AWARENESS AND ATTITUDE OF STUDENTS OF HIGHER EDUCATION INSTITUTION (HEI) IN THE KLANG VALLEY TOWARD WASTE MANAGEMENT

BY

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ABSTRACT

The research aimed to assess the level of environmental awareness and attitude of students from higher education institutions with regard to waste management. The three main problems that highlights this research are the high generation of waste, lack of environmental awareness and low environmental action as well as role of HEI in translating environmental knowledge into awareness and attitude. The study (i) assessed level of environmental awareness and attitude toward waste management among students in higher education institution (IIUM, UTMKL, UPM, UM, UniKLBMI), (ii) compares the level of environmental awareness and environmental attitudes of students between the five higher education institutions, (iii) analyzes the issues and problems related to waste management practices in the study area and finally (iv) recommends strategies and plan for effective waste management practices and attitude to be applied by residents of higher education institution. The data for this research was collected using a structured questionnaire survey, which were distributed to 200 respondents in each of the selected institutions which totals up to 1000 respondents. The study found that respondents from all five institutions had scored higher in level of awareness when compared to level of attitude. Respondents had also assessed themselves to be environmentally aware in their daily actions. Furthermore, the result shows that television advertisement and internet has become the most preferred source of information on waste management as well as environmental issues. The recommendation of the study is to provide a shift in source of information on waste management. The research also recommends that opportunities and incentives for pro-environmental behaviours to be offered in the form of more facilities as well as benefits.

خلاصة البحث

يهدف البحث إلى تقييم مستوى الوعي البيئي وموقف الطلاب من مؤسسات التعليم العالي فيما يتعلق بإدارة النفايات. والمشاكل الرئيسية الثلاثة التي تسلط الضوء عليها في هذا البحث هي التوليد العالي للنفايات، والافتقار إلى الوعي البيئي وتدني الإجراءات البيئية، فضلا عن دور المؤسسات التعليمية العالية (HEI)في ترجمة المعارف البيئة إلى وعي وموقف. كانت الدراسة ' 1 ' تقيّم مستوى الوعي البيئي والموقف تجاه إداره النفايات بين الطلاب في مؤسسة التعليم العالي IIUM ، UTMKL، UPM، UM، UniKLBMI، وأم الثانية ' 2 ' فتقارن مستوى الوعي البيئي والمواقف البيئية للطلاب بين مؤسسات التعليم العالي الخمسة ، والثالثة ' 3 ' تحلل القضايا والمشاكل المتعلقة بممارسات إداره النفايات في مجال الدراسة ، وأخيرا، توصي الرابعة ' 4 ' باستراتيجيات وخطط للممارسات الفعالة لإداره النفايات والمواقف التي تطبق من قبل المقيمين في مؤسسة التعليم العالي. وجمعت البيانات المتعلقة بهذا البحث باستخدام استبيان منظم وزع على 200 عينة في كل من المؤسسات المختارة التي يصل مجموعها إلى 1000 شخص. ووجدت الدراسة أن المجيبين من جميع المؤسسات الخمس سجلوا مستوى أعلى من الوعي عند مقارنتهم بمستوى الموقف. كما قيّم المجيبون أنفسهم بأنهم مدركون بيئيا في إجراءاتهم اليومية. وعلاوة على ذلك، تبيّن النتيجة أن الإعلان التليفزيوني والإنترنت أصبحا المصدر الأكثر تفضيلا للمعلومات المتعلقة بإدارة النفايات فضلا عن القضايا البيئية. والتوصية الواردة في الدراسة هي توفير تحوّل في مصدر المعلومات المتعلقة بإدارة النفايات. ويوصي البحث أيضا بأن تتاح الفرص والحوافز للسلوك المؤيد للبيئة في شكل مزيد من المرافق والفوائد.

APPROVAL PAGE

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LIST OF ABBREVIATION

9MP	Ninth Malaysian Plan
ABC	Action Plan for a Beautiful and Clean Malaysia
APO	Asian Productive Organization
EMS	Environmental Management System
ESD	Education for Sustainable Development
HEI	Higher Education Institution
DOE	Department of Environment
HEI	Higher education institution
IIUM	International Islamic University Malaysia
IPCC	Intergovernmental Panel on Climate Change
KPTM	Kementerian Pelajaran Tinggi Malaysia
LPU	Lyceum of the Philippines University
MARA	Majlis Amanah Rakyat
MHEB	Malaysian Higher Education Blueprint
MHLG	Ministry of Housing and Local Government
MOE	Ministry of Education
MOH	Ministry of Health
MOHE	Ministry of Higher Education
MRRD	Ministry of Rural and Regional Development
MSW	Municipal Solid Waste
MWM	Master Plan on National Waste Minimization
NHEAP	National Higher Education Plan
NSPSWM	National Strategic Plan for Solid Waste Management
NSWMP	National Solid Waste Management Policy
OECD	Organization for Economic Cooperation and Development
PNM	Perpustakaan Negara Malaysia
RII	Relative Importance Index
SDU	Suleyman Demirel University
UCSF	University College Sabah Foundation
UKM	Universiti Kebangsaan Malaysia

UM	Universiti Malaya
UNCED	United Nations Conference on Environment and Development
UNDP	United Nation Development Report
UNEP	United Nation Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UniKLBMI	University Kuala Lumpur British Malaysian Institute
UPM	Universiti Putra Malaysia
UTMKL	Universiti Teknologi Kuala Lumpur

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Higher education institution (HEI) has become more available to the populace than ever. As of 2017, there were approximately 672,000 students) enrolled in 585 higher education institution in Malaysia (Hirschmann, 2019. HEIs have the potential to give an impact on the environment, as they have a wide campus area with large population, and also carry out complex operations. With the population range of 1,000 to 20,000, the level of management for solid waste could be on par with a large town, needing a comprehensive management plan and practices.

Solid wastes are harmful to the general populace by various means of pollution. Uncontrolled dumping of solid waste contaminates water supplies and soil through untreated leachates. Solid waste also creates stagnant water in urban areas by clogging the drainages. Open burning of solid waste also adds to air pollution significantly. The decomposition of these solid waste also generates methane, a potent greenhouse gas. Improper management of solid waste also act as a vector of diseases, attracting pest such as rodents (Alam et al., 2013). As such, proper disposal and management system for solid waste are vital for the health of the population. Environmental education can help create positive awareness and attitudes about environmental issues, whilst curbing the negative role of human actions on the environment. As HEIs is the last stage of formal education system, it is the most important place for good solid waste management practices to be practiced by its

populace as it could represents the effectiveness of our system in educating the young on the importance of the environment.

1.2 PROBLEM STATEMENT

The research would focus on three problems, high generation of waste, gap between level of awareness and attitude and the roles of HEIs in elevating awareness and attitude.

High level of Waste Generation

The generation of Municipal Solid Waste (MSW) is increasing at a staggering amount from about 17,000 metric ton (MT) per day in 2001 to 23,000 MT per day in 2010 (National Strategic Plan on Solid Waste Management, 2005). The major component of MSW is food waste followed by papers and plastics waste. In Kuala Lumpur alone, the monthly generation of food waste was about 37,956.87 tonnes in January 2011 (Alam Flora Sdn Bhd, 2011) and it is estimated to show annual increment of 9% (Solid Waste Management Disposal Sdn. Bhd, 2010). Local government normally spend 40 – 60% of their annual expenditure in waste collection and disposal while federal government is expected to spend about RM 2 billion per annum for waste management in Malaysia once the Solid Waste and Public Cleansing Management Act 2007 that introduces institutionalization, federalization and privatization of solid waste management.

In the case of Kuala Lumpur, as in many other cities, solid waste is not segregated before collection and processing. In the case of HEI, waste is not segregated as well. Municipalities does not always provide waste collection service to the HEI. It falls under the responsibility of each institution to use the service of

private contractor. In this regard, reduction of waste generation could lead to two main benefits; financial cost in association to waste collection by private waste company could be reduced and the life span of sanitary landfills could be. Other benefits would also include a reduction in the amount of waste produced by HEI which would have environmental and social benefits (Vega, et al., 2008).

Solid waste management is one of the most critical issues faced by Malaysia due to the rapid development of the country in population and economic, with a tremendous increase of 19,000 tonnes of waste in 2018 compared to 2005, for Kuala Lumpur alone. A growth in population directly affects the rate of enrollment in HEIs. With the increasing number of students, the amount of waste produced every single day also shows the growing patterns. The generation of waste typically originates from the residential colleges, cafeterias, faculties and administration blocks. This high level of waste generation cannot continue throughout generations as it may cause enough stress to collapse our environment.

Lack of Environmental Awareness and Low Environmental Action

Lack of environmental awareness towards environmental problems such as urbanization, industrialization, deforestation, climate change and the loss of biodiversity is detrimental as it impedes the works of policy makers in combating environmental stress (Keles, 2012). The concept of quality of life has always been linked to environmental issues. As a result, quality of life has steadily been reduced as environmental stress worsen over the years. As such, it is of a great concern that the level of environmental awareness is to be raised, in order not to squander the efforts of policy makers in planning and management of our living environment (Marans, 2012). The environmental issues are important because the absence of their

solutions is more horrible. In the case where environmental issues are not solved or not taken care of, the coming generations may find earth to be unlivable.

Although there are many campaigns being held occasionally regarding to solid waste management (recycling, bring your-own container), it is moderately practiced in higher education institution (Hassan, 2013). Without participation, environmental initiatives by the government or administrators will not be effective (Eden, 1996). Level of environmental awareness is hypothesized to play a role in affecting the participation level for these campaigns and the level of environmental awareness in Malaysia is still visibly lacking, especially when individual effort is needed (Chin, 2019). Sustainable practices such as recycling and waste separation is almost neglected in most households. At the bottom level, the people's behavior is regarded as a major barrier to the successful implementation of solid waste management (Evison and Read, 2001). Moreover, there are increasing needs for such public participation due to the recent change in sources of environmental problems.

Today, the sources of pollution have shifted from production to consumption processes. The Human Development Report of 1998 (UNDP) affirms this trend and states that growth in consumption and unbalanced consumption patterns are placing unprecedented pressure on the environment. In this light, the acceptance of pro-environmental behavior by general public, that is, to adopt sustainable life style, is an urgent issue in protecting environment.

Role of HEI in translating Environmental Awareness and Attitude

Environmental knowledge does not always correlate to environmental awareness and attitude. In the public realm, there seems to be a gap between awareness and attitude

which are most affected by economic and convenience factor (Neo, 2016). It appeared that adoption of a type of practice or behavior would depend on whether there is direct financial benefit, convenience or habit (Said, 2012). In term of students enrolled in HEIs, several studies found a disconnect between student's environmental knowledge and awareness which translate into low level of environmental behavior or attitude (Dicle, 2010, Jusoh, 2018). Educators was also found to have a fair environmental knowledge which are not translated into good environmental responsibility and behavior (Said, 2003). Studies conducted globally also yield similar result where there exists a gap between knowledge, awareness and attitude (Dicle, 2010). Even with the provision of environmental related courses, students enrolled in HEIs fails to translate environmental knowledge into awareness and attitude (Dicle, 2010).

Since HEI can be particularly well suited for the realization of sustainable development, it should provide a safe environment, ecological balance, and inter-generational equity that is compatible to the development, as it is a place to create professions and professionals (Razman, 2017).

1.3 RESEARCH QUESTIONS

The study would also be conducted in order to answer the following questions regarding to awareness and attitude of students in higher education institution towards waste management.

1. What is the level of environmental awareness among students of HEIs?
2. Are there differences in level of awareness and attitude of students in the selected HEIs?

3. What are the issues and problems related to solid waste management practices in HEIs?

4. What are the appropriate strategies to encourage good awareness and attitude towards waste management practices in higher leaning institution?

1.4 RESEARCH OBJECTIVES

The study aims to evaluate level of awareness and attitude of residents in higher education institution towards waste management. By comparing the results from several higher education institution, an analysis could be made based on the result in order to find the better solution for encouraging good solid waste management practices in higher education institution. In achieving this goal, a few objectives have been outlined, which includes:

a. To assess level of environmental awareness and attitude toward waste management among students in higher education institution (IIUM, UTMKL, UPM, UM, UniKLBMI)

b. To compare the level of environmental awareness and environmental attitudes of students between the five higher education institutions.

c. To analyze the issues and problems related to waste management practices in the study area.

d. To recommend strategies and plan for effective waste management practices and attitude to be applied by residents of higher education institution.

1.5 SIGNIFICANCE OF STUDY

Solid waste management has become a major development challenge towards the country. As educational institutions have the moral and ethical obligation to act

responsibly towards the environment and society, HEI are expected to lead the efforts towards responsible waste management. The study therefore intends to explore the issues, identify the awareness among students and recommend appropriate strategies and provide recommendation to encourage good solid waste management practices in higher education institutions.

HEIs also aims to produce responsible and competent individuals with knowledge, skills and values who will contribute to the moving world (Clugston, 2004). Therefore, HEIs has an important role in turning society toward sustainability. As such, the importance of scope and targets of environmental education in higher education must be well recognized (Corcoran and Wals, 2004).

1.6 SCOPE OF STUDY

The study would be conducted in 5 higher education institutions, International Islamic University Malaysia (IIUM), Universiti Teknologi Malaysia Kuala Lumpur (UTMKL), Universiti Malaya (UM), Universiti Putra Malaysia (UPM) and Universiti Kuala Lumpur British Malaysian Institute (UniKLBMI). Due to study limitation, the selection of these institution was based on their locations, which is within the area of Klang Valley. These institutions were also selected based on the offered courses, study outlines, university requirement subjects and level of studies, which permits deeper comparison of solid waste management practices between these higher education institutions. The details of the characteristic of each of these institutions will be discussed in Chapter 3.

The scope of study of the research is limited to the following:

1) Assessing the level of environmental awareness of students of higher education institution.

Structured questionnaire survey was distributed to students from IIUM, UTMKL, UPM, UM & UniKLBMI, with the total respondent of 1000. The data from each of the institutions would then be compared to assess the level of environmental awareness for each institution. The result of this analysis was compared with case studies done globally to identify the current level of environmental awareness among our student when compared to other countries.

2) Assessing the environmental attitude or behavior of students of higher education institutions towards waste management.

Similarly, data were collected using the same structured questionnaire survey. The data from each of the institutions would then be compared to assess solid waste management practice of students in each institution. From this, it could be determined which institutions have the better attitude among its students and the cause for this could be extracted and applied in other higher education institutions.

3) Identifying issues and problems related to solid waste management practices in higher education institutions

Reviews from the students regarding the existing waste management system used in their institutions would be collected using the questionnaire survey. Any problems from the department's or contractor's side would also be highlighted, if available. These two data would then be tallied up to enable better recommendations and suggestion to be made.

1.7 LIMITATION OF STUDY

The number of respondents is limited due to the resource constraint in terms of time and money constraints. Hence, there will be a limitation on the number of higher education institutions, data collection period, and sample size which affect data precision and the reliability of the research topic.

The characteristic of respondent would be broad as the study utilized convenient-sampling method for data collection. Furthermore, the number of post-graduate respondents is expected to be lower than undergraduate students due to the nature of post-graduate study schedule, of which is available in part-time mode that diminish the number of post-graduate student available on each campus.

Lastly, some sensitive data regarding available solid waste management system may not be collected from some of the institution. The level of details for solid waste management system in each of the institutions may not be constant due to differences in policy regarding data and information in each of the institutions.

1.8 STUDY GAP

Numerous studies have been conducted around the world to explore the level of environmental awareness and attitude of students in HEI (Starovoytova, 2018). In the context of Malaysia, several studies with similar goal have been conducted by Mojilis (2018) in University College Sabah Foundation (UCSF), in Universiti Kebangsaan Malaysia by Hassan (2010), in International Islamic University Malaysia by Kijas (2013) and in several selected HEI in Malaysia by Jusoh (2018).

From the review of previous studies by the listed authors, there seems to be unexplored area to relationship between environmental awareness, attitude and solid

waste management at a HEI-context. A few of HEI selected as the study area also had no previous study in evaluating the level of awareness and attitude of students in those HEI, namely UTM, UPM and UniKLBMI. With regard to this, the study tries to close the gap between environmental awareness, attitude and solid waste management as well as evaluating the level of environmental awareness and attitude in UTM, UPM and UniKLBMI.

1.9 RESEARCH STRUCTURE

This paper is made up of 5 chapters:

Chapter 1: The first chapter is made up of introduction to the research, background of the research, problem statements in respect to the research, research questions, goal, aim, objectives, and significances of the study and lastly is the scope and limitation of the study. Chapter one is crucial in setting up the base for the research paper.

Chapter 2: This chapter will provide extended background for the study. Literature reviews on the research topic will be conducted to provide basic information for overall understanding of the research itself. This chapter will explain further on the understanding of the subject matter including definition of terminologies and component of the study itself, based on the references from relevant previous studies. The literature review gives an in-depth understanding of the subject matters and assists in the study process.

Chapter 3: The focus is on the methodology of the research. In this chapter, the method of data collection is explained thoroughly, which includes sample size,