Waste Management Practices and Recycling Intention among Undergraduates Students in Higher Learning Institution

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Abstract

The urgent implementation of solid waste management is crucial to be initiated corresponding to the current degree of environmental problems. Recycling practices is one of the well-recognized waste reduction strategies that can be employed at individual and institutional levels such as university to achieve a sustainable campus environment. The present study aims to investigate current waste management practices of University Teknologi MARA (Pahang) students and examine the factors that may influence intention of the students to involve in recycling behavior. A total of 150 out of 234 questionnaires were usable for analysis using Statistical Package for Social Science (SPSS, Version 20.0). The results showed that the most recyclable items produced by the students were papers (46%) along with other types of recyclable wastes such as bottles (17.3%), plastics (14%), books (11.3%), cans (10.7%) and others (0.7%). The study also revealed that about 77 percent of the respondents threw out the generated recyclable materials directly into rubbish bins as there was either no availability or lacking of recycling facilities around the campus. Further findings suggest that, only subjective norms have significant positive influence towards intention to recycle among the students. Both attitudes and perceived behavioral control were not statistically significant to influence the students' intention to perform recycling activities. We conclude that (1) the recycling program should be seriously conducted given that high amount of recyclable wastes have been produced by the students; (2) management of the university is advisable to conduct awareness talks on the importance of proper waste management and install necessary equipment and facilities for the convenience of recycling tasks; (3) the change agent (the students) also needs to be educated on the baseline recycling information on what and how to recycle to ensure a success implementation of campus recycling program.

Keywords: Attitude, recycling, solid waste management, students

1.0 Introduction

The amount and types of solid waste have increased from year to year due to increase in waste produced in Malaysia (Zakaria and Awang, 2000). Federal department which is Environment and public health organization together with non-governmental organizations (NGOs) have been working together to tackle the solid waste problem. This is important if no action to be taken on systematic and effective waste management system, it will lead to serious environmental degradation problem. Environmental degradation comprises a large degree of subjectivity on the part of the agents involved or who own the resources.

Recycling was identified as one of activities which may overcome the challenges in waste management (Zakaria and Awang, 2000). To ensure the recycling activities become as norms of each citizens in country, the exposure and understanding of recycling activities must be inculcated from young ones. Thus, they will understand and appreciate the value of preserving the nature and reduction of waste. Therefore, it is important to target the study on students who are in the higher education institution as they will be the descendant and leader of future generation who supposed to care of the environmental welfares.

Based on adaption of theory of planned behavior (TPB) by Ajzen (1991) who suggested that the determinant of behavioral action can be well expected from an individual's intention, the main objective of the study is therefore to ascertain the association that may exist between attitude, subjective norms and perceived behavioral control to predict recycling intention among students at Universiti Teknologi Mara Pahang in Jengka campus.

2.0 Literature Review

Waste management or solid waste management is the control of waste generation, storage, collection, transfer and transport, processing and disposal of solid waste pertaining to public health, economies and financial engineering, administrative, legal and environmental purposes (Aziz, 2009). One of the activities on waste management is recycling.

Recycling is introduced as a way to overcomes challenges of waste management system. This is so true due to massive and complexity of waste produced beside to poor waste management system in Malaysia ((Zakaria and Awang, 2000). This activity becomes successful through their supports and active participation on recycling the waste (Akil, Johar, and Amir, 2011). Thus, it is high time the people to reset their mind and perception on recycling. In Malaysia, the massive and complexity of the waste produced increasing from year to year which eventually the government and local authorities may have difficulty in handling the waste due to lack of spaces and resources (Zakaria and Awang, 2000).

Dealing with the behavior towards recycling, Theory Planned Behavior (TPB) which introduced by Ajzen and Fishbein comes into place. Attitudes, subjective norms and perceived behavioral control were discussed in understanding the behavior of the individuals. Basically, attitudes refer to the feel which favors the individuals towards certain behaviours. Meanwhile, subjective norms the opinion of others or community on certain behaviours (Akil et al., 2011). Perceived behavioral control is the control over the behavior interest which is likely to be ((Tonglet, Phillips, and Read, 2004). Moreover Wan, Cheung, and Shen (2012) revealed that attitudes, subjective norms and perceived behavioral control were significantly correlated to the behavioral intention to recycle in Hong Kong. The study also found that a moral norm, awareness of consequences and convenience was significantly affecting the intention of people in Hong Kong to recycle their waste. The other study using Theory Planned Behavior was the study done by Tonglet et al. (2004) found that attitude is the main factors towards recycling intention. Further, the study also found that perceived control and situational factors have strong correlation to recycling attitudes.

According Aziz (2009), inconvenience of facilities for recycling one of the reason for the household did not participate to recycle the waste. Other measures which had significant predictors towards recycling intention are moral norms, awareness of consequences and convenience (Wan et al., 2012).

Based on the above literatures, this study will attempt to ascertain the association between attitude, subjective norms and perceived behavioral control on recycling intentions among students in university specifically in Universiti Teknologi MARA. This was suggested by Wan et al., (2012) to apply Theory Planned Behavior to higher education institutions towards recycling intention.

3.0 Research Methodology

The research was using a survey via questionnaire. The questionnaire was distributed and personally administered to assess the required data among students at Universiti Teknologi MARA Pahang in Jengka Campus. The population of the study was students who enrolled Bachelor programs in Universiti Teknologi MARA Pahang. At the point of study, there were 621 students in Universiti Teknologi MARA Pahang. The convenience sampling was carried out to 234 students with total 150 finally useable for analysis in this study.

For data collection, the instrument was divided into five sections. Section A represents on demographic profile of the respondents. Section B assessed the students' current recycling and waste practices in the campus. Section C, D,E and F measuring level of the students' attitude, subjective norms, perceived control and intention to recycle based on 5 – point Likert scales of the following: 1 – "Strongly Disagree", 2 – 'Disagree", 3 – "Moderate", 4 – "Agree" and 5 – "Strongly Agree".

The data collected was analyzed using Statistical Package for Social Science (SPSS, Version 20.0). Analysis of data was carried out using a descriptive statistic to compute frequency count, percentage and mean. Pearson correlation test was employed to determine the relationship between TPB's variables and student's intention to recycle. The instrument was developed based on reviewed literature and has passed the requirement of internal consistency based on Cronbach's alpha value above 8 for all testing variables. To interpret students' attitude, behavior index (positive/negative) were used. While binary partitions (high/low) were used to indicate level of subjective norms, perceived control and intention. Mean value of 3 and above for attitude indicates positive attitude and below were regarded as negative or reluctant towards recycling activities. On the other hand, mean value of 3 and above were referred as high and below 3 were regarded as low for subjective norms, perceived

control and intention to recycle.

4.0 Results

The sample comprised of 36 (24%) male and 114 (76%) female students enrolling to seven (7) bachelor programs in UiTM Jengka, Pahang. The data in Table 1 shows the list of recyclable wastes generated by the students. Paper represents 46% from the total waste generation followed by bottles 17% and plastics (14%). Based on Table 2, this study revealed a stunning result where the majority of the students (51.3%) at the time of study was conducted, made an economic-waste choice by throwing away all types of recyclable wastes into rubbish bins. About 26.7% of the students chose to separate and throw the wastes into recycle bins and only 22% of the students chose wisely to recycle or pass the wastes to recycle factory collectors.

Table 1: Types of recyclable wastes generated by the students

	N	%
Paper	69	46.0
Cans	16	10.7
Plastic	21	14.0
Books	17	11.3
Bottles	26	17.3
Others	1	0.7
Total	150	100.0

Table 2: Disposal alternatives of the recyclable wastes by the students

	N	%
Throw into rubbish	77	51.3
Separate and throw into recycle bin	40	26.7
Recycle or directly pass the recyclable waste to recycle factory collector	33	22.0
Total	150	100.0

Table 3 displays the mean results of all the variables in the study. Six items measuring attitude towards recycling activities have mean scores above 3 which indicating a relatively positive mindset towards recycling concept. Similarly, all items measuring subjective norms (4 items) and perceived control (12) has mean score of above 3. The former results suggest that the role of peers (friends, classmates), media networks and environmental group or society is somewhat triggering students' expectation to practice good manner by recycling the wastes that they have produced. While the latter results revealed that the students' capacity and capability to practice recycling in campus were high.

Table 3: Mean responses to items on attitude, subjective norms and perceived control

Variable	Mean
Attitude	4.5567
Subjective Norms	3.5650
Perceived Control	3.3978

Pearson correlation test was calculated to find if there is significant correlation between the attitude, subjective norms and perceived control towards students' intention to practice recycling in campus. Table 4 summarized the findings where we conclude that only subjective norms variable has significant positive correlation towards intention to recycle.

Table 4: Pearson correlation test

Hypothesis	Coefficient, r	Sig. Value
Attitudes relate positively to recycling intention	0.072	0.610
Subjective norms relates positively to recycling intention	0.467	0.000**
Perceived control relates positively to recycling intention	0.010	0.926

** Correlation is significant at the 0.05 level (2 tailed).

5.0 Discussion and Conclusion

The study is using Theory Planned Behavior which is adapted by Azjen (1991) in determining behavior on certain events. The theory main elements are attitudes, subjective norms and perceived behavioral control. Attitude is referring to how people feel or react towards certain behavior for this study is how students react towards intention to recycle. Based on the result, the students have positive intention to recycle. This may be due to their awareness and knowledge on the recycling practice in preserving the environment. Next, subjective norm is expectation of others if someone's behavior of not doing the same behavior. Meaning, the expectation of peers, social media and society in student's recycling intention. Interestingly, the result indicated that peers, media social and society role may elicit students' intention to recycle. The students may feel uncomfortable if they are not practicing recycling while others are looking forward for recycling. Next, the perceived behavioral control is someone's perception on the difficulties towards certain behavior. In other word, the students will have greater intention if recycling can be done effortlessly. From the result, the students have capability and capacity to recycle if the facilities provided in the campus or nearby. Impliedly, the intention of students on recycling is greater if the necessary facilities are provided conveniently. Undeniably, Aziz et.al (2009) identified that inconvenience of recycling facilities may fade away the attitudes of recycling on people.

In meeting the objective of the study, the correlation of three elements of TPB is carried out and the result revealed that all three elements have positive correlation towards recycling intention where subjective norm has very significant positive correlation. Clearly, the result showed that what others may think on certain behavior may trigger recycling intention among students. This result is aligned with the study done by Tonglet et.al (2004) and Wan et.al (2012) that elements of TPB were significant towards recycling intention

The findings of this study revealed that there is urgent need for recycling campaign to be initiated in the campus as the amount of recyclable waste items is plenty enough to produce economic and environmental defects (Zakaria and Awang, 2000) . Alshuwaikhat and Abubakar (2008) has mentioned that, due the complexity of university operation and its concentrated population, the university has no choice but to put a considerable effort on preserving campus environment via systematic and efficient strategies to achieve a sustainability campus for its community. It is evident that, the waste management of recyclable items seemed not properly handled as the facilities and recycling resources are still lacking or not available for some places of the campus. This becomes a great challenge to attain objective for cleaner environment through recycling when the establishment of collection points and transportations are not fully ready (Moh and Abd Manaf, 2014).

This study has its limitations. The sample of the study is confined to students in UiTM Pahang in Jengka campus and cannot be generalized to whole populations of students in all higher education institutions in Malaysia. Further, since this study is a cross sectional study, thus, the result may only applicable at the point of the study undertaken. It is suggested that this area may be expanded further in the future by having greater sample size of students in higher education institutions in Malaysia.

6.0 References

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