficient (the value in its row and column), we can conclude that the discriminant validity is achieved. Table 3 shows the square root of the AVE values of each construct and the correlation values between the respective constructs. The results show that all the square root of the AVE values are larger than the correlation coefficient value. It shows that the discriminant validity of all the constructs has been achieved [35].

Table 3. Discriminant Validity Index Summary for the construct.

| Construct      | Environmental Concern | Attitude | Intention |
|----------------|-----------------------|----------|-----------|
| Environmental Concern | 0.86                |          |           |
| Attitude       | 0.83                  | 0.86     |           |
| Intention      | 0.78                  | 0.75     | 0.84      |

Contents are bolded to show their significant.

Table 4 presents the normality assessment for every item involved in the measurement model. The normality assessment is made by assessing the measure of skewness for every item. The absolute value of skewness of 1.0 or lower indicates the data is normally distributed. If the distribution is found to depart from normality, the researcher could assess the Mahala Nobis distance to identify the outliers in the dataset. In this study, Table 3 shows that the data is normally distributed because all the skewness values indicate below 1.0.

Table 4. The Assessment of normality distribution for items of the constructs.

| Variable | Min | Max | Skew  | C.R.  | Kurtosis | C.R.  |
|----------|-----|-----|-------|-------|----------|-------|
| EC1      | 1.00| 5.00| 0.040 | -0.287| -1.071   | -3.819|
| EC2      | 1.00| 5.00| 0.057 | -0.405| -1.364   | -4.863|
| EC3      | 1.00| 5.00| 0.031 | 0.218 | -1.062   | -3.784|
| EC4      | 1.00| 5.00| 0.023 | -0.167| -1.304   | -4.648|
| EC5      | 1.00| 5.00| 0.011 | 0.078 | -1.134   | -4.072|
| N1       | 1.00| 5.00| 0.006 | 0.040 | -0.628   | -2.241|
| N2       | 1.00| 5.00| 0.058 | 0.413 | -0.915   | -3.264|
| N3       | 1.00| 5.00| 0.004 | 0.028 | -0.620   | -2.211|
| A3       | 1.00| 5.00| 0.096 | -0.681| -0.968   | -3.452|
| A2       | 1.00| 5.00| 0.000 | 0.001 | -0.840   | -2.995|
| A1       | 1.00| 5.00| 0.027 | 0.189 | -1.058   | -3.771|
| Multivariate |      |     |       | -3.553| -1.834   |
4.3. Structural Equation Modeling

The statistics in Figure 3 are as follows: $\chi^2/df = 2.882$, CFI = 0.973, TLI = 0.964, RMSEA = 0.079. These results indicate that the goodness-of-fit statistics of the modeling has been achieved based on the required level.

Table 5 indicates the results of the modeling test. The standardized path coefficients of environmental concern to attitude are 0.83, attitude to intention is 0.32, and environmental concern to intention is 0.52. Therefore, each value is highly significant. As a result, hypotheses 1 to 3 are supported. That is, environmental concern positively affects intention, environmental concern positively affects attitude, and attitude positively affects intention.

4.4. Multi-Group Analysis

According to [36], the mediation impact describes how two variables are connected together, and for that reason the explanation is needed for the indirect effects and mediation relationships. Table 5 is used as a reference to determine the existence of the role of attitude towards anti-littering as a mediator on the relationship between environmental concern and anti-littering intention. The result found that attitude towards anti-littering is partially mediated in this study because all paths show a direct and significant relationship. Thus, the hypothesis H4 is supported. To reconfirm the results of this mediation analysis, the researcher has performed a resampling procedure known as Bootstrapping. In the Bootstrapping procedure, the number of resampling could be between 500 to 1000 times from the existing dataset. The algorithm would compute the mean and standard error for every sample. From the resampling process, the algorithm develops sampling distribution for the estimates.

Based on the Table 6 results on the significance of the direct and indirect effect, the Bootstrapping result 0.264 (indirect effect) confirmed that a partial mediation had occurred indirectly in the relationship between environmental concern and anti-littering.
intention. It is confirmed that the attitude towards anti-littering plays a partial mediator between environmental concern and anti-littering intention.

Table 6. The summary—the significance of direct and indirect effects.

|                      | Indirect Effect | Direct Effect |
|----------------------|-----------------|---------------|
| Bootstrapping result | 0.264           | 0.518         |
| Bootstrapping p-value| 0.003           | 0.002         |
| Result               | significant     | significant   |
| Type of mediation    | Partial mediation because direct is also significant |

5. Discussion and Conclusions

This study adopts the extended TPB model to investigate Malaysian Polytechnic campus students’ anti-littering intention. The main purpose is to test the strength of attitude and its function in determining the relationship between environmental concern and intention. The study analyzed the direct and indirect effect of students’ environmental concern on anti-littering intentions; the effect of environmental concern on students’ attitude towards anti-littering; and students’ attitude towards anti-littering on anti-littering intention.

Based on the test results of this study, it is clear that attitude plays a very important role in determining whether a person is positive towards environmental behavior or not. The results of this study—which have found that attitude towards anti-littering has a significant and direct relationship to intention—are in line with previous studies that found attitude has an influence on intention [20,21]. De Leeuw [20] found out attitude is the most influential component of TPB on high-school students’ pro-environmental intentions [20]. The result also in line with studies by Yarimoglu and Gunay [21] on 400 respondents on green hotels also showed that attitudes towards green hotels positively affected the intention to visit green hotels.

The results of this study have also found that environmental concern successfully influences intention either directly or indirectly through the influence of attitude. It is based on the result that found there is a significant direct effect of environmental concern on intention. This result is in line with the previous studies shown by De Groot and Steg [17] in their study that combined environmental concern construct and the TPB to understand the behaviors of shoppers and employees in the Netherlands in intention to use the transferium. They found environmental concern has a significant effect on intention. The result also supported by Naalchi [27] who is conducted a research on 450 students from the Islamic Azad University of Yazd on their intention to purchase green products. He found that students’ environmental concerns had a significant positive effect on intention toward green products.

The result also shows that there is a significant direct effect of environmental concern on attitude towards anti-littering. This result is in line with the previous study. Chen and Tung [16] in their study have used the Extended TPB Model and have found that environmental concern successfully influences customer attitude towards green hotels. Hartmann and Apaolaza-Ibáñez [26] also found out that the attitude toward the brand was successfully influenced by environmental concern.

The result of the current study shows that attitude towards anti-littering partially mediates the relationship between environmental concern and intention on anti-littering. This means that students’ concern for environmental issues can influence their intentions towards anti-littering directly or indirectly through a positive assessment of anti-littering; only then does the concern successfully influence their intentions towards anti-littering. This is also in line with a previous study on environmental behavior stating that attitude mediates the relationship between environmental concern and intention. Onurlubaş [30] found out that the impact of environmental concern on green product buying intention is partially mediated by environmental attitude. Maichum, Parichatnon, and Peng [31] also found that environmental attitude has partially mediated the relationship between environmental concern and intention on green products.
In conclusion, attitude is a very important factor in determining human pro-environmental behaviors. Therefore, in cultivating the spirit of anti-littering behavior among students, stakeholders such as institutional administrators who want to keep the image of the campus clean and beautiful should implement programmes or activities such as campaigns [9]. In addition, environmental concern is also an important influence on anti-littering intention. Therefore, stakeholders should also carry out activities that can increase concern for the environment among campus students. Furman [37] states that elements of concern can be nurtured through knowledge, such as talks on the importance of anti-littering behavior on ecosystem quality; conduct recycling programs by placing recycling bins in places easily accessible by students; showing video footage of environmental quality and its effects that can increase students’ level of concern; involving students in program cleaning activities in institutional areas; training or seminar [38]; etc.

The main limitation of this study is the study examining intention instead of the actual behavior of campus students’ anti-littering. Although previous studies have shown that behavioral intention has a significant influence on actual behavior [39], it should be noted that not all students’ attitudes and intentions are the same as their actual behavior. As a recommendation for future studies, researchers can conduct a study on campus student’s actual behavior by using either interview or observation methods. In addition, future research can also use the institution administrator as a sample in this study to see their views. Future studies may also test the impact of knowledge or environmental communication materials (advertisement, movie) on anti-littering behavior.

Author Contributions: Conceptualization, M.M. and E.L.A.L.; methodology, M.M.; formal analysis, H.I.; writing—original draft preparation, H.I.; writing—review and editing, H.I; supervision, S.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research was partially funded by University Putra Malaysia (UPM) under UPM Journal Publication Fund.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

| Construct          | Indicators                                                                 | Source |
|--------------------|----------------------------------------------------------------------------|--------|
| Environmental Concern | I believe we are approaching a limit on the number of people the earth can support. | [32]   |
| EC1                | I believe we are approaching a limit on the number of people the earth can support. |        |
| EC2                | I believe plants and animals have as much right like us to exist.            |        |
| EC3                | I believe our interference with nature always produces disastrous consequences. |        |
| EC4                | I believe despite our special abilities, we are still subject to the laws of nature. |        |
| EC5                | I believe humans are severely abusing the environment.                        |        |
| Attitude           | I strongly dislike leaving the classroom with trash on my table.              | [33]   |
| A1                 | I strongly dislike leaving the classroom with trash on my table.              |        |
| A2                 | I strongly dislike putting my food and beverage waste containers outside the trash bin after meals on campus. |        |
| A3                 | Often, I will pick up my rubbish that falls in the campus street area.       |        |
| Intention          | I will ensure not to leave my trash on the table before leaving the classroom. | [33]   |
| N1                 | I will ensure not to leave my trash on the table before leaving the classroom. |        |
| N2                 | I will never put my food and drink container outside the rubbish bin in the campus area. | [33]   |
| N3                 | I will make an effort to pick up my trash that falls in the campus street area. |        |

References
1. Geller, E.S.; Brasted, W.S.; Mann, M.F. Waste receptable designs as interventions for litter control. J. Environ. Syst. 1980, 9, 145–160. [CrossRef]
2. Steg, L.; Vlek, C. Encouraging pro-environmental behaviour: An integrative review and research agenda. J. Environ. Psychol. 2009, 29, 309–317. [CrossRef]
3. Ojedokun, O. Attitude towards littering as a mediator of the relationship between personality attributes and responsible environmental behavior. Waste Manag. 2011, 31, 2601–2611. [CrossRef]
35. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [CrossRef]

36. Kenny, B. The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *J. Personal. Soc. Psychol.* **1986**, *51*, 1173–1182.

37. Furman, A. A note on environmental concern in a developing country: Results from an Istanbul survey. *Environ. Behav.* **1998**, *30*. [CrossRef]

38. Abun, D. Environmental Attitude and Environmental Behavior of Catholic Colleges’ Employees in Ilocos Sur, Philippines. *Texila Int. J. Acad. Res.* **2017**, *4*, 23–52. [CrossRef]

39. Ajzen, I. Nature and operation of attitudes. *Ann. Rev. Psychol.* **2001**, *52*, 27–58. [CrossRef] [PubMed]