KNOWLEDGE AND ATTITUDE AMONG NIGHT MARKET FOOD OPERATORS TOWARD FOOD WASTE MANAGEMENT PRACTICES: A CONCEPTUAL PAPER

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ABSTRACT

As a developing country, Malaysia is facing the challenge of economic growth and rapid expansion; and waste generation is one of the drawbacks of it. Plenty of tons of food waste is found in the landfill of Malaysia. The Solid Waste Management and Public Cleansing Corporation (SWCorp) stated about 40 percent of solid waste that is being produced daily constitutes food waste. It is found that one of the highest contributors to food waste in Malaysia is night market. In line with the above notion, it is proposed that knowledge and attitude has a positive relationship toward proper waste management practices among night market food operators. Therefore, this paper is intended to conceptualize the knowledge and attitude among night market food operators toward food waste management practices.

Keywords: KAP, solid waste, waste management, night market, food operators

INTRODUCTION

An increase in the population numbers and rapid industrialization growth has caused continuing global problems including improper waste disposal. The main challenge of waste management systems is found to be ineffective waste collection and disposal strategies among food operators (Reyes & Furto, 2013). This important element needs to be considered particularly for those involved in foodservice sectors since improper waste management will affect health, environment as well as an economic problem. Consequently, these will indirectly give a bad impact on the community (Shewasinad, Daniel, Abebe, Tsegaye, & Abera, 2017). Waste which includes solid waste may be generated from the restaurant, household, as well as night market. If the food waste is improperly disposed of, it will be a favorable breeding place for insects and sources of food for pests which may increase the health problems.

Nevertheless, the proper waste management system is often neglected at the individual level (Licy, Vivek, Saritha, Anies, & Josphina, 2013). Although many food operators are aware of the impacts of mismanaged waste on the environment and health, yet the bad attitude and inadequate environmental knowledge lead to poor practices towards a proper waste management system. The need for a proper waste management system to reduce environmental pollution and decrease the number of wastes in a food establishment is a crucial issue need to

be addressed. The proper waste management system only can be successfully implemented if elements of knowledge, attitude, and practices among food operators were incorporated throughout food production.

Poor knowledge and awareness regarding solid waste management lead to the continuation of the waste management problem (Mukama et al., 2016). The knowledge of proper management of waste material can be gained through education and training since both are the important elements that can increase the awareness and knowledge towards a proper waste management system (Asmawati, Nor Ba'yah, & Fatimah, 2011).

Aspects such as awareness, attitudes, and behaviors of people in the community are important elements of the proper management of waste (Adeolu, Enesi, & Adeolu, 2014). The development of an attitude that helps in solving the problem regarding environmental issues is crucial among individuals. Attitudes of food operators toward the effectiveness of waste management reported being related to the level of knowledge (Adeolu et al., 2014). This is because, without attitude, food operators cannot practice effective waste management systems at their establishment. Attitudes of people do not change or increase to desirable attitudes if the education is failing to strengthen the knowledge level. It is important to ensure that people, particularly food operators are not only aware but must understand the importance of proper waste management that motivates them to practice it. Understanding the problem that may arise due to the improper waste management system, will assist in more awareness of waste management issues. Attitudes that are based on knowledge and awareness would last long where good attitudes will affect the improvement in waste management practice (Rahmaddin, Hidayat, Yanuwiadi, & Suyadi, 2015).

The practice is an action taken by people parallel with the increase of knowledge and attitudes. Therefore, the practice of waste management can be improved with improvement in the knowledge and attitude regards to proper waste management. Ample knowledge of the negative impact of poor waste disposal can encourage people to apply the positive waste management practice which beneficial for environmental and human health (Audu, 2013). Thus, it can be suggested that knowledge, attitude, and practices may be the important attribute's value to study that may affect proper waste management among food operators.

Responding with the above ideas and arguments, it can be assumed that a very few of the general public can be expected to have a deep understanding of scientific knowledge on environment complexities, specifically connecting them to environmental issues. However, for people to exhibit pro-environmental practices, which include effective waste management practices; they require some extent of knowledge and possess the right attitude (Bashir, Majid, Alden, Hussin, & Zahari, 2018).

LITERATURE REVIEW

Night market

Every state in Malaysia has its own signature dishes which can be found easily in the night market. The Malaysian night market is based on a concept of open-air shopping where street vendors take over a designated street to set up stalls. Next, rows of stalls and carts are lined up, brightly lit by halogen lamps and fluorescent to create a carnival-like atmosphere (Iqbal, Karsono, Atthaillah & Lisa, 2017). The night market usually starts as early as 5.00 P.M. and continues up until 11.00 P.M. The street is closed to traffic, allowing only pedestrians.

The people in Malaysia have relied on the night market for many decades for their groceries and daily household needs. Moreover, according to Iqbal et al., (2017), the night market mostly benefits especially from young couples who work long hours and do not have the time to visit supermarkets (Iqbal et al., 2017). Despite the mushrooming of shopping outlets and malls, the night market remains popular and necessary for Malaysian people. Most of the food operators can be seen selling a variety of goods ranging from fresh produce and dry goods to cooked food, cakes, cookies, and other food products. Consequently, according to Hayati Ismail (director of the Food Aid Foundation); food waste from the night market is the second-largest contributor to food waste after household (Naidu, 2017).

Practices

Practices can be described as an action to do something continually in order to become better at it, and action to do something regularly as a common routine in human life. Business Dictionary (2019) describes that practice as a process, procedure, method, or rule used in a certain profession or field and a set of these regarded as standard.

Practices in Food Waste Management

The proper waste management system is the process of collecting, transporting, disposing, managing, monitoring of waste (Adogu, Uwakwe, Egenti, Okwuoha & Nkwocha, 2015), or utilization of waste in a sanitary, aesthetically, acceptable and economic manner (Uchegbu, 2002), which mainly to provide a healthy environment for human. The need for a proper waste management system to reduce environmental pollution and decrease the number of wastes in a food establishment is a crucial issue need to be addressed. The proper waste management system only can be successfully implemented if elements of knowledge, attitude, and practices among food operators were incorporated throughout food production.

The knowledge level towards a proper waste management system includes familiarity with what is waste management system, how waste management can boast the hygienic and quality of food and understanding of its impact on consumer safety and health. The consequences of ineffective and effective waste management towards human and environmental health are different where the ineffectiveness will lead to harm, while effective management will give benefits to both human and environmental health (Adogu et al., 2015). Poor knowledge and awareness regarding solid waste management lead to the continuation of the waste management problem (Mukama et al., 2016). This is because, without knowledge on proper management of waste, peoples are unethically disposed of the waste material into the river or drain that give a negative impact on health. The knowledge of proper management of waste material can be gained through education and training since both are the important elements that can increase the awareness and knowledge towards a proper waste management system (Asmawati et al., 2011).

The practice is an action taken by people parallel with the increase of knowledge and attitudes. Therefore, the practice of waste management can be improved with improvement in the knowledge and attitude regarding proper waste management. Ample knowledge of the negative impact of poor refuses disposal can encourage people to apply the positive waste management practice which beneficial for environmental and human health (Audu, 2013). The knowledge of food operators on the need for proper waste disposal is one of the examples that show the relation between knowledge and practice. Usually, the experienced food operators know that they only can dispose of waste at the dumping place provided by the government. Thus, it can

be suggested that knowledge, attitude, and practices may be the value of the important attribute to study that may affect proper waste management among food operators.

Knowledge

Knowledge is an understanding of information or fact about a subject that has obtained from study or any sources such as information from a website or newspaper. Furthermore, knowledge is defined as the capacity to obtain useful information and it will be further retained in the human mind. Ibrahim (1995) stated that it is also a mixture of comprehension, discernment, experience, and skill. It is a complicated construction characterized by the structure and the content of the information stored in the memory (Brucks, 1986).

Knowledge of waste

Many people acknowledge well about waste, however, there is very limited awareness about it among the individual including food operators. Because of that, there is a high percentage of people are not aware of how much food they discard off (Exodus Market Research, 2007). Poor food preparation techniques, portion planning and knowledge on how to use leftovers can also contribute to food waste at the consumer level. People have at least some knowledge on how to manage food in their households, but they often do not act in line with their knowledge. Food waste behaviors are directly related to planning and shopping routines, having or lacking an overview of stocks, having or lacking knowledge about whether food can still be used and situational influences such as specific purchase or consumption contexts.

Responding to the above matters on food waste, the Malaysian government and many NGOs have worked continuously in implanting environmental knowledge which includes waste management towards people with several strategies, frameworks, and plans. These can be seen in multiple initiatives such as Action Plan for a Beautiful and Clean (ABC) Malaysia, The Solid Waste Management Policy, and 3R Program (Reduce, Reuse, Recycle) (Manaf, Samah, & Zukki, 2009). Even with all the efforts and campaigns being made, surprisingly, the number of food waste is still escalating from year to year. Besides, the underpinning relationship of knowledge on waste management towards its implementation remains poorly understood in the Malaysian context.

Furthermore, if the Malaysian community are still lack of knowledge about proper solid waste management and being ignorant about its effect, this will worsen the problem. Public support towards helping in alleviating the impacts of the problems particularly on waste management can only be possible if the public is knowledgeable about the problem. General knowledge about waste management is seen to have a significant correlation with the willingness to engage in waste management behavior (Mukherji, Sekiyama, Mino, & Chaturvedi, 2016). Furthermore, knowledge is an important predictor of behavior, as a lack of knowledge will lead to a decline in self-efficacy, and then lead to the feeling that the individual cannot participate because they lack the knowledge required to take part.

Therefore, based on the several works of literature mentioned above regarding knowledge and waste management, the following hypothesis has been developed:

H1: There is a positive relationship between the knowledge among night market food operators toward food waste management practices.

Attitudes

According to Hogg and Vaughan (2005), an attitude is a relatively continuing association of beliefs, feelings, and behavioral tendencies towards socially significant groups, objects, events or symbols. Attitudes also can be described as a feeling about something and a way of behaving toward something. Furthermore, attitudes could be described as positive or negative, and good or bad behavior (Eneji, Eneji, Ngoka, & Abang, 2017).

Attitude toward waste

The theory of Planned Behaviour by Ajzen (1991) assumes that attitudes have a causal impact on behaviors through the mediation of behavioral intention. This intention is determined by attitudes towards the behavior, subjective norms, and perceived behavioral control (Mannetti, Pierro, & Livi, 2004). As in food waste context, Marangon, Troiano, Tempesta, and Vecchiato (2014) claimed that people's attitudes and individual behavior may influence the amount of food waste.

Aligned with the above notion, attitudes are a general measure of the favorability of behavior for the individual. In this perspective, waste attitudes seem to be an aspect dominating food waste, as consumers who consider food waste as being a big problem tends towards lowering their waste. On the contrary, although young respondents perceived food waste as a problem in crucial need of a solution and seem like to have high priority, their consumption style still produces waste (Marangon et al., 2014).

Due to the complexity of behavior that may affect the amount and probability of food waste in the domestic, the anticipation of food waste does not constitute an easy task (Quested, Marsh, Stunell & Parry, 2013).

Hence, based on the numerous literatures discussed above concerning attitude and waste management, the following hypothesis has been established:

H2: There is a positive relationship between the attitudes among night market food operators toward food waste management practices.

Proposed Research Framework
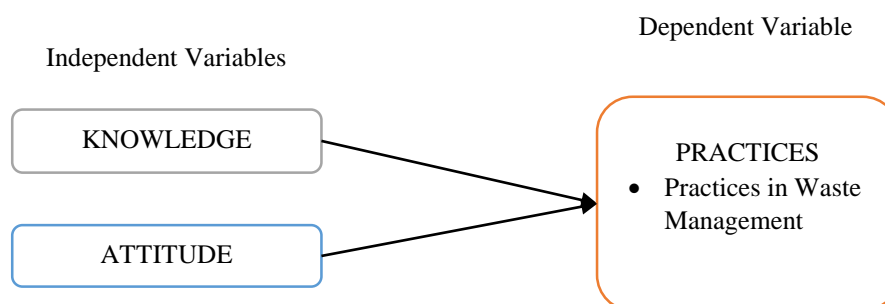
Adapted from Abdullah, Yusof, Gani, Mohammad & Ishak (2018)

Figure 1: A proposed research framework for the study of knowledge and attitude among night market food operators toward food waste management practices.

3. METHODOLOGY

3.1 Proposed Research Design

The design is dependent upon the nature of the study. Since this study proposed to empirically investigate the relationship between knowledge and attitudes among night market food operator toward food waste management practices, a causal research design using a quantitative through cross-sectional approach will be used for data collection as it is able to explain the relevant attributes (Sekaran & Bougie, 2016). In the context of this study, food operators from the night market will be chosen as a sample and the study setting will be in the non-contrived setting as it is dealing with the psychological changes.

3.2 Target for Unit of Analysis

In this study, the food operator from the night market will be used as a unit of analysis. This is because according to Hayati Ismail (director of the Food Aid Foundation); food waste from the night market is the second-largest contributor to food waste after household (Naidu, 2017). Additionally, the researchers will choose night market as the study setting instead of the household because the extent of the study on night market's food waste management is not known as any of the literature specifically looks at this issue to date. For this purpose, data will have to be collected from each individual and the unit of analysis is the individual food operator.

3.3 Target Population and Sample

Nonprobability sampling, specifically judgmental sampling will be chosen in this study as its sampling design. This is due to judgment sampling involves the choice of subjects who are in the best position to provide the information required (Sekaran & Bougie, 2016). In this study, night market food operators will be the sample to provide relevant information concerning the research subject on food waste. In terms of population size, the exact population size of night market food operators will be further determined. Therefore, some statistical experts suggest that a data range between 5 to 10 times the number of items used in the scale is accepted (Hair, Black, Anderson & Babin, 2018). In addition, for early estimation of sample size, it will be in the range between 30 to 500 respondents as Roscoe (1975) declared that sample size larger than 30 and smaller than 500 are appropriate for most of the studies. Thus, it is forecasted that the number of samples will be 10 times the number of items in the instrument as well as within the range of 30 to 500.

3.4 *Instrumentation*

This study will utilize quantitative methodology in its data collection. The survey questionnaire will be developed to gather the response from the respondents, and it will consist of several sections that will measure the constructs and dimensions used in the study. Most of the items in the survey questionnaire will be adapted from the previous research that dwells on the topic and a few modifications will be made to the questions to achieve the objective of this study. A self-administered structured questionnaire was used to gather the data on the level of knowledge, attitude, and practice of food handlers towards proper waste management. The questionnaire consisted of four distinct parts; demographic characteristics of the participants, food operators' knowledge in relation to proper waste management, food operators' attitude toward proper waste management and actual practices related to proper waste management among food operators. The 5-point Likert scale was used to interpret items in the questionnaire that indicate strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4) and strongly agree (5).

Considering the respondents' profile, questions that will be used should be simple and understandable with the least reading and writing. In other words, respondents should be able to read all items quickly and select an answer without any difficulties. In addition, all items will be formulated as clearly as possible with simple words and language to reduce any possible ambiguities and dual language (Malay and English) version of the questionnaire will be employed.

3.5 Plans for Data Collection

This study will employ a survey questionnaire that consists of several sections. The participants of this study comprise of the night market food operators around the Langkawi area. A self-administered survey questionnaire will be distributed among night market food operators. The researcher will firstly introduce himself and brief about the survey that will be conducted. It is estimated to distribute the questionnaire in the middle and at the end of their operation time. This is because it is easier for the food operators to relate the survey with food waste management since food waste usually occurs at the end of the operation. The food operators will be advised that their participation is voluntary, and their identity will be kept anonymous. Judgmental sampling will be used as a sampling technique. At the end of the data collection process, the survey questionnaire will be collected and sorted for further data analyses.

3.6 *Plans for Data Analysis*

Potential statistical software will be selected based on the appropriateness of the data that will be obtained during the data collection process. Nevertheless, the preliminary test like reliability (Cronbach Alpha) and exploratory factor analysis will be undertaken beforehand. The descriptive statistic will be used to analyze Section A (Demographic Profile), together with inferential statistics like Pearson Product Moment Correlation Coefficient and Multiple Regression to analyze Section B, C, (Independent Variables) and D (Dependent Variable). These statistical analyses will be employed whenever appropriate to suit the objectives, research questions, and hypotheses of the study.

4. CONCLUSION

Generally, when the issue of food waste management emerges, it will touch mainly on household food waste. To date, as far as this study is concerned, there were no studies that had viewed food waste management in relation to night market food operators. Therefore, it is hopeful that this conceptual paper will contribute to the body of knowledge in the waste management field, especially in assessing the knowledge and attitude among night market food operators toward food waste management practices.

Academic literature and research on the relationship between knowledge, attitudes, and practices among night market food operators toward waste management especially on night market settings are still limited. Therefore, the scarcity has directly created vast gaps for academicians to explore the issues in this night market setting. Furthermore, the significant contributions of this proposed study will, therefore, be accomplished by way of empirical testing of the hypotheses and confirming whether they are supported or rejected. In other words, the originality of this research will contribute to a new body of knowledge in Malaysia and extending the body of literature. This study will also most likely be leading the other potential researchers to look more in-depth or in broader scope related to the food waste studies.

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