FOOD WASTE AWARENESS AMONG HOSPITALITY STUDENTS IN UNIVERSITI MALAYSIA KELANTAN

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Abbreviations

SOFA	State of Food and Agriculture
SWCorp	Solid Waste Corporation of Malaysia
MSW	Municipal Solid Waste
IKIM	Institute of Islamic Understanding Malaysia

ABSTRACT

Food waste can be defined as food that is discarded from human intake, whether it is other food that has been preserved or left a reputation after being eaten. This food waste has also affected large environments such as odour pollution, air pollution and soil pollution that go through the process of transformation and decomposition. In addition, this food waste can be reused as compost, animal feed or raw materials such as biogas generation. In addition, this wastage occurs is due to a handful of working women who often commit wastage of expired food due to busy work and not having time to cook. Indirectly the disposal of expired food waste such as vegetables and fruits can be recycled as dishwashing products or organic flooring. In addition, to being chemical -free and environmentally friendly, it also saves on student expenses. Furthermore, there is food waste that occurs among hospitality students at the Universiti Malaysia Kelantan. As a result, the researcher has made a study on food waste among such students. Therefore, this study is to find out about the awareness of food waste among Hospitality Students at Universiti Malaysia Kelantan. Thus, there are 238 respondents who have followed this study who use social media methods such as Google Form, WhatsApp, E-mail, and others. Furthermore, this study can pay attention to the awareness of food waste among hospitality students at Universiti Malaysia Kelantan. The results of this study have shown that regarding the behaviour, knowledge and level of concern for food waste in hospitality students.

Keywords: food waste awareness, self-reported behaviour, knowledge, level of concern

ABSTRAK

Sisa makanan boleh didefinisikan sebagai makanan yang dibuang dari pengambilan manusia, sama ada makanan lain yang telah diawetkan atau meninggalkan reputasi setelah dimakan. Sisa makanan ini juga telah mempengaruhi persekitaran besar seperti pencemaran bau, pencemaran udara dan pencemaran tanah yang melalui proses transformasi dan penguraian. sebagai tambahan, sisa makanan ini dapat digunakan semula sebagai kompos, makanan haiwan atau bahan mentah seperti penjanaan biogas. selain itu, pembaziran ini berlaku adalah kerana segelintir wanita bekerja yang sering melakukan pembaziran makanan yang tidak habis kerana sibuk bekerja dan tidak sempat memasak. secara tidak langsung pembuangan sisa makanan yang telah habis digunakan seperti sayur-sayuran dan buah-buahan dapat di kitar semula sebagai produk pencuci pinggan atau lantai organik. Selain bebas dari bahan kimia dan mesra alam, ia juga menjimatkan perbelanjaan pelajar. di samping itu, terdapat pembaziran makanan yang berlaku di kalangan pelajar hospitaliti di universiti Malaysia Kelantan. Hasilnya, pengkaji telah membuat kajian mengenai sisa makanan di kalangan pelajar tersebut. Oleh itu, kajian ini adalah untuk mengetahui mengenai kesedaran tentang sisa makanan di kalangan pelajar hospitaliti di Universiti Malaysia Kelantan. Oleh itu, terdapat 238 responden yang telah mengikuti kajian ini yang menggunakan kaedah media sosial seperti Google Form, WhatsApp, E-mail, dan lain-lain. Selanjutnya, kajian ini dapat memberi perhatian kepada kesedaran tentang sisa makanan di kalangan pelajar hospitaliti di Universiti Malaysia Kelantan. Hasil kajian ini menunjukkan bahawa mengenai tingkah laku, pengetahuan dan tahap keprihatinan terhadap sisa makanan kepada pelajar hospitaliti.

Kata Kunci: kesedaran sisa makanan, tingkah laku, pengetahuan, tahap keprihatinan

CHAPTER 1

1.1 INTRODUCTION

This chapter will discuss about the background of study, problem statement, research objectives, research questions, significance of study, definition of terms and closed by the summary of the chapter.

1.2 BACKGROUND OF THE STUDY

Food waste refers to the loss of food from food supply chains due to spoilage and expiration, which is primarily caused by economic behaviour. It can happen at any point in the food supply chain, including during manufacturing, processing, distribution, retail, and consumption. According to the data, almost one-third of all food given for human consumption is lost or wasted each year, totalling to about 1.3 billion tons a year (Food Agriculture Organization, 2016). In high-income countries, food waste is most widespread at the point of sale, when food is still edible but is thrown away. In the middle and low-income countries, food loss happens in the early and middle stages of the food supply chain. At the market stage, there is a decrease in food waste. Overall, food waste is more common in developed countries than in developing countries. European and North American consumers are expected to waste 95-115 kg of food per year, compared to only 6-11 kg in Sub-Saharan Africa and South/Southeast Asia.

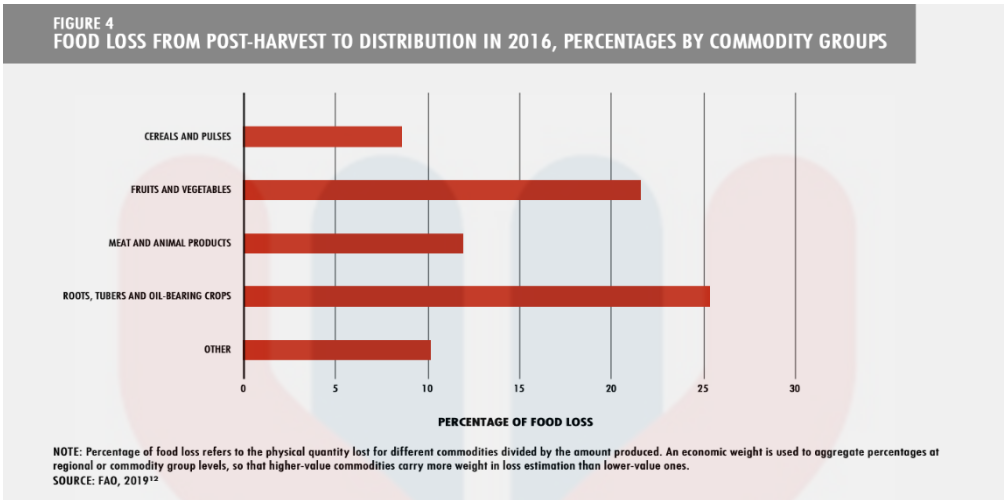

Figure 1.1: State of Food and Agriculture (SOFA) 2019

Table 1.1: Percentage of global food waste (2019)

Type of waste / Quantity (%)	Fruit & vegetables	Roots, Tubers & Oil-bearing Crops	Meats & Animal product
Global	21%	25%	12%

According to the Solid Waste Corporation of Malaysia (SWCorp), food waste in Malaysia reached 15,000 tonnes per day in 2015, with 3,000 tonnes of food that might still be used and should not be abandoned (Malaysia Kini, 2016). According to Moh and Abd Manaf (2014), the calculation overall waste composition in Malaysia is dominated by municipal solid waste (MSW) (64%), followed by industrial waste (25%), commercial waste (8%), and construction waste (3%). A number given by a study stated that Malaysian throw away up to 930 tonnes of unconsumed food daily (Jereme, 2014). This has become a concern issue to the country as affecting the economy growth. In Malaysia, the statistic shows loose about 28.5% are from harvested rice meanwhile 2-%-50% are from harvested fruits and vegetables during the food process management. According to a survey, a family of five spends an average of 210 USD (RM873) per month on food, with a quarter of that amount being thrown out during preparation and cooking.

According to the Solid Waste Corporation of Malaysia (SWCorp), food waste in Malaysia hit 15,000 tonnes per day in 2015, with 3,000 tonnes of food that could still be used and should not be discarded (Malaysia Kini, 2016). According to Moh and Abd Manaf (2014), municipal solid waste (MSW) accounts for 64% of the total waste composition in Malaysia, followed by industrial waste (25%), commercial waste (8%), and construction waste (3%). A number given by a study stated that Malaysian throw away up to 930 tonnes of unconsumed food daily (Jereme, 2014). This has become a concern issue to the country as affecting the economy growth. In Malaysia, the statistic shows loose about 28.5% are from harvested rice meanwhile 2-%-50% are from harvested fruits and vegetables during the food process management. A family of five spends an average of 210 USD (RM873) per month on food, with a quarter of that amount wasted during preparation and cooking, according to a poll.

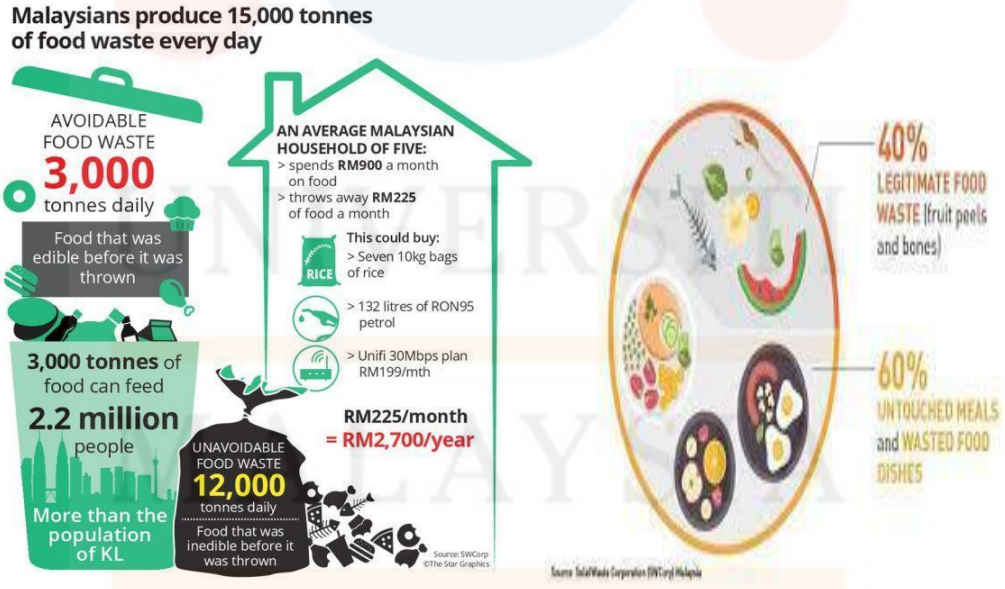

Figure 1.2: Solid Waste Management and Public Cleansing Corporation (SWCorp)

Table 1.2: Institute of Islamic Understanding Malaysia (IKIM) 2019

Source of food waste / Quantity (%)	Household	Restaurant	Food and beverage hotels	Wet Market
Malaysia	38%	23%	7%	24%

Food loss or waste is documented at several stages of the food chain, including levels of consumption, according to researchers (Martin-Rios et al., 2018). This study focuses more on various aspects of food waste in restaurants, households, food waste management, and food waste chain that led to an improvement in Malaysia. This waste not only causes losses but also causes the country's economy to decline due to the need to provide large food waste disposal areas to cover waste. Similarly, Papargyropoulou et al. (2019) argue that present literature favours wealthy countries, even though this issue is more prominent in developing economies. Food waste production occurs due to various factors that drive the wastage of food waste in this sector in Malaysia.

Behavioural analysis related to food waste is important to determine preventative measures. Behaviours related to high levels of food waste at previous household levels have been explored and summarized and the results show that the main predictions of food waste are the gender of individuals who do household chores especially women and, buying food without discounts, on the contrary, have no relationship arise between food products and discounts. The strong relationship that arises from the frequency of total expenses and food waste indicates that the more often food is purchased, the less food waste at home. “Bad planning” and “buying more than necessary” seem to be the cause of higher food waste in every country. Filimonau et al. (2019b) stated that relevant research has neglected aspects of food waste mitigation management.

1.3 PROBLEM STATEMENT

Attitude is the main cause of increasing food waste. The increase in food waste is not only an environmental problem but also related to economics, politics, technology, and morals. However, this problem is given less attention in this country compared to other environmental problems such as haze, landslides, deforestation, chemical pollution, and rivers. In other words, it is not popular and seasonal (Azrina Sobian, 2020).

People need to have food-management skills so that food waste and waste can be overcome. Ramadan celebrations this time are very different. As a result of the COVID-19 challenge, 'bazaars', and buffets. Ramadan was not allowed to operate. This forces the family or household to prepare their food or if you want something different, order food online. However, all of these conditions can affect the production of food waste. Most likely, the amount of food waste produced during Ramadan is not as much as the previous year. This is good news because food waste can be reduced (Berita Harian 2020).

The theory of planned behaviour (TPB) is a hypothesis that connects a person's beliefs with their actions. According to his thesis, an individual's intentions and behaviour are shaped by a combination of attitudes, subject norms, and perceived control of behaviour. Food waste has an economic, social, and economic impact at the consumer level, with the loss of added value, the opportunity cost of not feeding those who may be hungry, and the loss of natural and other resources such as manpower being the most significant resource. To prevent food waste, we must first comprehend all the variables that contribute to some people's wasteful behaviour. This Theory of Planned Behaviour (TPB) (Ajzen, 1970) has been widely applied in a variety of contexts and has produced many

predictions in terms of the strength of attitudes, norms, perceived control, and intent on a person's behaviour in order to raise community awareness of food waste.

TPB is also a popular theoretical lens for describing consumer behaviour. Karim Ghani et al. (2016) used TPB theory and additional situational construction elements to describe food waste separation behaviour at home. They were able to demonstrate that other characteristics not included in the study influenced an individual's intention to separate, explaining up to 13.7 percent of the differences in intention to separate. Russell et al. (2017) described food waste behaviour with TPB in a similar study, where they defined constructive intention as "intention to reduce food waste" and constructive behaviour as "food waste behaviour," with a negative association between the two. These attitudes with behaviours of most students have contributed to the increase in food wastage. This can be overcome through awareness education but efforts to change these attitudes and behaviours will take quite some time. However, efforts to educate and make the community aware, especially in terms of informal education in print and electronic media must be done continuously. At the same time, they also need to know the consequences of throwing away food on the environment, economy, and even social including themselves. With this, education based on religious values and ethics can be one of the channels to raise awareness among the youth to appreciate and avoid food waste. As a result, the goal of this study was to look at hospitality students' self-reported behaviours, awareness of food waste, and level of worry about food waste. This is because they are likely to be leaders in the food and beverage division in the future.

1.4 RESEARCH OBJECTIVES

Specifically, this research aims to achieve the following objectives:

1) To examine the relationship between self-reported behaviour and food waste awareness among hospitality students in Universiti Malaysia Kelantan.
2) To examine the relationship between knowledge of food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.
3) To examine the relationship between the level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

1.5 RESEARCH QUESTIONS

The research questions are:

1) What is the relationship between self-reported behaviour and food waste awareness among hospitality students in Universiti Malaysia Kelantan?
2) What is the relationship between knowledge of food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan?
3) What is the relationship between the level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan?

1.6 SCOPES OF STUDY

This study focuses on household food waste, which includes homemade drinks, food purchased from stores and food, and eaten indoors. The behaviour of hospitality students is more inclined in terms of garbage collection in Malaysia, different hospitality students have different consumer behaviour that are influenced by many factors. This study focuses on hospitality students in Universiti Malaysia Kelantan as respondents. The location to be selected for this study is at the Universiti of Malaysia Kelantan. This choice was made because we can identify a person's needs by understanding the factors. When compared to older groups, consumer behaviour is a major issue in all food waste disposal operations. This study intends to examine student awareness about food waste as well as identify factors that influence waste and food planning behaviour to prevent it. Poor pre-spending planning, store behaviour, such as impulsive shopping, the presence of youngsters requesting needless things, as well as layout, failure to inspect food inventories before purchase -split and provide a sufficient list of expenses and lead to food waste are all discussed in this study. Therefore, this study aims to the relationship between knowledge about food waste and the behaviour of hospitality students.

1.7 SIGNIFICANCE OF STUDY

Based on the end of this study, we hope to provide awareness about food waste among hospitality students. This study was also conducted to find out the awareness of food waste among hospitality students at Universiti Malaysia Kelantan in terms of an individual's behavioural perspective. This study will contribute to the increase in food waste awareness among hospitality students at Universiti Malaysia Kelantan. This study on food waste awareness gives an advantage to academics. In this study can also be used as a reference to guide hospitality students in terms of behaviour in their research. Further, in terms of friendliness, awareness of this food waste should be given exposure and emphasis to prevent this food waste from spreading in the country. In addition, society should also be given exposure to this aspect. This study can also help the community reduce garbage every day. Finally, this study will get help hospitality and community students avoid food wastage that occurs the daily basis. This study is also very important for all parties to raise awareness and educate the community about the importance of reducing food waste.

1.8 DEFINITION OF TERM

The terms included in this research study are self-reported behaviour, knowledge of food awareness, level of concern regarding food waste issues and hospitality students. Below is the definition of each of the terms.

1.8.1 Self-reported Behaviour

A self-report in psychology is any survey, measure, or test that relies on an individual's report of their features, indications, trusts, or attitudes. Self-reports are regularly used in psychological studies because they can give valuable information to the researcher.

1.8.2 Knowledge of Food Waste Awareness

Food handling is a crucial, easy, and cost-effective way to protect yourself, your family, and friends from harmful illnesses. It is easy for the young and elderly with a weakened immune system to become ill.

1.8.3 Level of Concern Regarding Food Waste Issue

The level of consumer concern towards food waste is to measure the level of consumer knowledge of food waste that occurs in Malaysia. Consumers should be concerned about this issue because this issue is important to keep the environment clean so that it is always controlled. Consumers should know the places to dispose of food waste and consumers should also buy food according to daily needs not according to lust.

1.8.4 Hospitality Students

Hospitality is all around us. As you begin to study in the field of hospitality management, you will begin to realize that wherever you go, you will find friendly people who work and help others to create impactful life experiences. Whether it's the smile and help of the front desk manager at the boutique hotel you just visited or just people who are late opening the door as they see your hands full of food, hospitality is everywhere.

1.9 SUMMARY

In this chapter, the researcher gives an overview of the study on the factors influencing hospitality students' behaviour and to assess hospitality student knowledge on food waste among hospitality students in Universiti Malaysia Kelantan. Meanwhile the researcher also describes the topics that form the background of the study, problem statement research questions, and research objectives. In the end the scope of the study also covers the importance of research, and the definition of terminology also includes.

CHAPTER 2

2.1 INTRODUCTION

This chapter will discuss the literature review of the food waste awareness among hospitality students in universiti Malaysia Kelantan. The independent variables (IV) and dependent variable (DV) in this study will be explained below. Besides that, the theories, relationship between the IV and DV, and the conceptual framework also required in this chapter to complete this study. This chapter ends with summary of the chapter.

2.2 UNDERLYING THEORY OF FOOD WASTE

Food waste happens regularly in almost every home, but it's a difficult subject because it's traditionally been analysis as a reflection of a person or group's lifestyle. At each phase of the procedure, disposal is almost assured to occur (Gilli, et. al., 2018). The largest share of waste, according to current literature, is an incredible percentage and rate at the consumer level (Heller & Keoleian, 2003; Stefan, et. al., 2013). The amount of food thrown away is due to several interconnected factors, all of which are of varied relevance in the home. Food processing training, as well as economic-cultural, social-economic, and demographic factors of eating behaviours, could have a significant impact on the amount of food thrown out.

Due to the large number of elements used to provide services and the frequent occurrences in places in our towns, one of the most obvious impacts of hotels on the environment is waste (Pirani & Arafat 2014; Singh et al. 2014). As a result, it has become the focus of national and international legislation aimed at reducing trash creation and its consequences (Rahman et al. 2012). Each year, hotels generate around 289,700 tonnes of garbage (WRAP 2014). According to Oleskow-szlapka et al. (2011), excessive consumption is responsible for nearly 75% of the garbage produced. Each year, hotels generate around 289,700 tonnes of garbage (WRAP 2014). According to Oleskow-szlapka et al. (2011), approximately 75% of this waste is generated because of excessive consumption. Hotels are attempting to limit the amount of garbage they produce because of research like this and governmental pressure, the key strategy used to attain this goal is environmental management (Mensah, 2006).

All stalls serving food and beverages for immediate consumption in an outside setting are included in the hospitality and food services sector (WRAP, 2013). This encompasses some important sub-domains, including restaurants, hotels, healthcare, education, and employee catering (WRAP, 2013). Restaurants usually include places that provide a variety of cuisines, such as Italy, China, India, or France, and fast-service places that provide meals or packages on various occasions including entertainment venues. The hotel offers a variety of housing alternatives, including luxury hotels, budget hotels, bed and breakfasts, and youth hostels. Hospitals, nursing homes, and day-care centres are all examples of healthcare. Preschools, elementary and secondary schools, as well as colleges and universities, are all part of education. Canteens and canteens located at work are examples of staff catering.

Hospitality is diversity. It is a dynamic and multi-faceted career that offers unlimited opportunities to aspiring young people to grow professionally and personally. Hospitality Management professionals working in many industries and sectors. The hotel is the epitome of the local economy, involving many interrelated departments, which are interdependent to make the whole functioning normally. There are customer service departments, visitor-centric departments, and backyard sales, marketing, and operations departments. The Food and Beverage Department, the division of rooms, concierge services, events, and conferences as well as the IT department that combine them all into one operation that launches the main one which is guest friendly. When this happens, the diversity of workplaces is not mentioned, from downtown business hotels, luxury boutique hotels to tropical resorts and extreme adventure hotels. There is something for everyone in the hospitality.

2.2.1 Self-reported Behaviour

In self-reported measures, respondents are asked to report directly on their behaviour, beliefs, attitudes, or intentions. Thru-stone scales, Likert scales, and semantic distinctions are among the most often used attitude assessments. Self-reported measures can be contrasted with other forms of measurements that do not rely on the respondent's report, such as behavioural actions, which comprise observing the respondent's behaviour in a controlled or uncontrolled. Physiological measures including galvanic skin reactions, pupil responses, and smoother facial muscle movement also rely on biological responses

rather than self-reports. Weight, height, and cholesterol levels are among the various characteristics that can be measured (Paul J lavrakas, 2008).

Individual intentions, according to the Theory of Planning Behaviour (TPB), are a significant component in forecasting behaviour (Ajzen, 2002; Armitage & Conner, 2001). The motive of an individual to create a given behaviour is characterised as intention (Ajzen, 2002). The intention is a specific agent in predicting behaviour. TPB model expects intention to behave to increase as subjective attitudes and norms become more positive (Ajzen, 2002). If the intention to behave is constant, then behavioural implementation is preferred through better perceptual control (Armitage & Christian, 2003).

Planning, buying, storing, preparing, and consuming food are all components of the food journey, which are solved by food management behaviours. Food waste occurs when people do not eat food before it expires. Food waste is linked to preserving food for too long in both circumstances. Finally, when food is discarded, the opportunity to avoid waste has usually passed. The most reported consumer food-management behaviours include planning, in-store purchase, storage, preparation, serving, and leftover consumption. According to Stefan et al. (2013), most of the variation in food waste is due to planning and buying habits. Consumers commonly rely on food shopping routines at the point of purchase, admitting to buying more food than they require or purchasing food products they will never use, potentially increasing food waste. Consumers, on the other hand, should have routines in place ahead of time to help them reduce food waste, such as checking inventory levels, making shopping lists, and meal planning.

2.2.2 Knowledge of Food Waste

Those who have a good awareness of the difficulties surrounding food waste, according to Barr (2007), are more likely to avoid wasting food. On this premise, we think that those who have a general awareness of the food waste problem, both in terms of its distribution and measurement, will benefit from it. Also, a better understanding of food waste can be expected to be related to streamlining purchases. Food waste is believed to be increased by heightened sensitivity to food cleanliness and a lack of knowledge of the expiration date before or before use on food labels, according to Brook Lyndhurst (2007) and Williams et al. (2012).

2.2.3 The Level of Concern Regarding Food Waste

According to Williams (2012), those who are environmentally and civically conscientious waste less food. According to Stefan (2013), people who are more worried about the negative consequences of food waste on the environment are more likely to modify their habits. Assume that individual economic concern over food waste has an impact on behaviour; the higher the level of concern, the more likely an individual is to change their behaviour. Furthermore, given the current economic crisis, it is expected that concern about the cost of wasted food will contribute to better pre-shopping preparation.

2.3 FOOD WASTE AWARENESS

Malaysia is one of the countries in the world with high purchasing power. Its population consists of a higher percentage of youth than the average ratio in other countries. Because of that, these youth behaviours are different from each other. The existing studies that carried out found that women waste more than men (Gallo, 1980; Buzby and Guthrie, 2002). According to these studies, the most common sort of teenage behaviour that leads to food waste is inadequate pre-shopping planning (Issue, 2006; WRAP, 2007; Gustavsson et al., 2011). Impulse buying is the wrong behaviour especially when we buy the foods. In addition, the expiration date label on packaged foods that are not understood causes an increase in purchasing power that can contribute to food waste (FSA, 2008). Specifically, according to various studies, inappropriate pre-shopping behaviour, such as failing to evaluate food stock before purchasing and failing to submit a sufficient spending list, leads to food waste. (Output, 2006; WRAP, 2007). All the behaviours are caused by self-reported behaviour, lack of knowledge about food waste, and level of concern with these issues.

Consumer buying behaviour, according to Alina (2017), is the process by which consumers choose, purchase, and use products or services to suit their needs. Consumer behaviour trends will shift from year to year. In other words, consumer behaviour is the study of individuals or groups and the methods they employ to select, safeguard, and dispose of goods and services that suit their requirements, as well as the impact these activities have on the consumer and the community. Consumer behaviour refers to the mechanism by which people make purchases and the factors that affect their choices.

Generally, education level, sorting techniques, convenience, attitudes, and worry all influence food waste behaviour (Secondi et al., 2015; Bernstad, 2014). Household food waste, according to Quested et al. (2011), results from the interaction of several behaviours known as "complex food behaviours". These practises pertain to food preparation, storage, and consumption (Quested et al., 2011). Other studies, on the other hand, have found that household food waste is driven by more than just fundamental food waste behaviours. Consumer assumptions about availability, variety, and freshness, according to Goebel et al., (2015), lead to food waste both in the supply chain and in households. Packaging contributes to household food waste due to too much foodstuff packed together and packaging that is difficult to empty (Williams et al., 2012). There is no proof that customers are careless or uncaring about the food they throw away, according to Evans (2011) and Metcalfe et al. (2012). However, to reduce any environmental damage, it is critical to influence behaviour across multiple channels. Sum up to Gao, (2017) on-site investigation was performed in the Xinglongshan Campus of Shandong University in the spring of 2016, where around two tonnes of food waste is generated per day by about three thousand students. Food waste is one of society's most pressing financial, environmental, and social issues. A lesser-known reality is that the food service sector accounts for 12-14% of all food waste in most developed countries (European Environmental Agency, 2016). According to Filimonau and De Coteau, (2019), up to 73-79% of hospitality food waste can be avoided.

On average, students disposed of nearly two ounces of the selected things on their trays (Norton & Martin, 1991). The authors proposed better portion control and student teaching that included waste costs as ways to reduce waste. Aramak, (2008) discovered similar per-person plate waste at 1.8 ounces of edible food per tray in a report. The edible

food residues extracted from students' trays were weighed in a study conducted at Northern Michigan University (Van Handel, 2004).

To be conclude, hospitality students are the most related to the tourism industry as they will be in the hotels and restaurants kitchen. This causes them to be among those who contribute to food waste because they might be a leader of the kitchen in future. Food wastage occurs in stages, during the preparation and serving process. Students' behaviour drives a relatively high percentage in food waste. This is because they are still young and very much in line with current trends. They are more extravagant in spending because they lack knowledge and level of concern about the food waste.

2.4 SELF-REPORT BEHAVIOUR

Consumer behaviour is influenced by self-report, knowledge of food waste and level of concern about food waste. Self-report refers to questions directed at youth about problems in wasting food irregularly through one's behaviours. This factor can be defined as the factor that distinguishes characteristics that can influence behaviour (Glenn, 2010). In other definitions, personal factors are individual characteristics and may not be related to other individuals in the same group (Khuong & Duyen, 2016). Unique habits and interests, and opinions are characteristics that an individual must take to decide. By the way, a person's personality attitude greatly influences the intention to recycle food waste.

The implementation of measuring instruments in the kitchen routine is very necessary for additional self-reporting because it can weigh and document the amount wasted. The process of self-reporting, in general, is associated with increased awareness and causing modifications because of adaptive reactions in a person's behaviour (Zimmerman, 2002). Empirical research on households has confirmed that a significant reduction in food waste can be achieved in the self-reporting process (Comber & Thieme, 2013; Leverenz et al., 2019; Thieme et al., 2012). The use of digital scales mentioned above is also expected to increase awareness among kitchen users as it is modest to assess how much waste is generated in a day. As a result, it can be stated that the proposed ways to reduce food waste range from simple adjustments, such as using smaller serving spoons, to a more complicated and systematic strategy (Marthinsen et al., 2012). Because of the multiple elements influencing this study, finding, and implementing mitigating actions can be difficult. Self-identity is defined as an important part of a person's self that does

something related to a particular behaviour and can be considered to the extent that doing that behaviour is an important component of one's self-concept (Conner and McMillan, 1999). A person's behaviour in this excessive waste disposal brings the disadvantages of disposing of household waste, hotel waste, and restaurants. In addition, the notion of moral obligation among Malaysian households influences waste prevention behaviour. (Bortoleto et al., 2012).

Several behavioural theories have been applied and conducted to explain the factors that influence a person's behaviour in recycling, including Schwartz's Normal Activation Model (Van Liere and Dunlap, 1978), and theories on orderly behaviour (Ajzen, 1991). Theory of planned behaviour (TPB). A person's behaviour is founded on his willingness to do behaviours such as intention to do something, according to TPB's statement. TPB considers intention as an antecedent of immediate action against doing a job or an act in doing something. The intention is based on a person's reaction to a particular behaviour through perceptions of the extent to which behavioural performance is positively assessed or negative Perceived control behaviour (PBC) can not only predict behaviour or even intentionally but can also be used to predict individual behaviour. As a result, according to a theoretical model for forecasting food waste behaviour, habits and emotions are major drivers of a person's present food waste intents and behaviours, with taste normative control and support leading to strong intentions to reduce wasted food (Russell et al., 2017).

Food waste has various effects on the country and pollutes the environment of a country. Various effects that will arise in conditions of the impact of discarded food waste which includes concerns about the economic implications of food waste, this happens to

be possible from improper food waste management and lead to the problems of a country. Furthermore, an individual's or a youth's attitude about food waste has a significant impact on the irregular disposal of food waste.

2.5 KNOWLEDGE OF FOOD WASTE

Knowledge factors play an important role in influencing a person's decision on purchasing and young people's knowledge of garbage as well as how to deal with problems related to excessive food waste. Every individual or group has someone who influences their purchasing decisions and thoughts. One's knowledge or thinking refers to the behaviour in making good and careful decisions will have a positive impact on one's life. According to Barr (2007), people who have a thorough understanding of food-related issues are more likely to avoid and reduce food waste. This statement has the potential to have a significant beneficial impact on the reduction of food waste by those who have a general understanding of the problem of food waste in terms of knowledge and measurement. Therefore, investigate strategies for restoring and reusing food can certainly reduce the phenomenon of waste (Quested et al., 2013; WRAP, 2013).

Furthermore, research on consumer household storage behaviour reveals that many people store stockpiles of unwanted products acquired for recipes or occasions that never happened. These items will be discarded at some point. Consumers have some understanding of how to manage food at home in terms of wet foods like fish and dried foods, but they frequently do not act on that knowledge. For instance, the refrigerator temperature is too high, the wrong vegetables are stored, and storing garbage for too long

has negative consequences such as odour, and date labels are used to assess disposal even though it no longer occurs once opened. Furthermore, the way people handle food varies by food category, such as vegetables or canned foods, which require special care for the optimum food preservation.

Adequate and accurate environmental knowledge to reduce the generation of food waste, as a result, understand its effects on nature environment (Gökdere, 2005) various requirements to control food waste so that what has been produced can be used wisely for human well-being. Therefore, this is more about wasting household food, the result of hotel and restaurant waste. By researching the content and disposal patterns of food waste, household food waste management and consumer knowledge of the environmental impact of food waste can influence reducing food waste disposal at the household level and in general. Ongoing food waste management in households has long been neglected as misconceptions about the small amount of food waste produced by each household level appear to be small but large in volume when combined, as it produces more food waste than other sources in Malaysia.

Assess whether environmental knowledge about the impact of food waste has a positive or negative impact on consumers. If consumers are aware of the environmental impact of food waste and believe that government policies on food waste management can help reduce food waste, is this a positive or negative impact?

Our earth suffers because of the many environmental problems that need to be addressed by individuals, requiring a guiding attitude from them to behaviours that support the environment. (Ahmed & Mohammed Al-Mekhlafi, 2009). Interconnected attitudes are formed and evolve over time. People are constantly adapting, modifying, and

releasing attitudes to meet their ever-changing needs and interests. A modest education will not change people's minds. Acceptance of a new attitude depends on who imparts knowledge, how knowledge is presented, how the person feels, and the circumstances in which knowledge is accepted. Knowledge of a topic can boost a person's knowledge by changing attitudes, according to social science research, but actions to improve behaviour and practises are dependent on a few complicated social and psychological elements. Gagne and Skinner (Curzon, 2003), for example, believe that a person's approved and reinforced behaviours, beliefs, and attitudes are likely to recur and eventually be incorporated in a group of personal values and routine behaviours. A person's attitude toward the environment or politics is frequently influenced by persuasion and communication within the person (Johnston, 2010).

2.6 LEVEL OF CONCERN ABOUT FOOD WASTE

Concerns regarding food safety and environmental consequences, such as resource depletion and greenhouse gas emissions caused by food waste, have heightened interest in this area. Private families have been highlighted as significant actors in the generation of food waste, despite the fact that food waste happens at all levels of the food supply chain. However, food waste is still rampant and uncontrollable. A person’s level of environmental awareness and high and civic awareness of wasting food (Williams et al., 2012; Parfitt et al., 2010; Barr, 2007). Individuals who tend to adjust their behaviour against prevalent food waste are hence individuals who are more worried about the environmental impacts of food waste.

In general, a person's personality, such as saving money, creates a stronger motivation to reduce food waste from a country's environmental and socio-economic problems (Graham-Rowe et al., 2014; Neff et al., 2015; Stancu et al., 2016). Environmental concerns are behind other factors in reducing food waste (Abeliotis et al., 2014). As a result, the level of environmental concern over food waste is strongly linked to socio-demographic parameters such as a person's level of education or age (Qi and Roe, 2016). Young people are more concerned about the financial aspect of food waste, whereas elderly people are more concerned about the social and environmental consequences (Blichfeldt et al., 2015; Tucker and Farrelly, 2015).

Negative effects on the environment range from too much food production, irregular consumption, and too much food waste. Food waste and losses are followed by a variety of environmental consequences, including soil erosion, deforestation, and water and air pollution. Furthermore, greenhouse gas emissions occur at several phases upstream and downstream, including pre-production, production, post-production, consumption, loss, and food waste. When food is wasted rather than depleted, the environmental impact and food production are greater because excessive waste processing is not well controlled. In addition, food waste is also a waste of water or a resource, because the amount of water used so far is too much and leads to wastage food production in cleaning kitchen utensils and cooking materials. Food waste prevention at this stage is crucial to preventing global climate change and protecting the environment.

There are various features and levels of thinking about food waste. knowledge is not just thinking but the behaviour of something is possible in terms of negligence in managing food waste, habits in waste, and some are even too careful in managing food

waste. Individuals who can throw it away often do not freeze food waste, rarely store food in the refrigerator according to temperature, do not check the valid date of food before buying it, or the expiration date of the type of food stored. While cautious individuals consist of those who say that they often take steps or even always limiting food waste. The biggest difference between these users leads to bad and good effects on the environment through individual behaviour.

2.7 THE RELATIONSHIP BETWEEN SELF-REPORTED, KNOWLEDGE, LEVEL OF CONCERN BEHAVIOUR AND FOOD WASTE AWARENESS AMONG HOSPITALITY STUDENTS.

Basically, the relationship between independent and dependent variables will be the whole awareness that can influence the consumer behaviour in hospitality students. Independent variables which is awareness has a direct effect in the independent variable in awareness food waste behaviour among hospitality students in Universiti Malaysia Kelantan. Self- reported, knowledge and level of concern will bring a good result awareness food waste behaviour of hospitality students. Hence, there is a strong relationship between them.

The relationship between the self-reported behaviour and behaviour of hospitality students. This self -reported behaviour can be done by way of motivating about the effects of food waste disposal and giving ourselves awareness of the importance of taking care of food waste disposal to the environment. This motivation can also be one of the most important psychological motivations that can influence self-reported behaviour. Motivation is a person's inner state, or specific needs and what the person wants, that will force them to act or act in a certain way and to maintain the level of behaviour and manpower of the human body. Behaviour as reported by the individual

The relationship between self-reported behaviour and behaviour of hospitality students will affect awareness in self-reported behaviour. Motivation is one of self-reported behaviour. Motivation is the internal state of a person, or the specific needs and wants of an individual, that forces them to act or act in a certain way, thus being able to

maintain human behaviour and energy levels of the human body (Moller, 2006). In the theory of Maslow is one of the most used to explain the premise motivate.

The relationship between knowledge of food waste and behaviour of hospitality students will awareness for the consumer behaviour. General knowledge and awareness of food waste as well as their knowledge of the issues and consequences of food waste on the environment Malaysian society, environment, and economy. The information from this section is very important because it provides information on the extent to which adolescents know about the effects of food waste. The information is used by decision makers to plan and implement further campaigns and programs on awareness of food waste among hospitality students in Universiti Malaysia Kelantan. Evaluate hospitality knowledge of exposed food waste (Stefan, 2013). Provide better insights to conclude education and provide policy recommendations on additional efforts or re-enforcement to reach out and educate on food waste.

The relationship between level of concern regarding food waste and behaviour of hospitality students. The level of concern about food waste is buying food at medium and small levels. This will have a positive impact on reducing food waste and at the same time give awareness to the behaviour of hospitality students in managing the expenditure of good goods. This level of concern can foster hospitality awareness in themselves as well as their behaviour towards food waste. Therefore, all types of resources are one of the aspects that need to be considered in various scales to measure awareness and concern for the environment (Roozen and Pelsmacker, 1998).

2. 8 CONCEPTUAL FRAMEWORKS

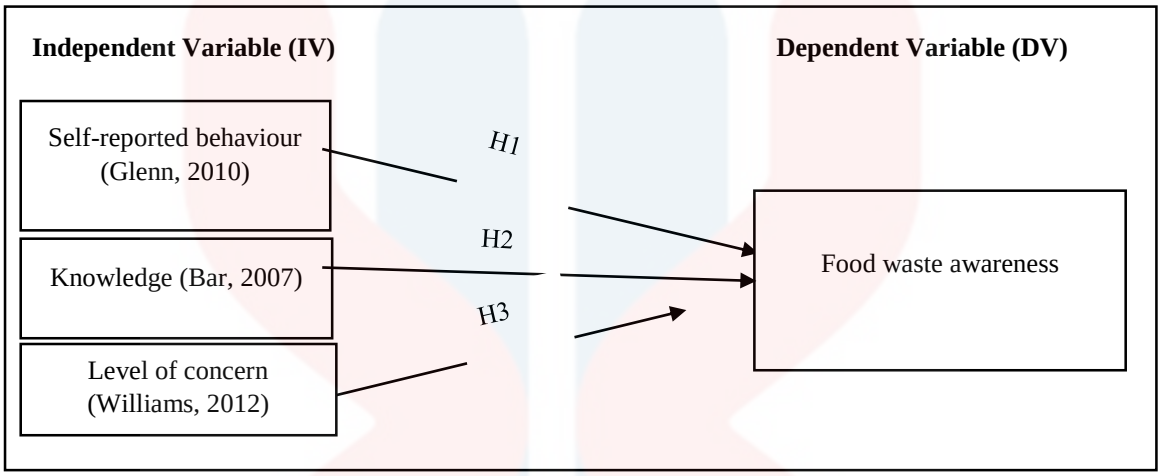

Figure 2.1: Conceptual Framework

Figure 2.1 indicates the independent variables (IV) and dependent variable (DV) of this research. The independent variables are the behaviour of hospitality students. On the other hand, the dependent variable (DV) is the food waste awareness among hospitality students' behaviour in Universiti Malaysia Kelantan. There were three independent variables (IV) been determined in this study which are self-reported behaviour, knowledge, and level of concern behaviour. This figure shows the relationship between self-reported behaviour, knowledge and level of concern behaviour and the food waste awareness among behaviour of hospitality students in Universiti Malaysia Kelantan.

2.9 HYPOTHESIS

A hypothesis must be testable and realistic, taking into consideration current knowledge and techniques. In addition, hypothesis is defined as prediction or explanation of the relationship between two variables. It implies a systematic relationship exist between an independent variable (IV) and a dependent variable (DV). Thus, the study has proposed:

H1 – There is relationship between self-reported behaviour and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

H2 – There is a relationship between knowledge of food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

H3 – There is a relationship between level of concern regarding food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

2.10 SUMMARY

This study measures the relationship of self- reported behaviour and behaviour of hospitality students. Besides, this study also investigated the relationship between knowledge about food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan. That are including the education. This study also measured the relationship between level of concern regarding food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan. In fact, the other awareness that influences behaviour are including academic, ethical, motivation and so on.

CHAPTER 3

3.1 INTRODUCTION

In this chapter, we would like to discuss the research methodology techniques used for the study, covering research design, population, and sampling. We may also want to discuss research instruments, data collection plans, and data analysis plans.

3.2 STUDY DESIGN

Research design is a project design for a study that offers process specifications followed by research to make a test hypothesis or achieve its objectives for the study (McDaniel and Gates, 1999). Quantitative research can be measured from numerical information collected in surveys that study about, using strategies, for example, surveys using questionnaires. The examination requires sample measurement to have progressive factual strength for discovery speculation (Kumar, Talib, & Ramayah, 2013).

The goal of this study is to analyse adolescents' understanding of food waste and to determine the factors that impact wasted food behaviour change. The right way is an expressive research plan after evaluating from self-reported behaviour, knowledge of food awareness, and level of concern about food waste problems. A quantitative research approach has been used for the investigation.

3.3 TARGET POPULATION

Population means an entire group of people with similar characteristics and certain features. The population can be identified as the target group or community of people with common characteristics involved or selected in this study. The study's target population is students in the hospitality industry. The population has been chosen in this study consists of undergraduate students from the Degree in Entrepreneurship (Hospitality) of Universiti Malaysia Kelantan (UMK). They must also consist of students currently on campus in years 1, 2, 3 and 4. The populations would also derive both student male and female hospitality students. This study is focused on the states in Malaysia for various reasons and potential for solutions and problems in the food wasted issue in this country which is too widespread. The target population for this study involves a multi-ethnic not only the Malay but also include other nations, Chinese and Indian in Malaysia. The probability sampling approach was utilised in this study, which is the selecting of people from a population to represent the population. The area of research that is readily accessible to obtain feedback from respondents is a priority for researchers to continue this study. Overall, this target population research is among hospitality students is 567.

3.4 SAMPLE SIZE

According to the Oxford Business Research Methods course book, populace refers to the occasions or things of premium, whole gathering of individuals that analyst wished to examine (Mukesh el at, 2013). Sample can be defined as the interpretation drawn from a population. The sample size can be used in market research and defining the number of subjects which should be included within a sample. The sample size is the subset of population (Kumar, 2013). The total students of Faculty Hospitality, Tourism and Wellness (FHPK) in Universiti Malaysia Kelantan (UMK) is 2132 students. From the statistics, there are three course that offered under this faculty. The population of this research is only hospitality students. Table 3.1 shows the statistic of the students.

Table 3.1: Data of student FHPK in 1st Year to 4th Year.

Course	Total students
Hospitality (SAH)	567
Tourism (SAP)	1026
Wellness (SAW)	539
	2132

The population of the students exceeds 550 as stated by Krejcie & Morgan (1970), so the sample used by the researchers is 234 students. The formula for the sample size according to Krejcie and Morgan is shown in Table 3.2.

Table 3:2: Sample Size of Known Population

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

$$n = \frac{X^2 NP(1-p)}{e^2(N-1) + X^2 p(1-p)}$$

n = sample size

N = population size

e = acceptable sampling error

X² = chi-square of degree of freedom 1 and confidence 95% = 3.841

p = proportion of population (if unknown, 0.5)

3.5 SAMPLING METHOD

Sampling is the method of process and selecting an adequate number of elements from the population (Kumar, 2013). In the process of sampling, the researchers are selecting some elements of the population as the subjects of the sample. Sampling can be used to infer a population or to generalize with existing theory (Hamed, 2016). Sampling method divided into two, probability sampling techniques and non-probability sampling techniques. Random selection is used in the probability sampling process, which allows statistical inferences about the whole population. Non-probability sampling entails a non-random collection of sample locations based on convenience.

The sampling method has been chosen for this study is Simple Random Sampling (SRS) which is from probability sampling. SRS is a randomly selected subset from a population. This method is the most straightforward, because it assures that every member of the population has an equal chance of being chosen. Each subject is picked separately from other members of the population, and the entire sampling technique is done in a single stage (Gaganpreet, 2017). Another significant issue of SRS is its population representativeness. Theoretically, the only thing that might negatively impact its representativeness is luck. When drawing conclusions from the findings of a survey, it is important to use an unbiased random sample and a representative sample. The sample is taken from the intended audience of hospitality students.

We choose Simple Random Sampling to complete this research. As stated, students from Faculty Hospitality, Tourism and Wellness were respondents for the present study. From all the questionnaire answered, we picked 238 forms to analyse the data.

3.6 DATA COLLECTION

Data collection is an efficient approach to assembled and measure the information from an assortment of sources to get a comprehensive and accurate data. Data collection enables a person or an association to answer related questions, evaluating results and create conjecture regarding upcoming probabilities and trends. Data collection can be used to collect data are survey form, questionnaires, and Google form. The collection of data plays an important role in statistical analysis. In this study, questionnaires are distributed to respondents as a primary data collection tool. Primary data is the data collected for the first time and to find a solution to the problem. The questionnaire is the primary data source that has a series of questions for respondents by ticking the one they consider appropriate (Ajayi, 2017).

Each set of the questionnaire attached with the cover letter. The cover letter contained the content of the research purpose for the respondents. Therefore, respondents understand the study's motive and purpose. There have three parts of the section that respondents need to tick for their answer and the answer is the data that we collect for the research. The questionnaire is delivering to the awareness of food waste among hospitality students in Universiti Malaysia Kelantan.

3.7 RESEARCH INSTRUMENT

Research instruments are measurement tools such as questionnaire, test or scales that designed to help researcher obtained data on the topic of importance from research subjects. Research instrument including information for example the population addressed, the purpose of the instrument and the variables measured. There are different types of measurement such as survey, case study or questionnaire that can be used by researchers for their study depends on the nature of research that been carried out (Umoh, 2019).

Since there is the probability of the various type of respondent, this questionnaire has been provided with duo language which is English and Malay to make thing easier to the respondent. The questionnaires are used as a tool for the study to collect data from the respondents. The questionnaires that given to respondents were developed and contained a variety of question of self-reported, knowledge and level of concern that influence in behaviour of hospitality students.

The questionnaire is separated into three sections (Section A, Section B and Section C). Section A discussed the demographic segmentation. The demographic profile is a market segment according to the respondent gender, marital status, age, religion, race, occupation, and income level (Gigli, 2018). Section B stated the question related to the awareness of food waste among hospitality students in Universiti Malaysia Kelantan. Next, section C stated the question related to the independent variable is self-reported, knowledge and level of concern with behaviour of hospitality students.

In addition, the questionnaire gave multiple choice and Likert scale for the respondent. Multiple-choice questions are very important for the respondent to choose an answer from the list of options that provided in the question while Likert which the information would measure as of one to five for strongly disagree to strongly agree, respectively. Hence, measurement on the 5 Likert Scale is 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly agree. There are 5 points Likert scale ranging from 1 to 5 that was used for each part of the questionnaire. The researchers distributed the questionnaires among hospitality students in Universiti Malaysia Kelantan.

Table 3.3: The 5 - Likert Scale Table

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
(1)	(2)	(3)	(4)	(5)

3.8 DATA ANALYSIS

Data would be analysed from the form of raw data converted into more meaningful information. Data analysis is the main component of the result of providing that from the collection of data and is used as a basis for decision making. Data from various sources are collected, studied, and then analysed to form a sort of finding or conclusion. There are various specific methods of data analysis in part including data mining, text, intelligence and business analysis and data visualization (Alias, 2019).

3.8.1 Descriptive Statistical Analysis

Descriptive statistics are analysing data in percentage, frequency and by using Measure of Central Tendency (MCT) that is mean, mode and median. In descriptive statistics, this type of data analysis often involves bivariate analysis by using only one variable. In the data analysis chapter, for demographic factors such as gender, age and even education we use percentages and frequencies. For example, the percentage and number of male and female respondents. For variables such as age, we can also identify the mean of the average age of the respondent for example.

If entering a statistics class, these are among the initial topics that should been discussed before being extended with inferential statistical topics. The basic function of statistics is to manage and translate data so that it can be understood. Often for these

descriptive statistics, the frequency table is made to read the data easily (Rosmawati, 2011).

In the science of statistics is not the kind of science of mathematics. If you want to understand statistics, you must understand our entire research. The most important thing to understand the objectives of the study can then be aligned with the type of data collection and the type of data analysis. For example, if the objective of our study on the level of communication skills among respondents. And we use survey design and questionnaire instruments to obtain data. This type of data analysis should use descriptive statistics with frequency because it is a bivariate analysis that uses only one variable that is the level of communication skills and we only see the frequency that is the frequency distribution of respondents who communicate with instruments.

3.8.2 Pearson Correlation Coefficient

The coefficient of correlation of Pearson also knew the coefficient of correlation of the moment of the product. It is represented by r in a sample. Then, while in the population the sample was taken from and characterized by π. The coefficient is measured on a non-unit scale and the value from −1 to 0 to + 1 will be taken. In addition, the positive correlation existed when the sign of the positive correlation coefficient existed. Negative correlation would have existed if the correlation coefficient was negative.

3.8.3 Reliability Test

The applicability and consistency with which an instrument evaluates a notion without bias and error is referred to as instrument reliability (Sekaran & Bougie, 2010). The reliability coefficient, Cronbach's Alpha, is used to show how strongly the items in the instrument are positively associated. It computes the average inter correlations among the concept-measurement components. According to Sekaran and Bougie, Cronbach's Alpha is closer to 1 if the measures are more dependable (2010). Cronbach's Alpha of 0.6 is regarded as mediocre, 0.7 as fair, and 0.8 as excellent (Sekaran & Bougie, 2010).

3.9 SUMMARY

In conclusion, we had to discuss the research methodology techniques used for this study. We have discussed research design, target population, sample size, sampling method, data collection, research instrument and data analysis. Research design is a project design for a study that offers process specifications followed by research to make a test hypothesis or achieve its objectives for the study. The population can be identified as the target group or community of people with common characteristics involved or selected in this study. The sample size can be used in market research and defining the number of subjects which should be included within a sample. Sampling is a technique for selecting a sufficient number of components from a population. Data collection enables a person or an association to answer related questions, evaluate results and create conjecture regarding upcoming probabilities and trends. Research instruments are measurement tools such as questionnaires, tests or scales that are designed to help researchers obtain data on the topic of importance from research subjects. Data analysis is the main component of the result of providing that from the collection of data and is used as a basis for decision making.

CHAPTER 4

4.1 INTRODUCTION

This chapter will elaborate on the results and findings of the research data that have been collected from the respondents online. The total collection data that has been obtained is 238 respondents from the Universiti Malaysia Kelantan. All data were analysed using IBM SPSS Statistics 26. Four analyses were performed to obtain results which are frequency analysis, descriptive analysis, reliability test, and Pearson correlation.

4.2 RESULT OF RELIABILITY ANALYSIS

The questionnaire on food waste among hospitality students at the Universiti Malaysia Kelantan was tested using reliability analysis. Cronbach's Alpha analysis was used to determine that the information was reliable and internally consistent. The table below shows the measurements of the Thumb Rule coefficients of Cronbach Alpha according to Stephanie (2017).

Table 4.1: The Rule of Thumb to Interpret Cronbach's Alpha

Alpha Coefficient Range	Strength of Association
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: Stephanie (2017)

Table 4.1 illustrates the overall consistency (pilot test) for the dependent and independent variables. A pilot test was conducted on 30 respondents before being distributed to 238 respondents through online survey method.

Table 4.2: Result of Reliability Coefficient Alpha for the Independent Variables and Dependent Variable

Variable	Number of Item	Cronbach's Alpha Coefficient	Strengths Of Association
Self-reported behaviour	5	.621	Questionable
Knowledge of food waste	5	.712	Acceptable
Level of concern	5	.578	Poor
Food waste awareness	5	.587	Poor
Overall variables	20	.765	Acceptable

Table 4.2 shows the overall values of the Cronbach's Alpha Coefficient for the independent and dependent variables in this study. From the table, we can conclude all variables are above the value of 0.5 and the overall variable is 0.765. Therefore, the results shown are reliable and acceptable in this study.

There were five questions used to measure self-reported behaviour and food waste awareness among hospitality students at Universiti Malaysia Kelantan. Table 4.2 shows that the Cronbach's Alpha result for this section question is 0.621 which produces a questionable result. Therefore, the coefficients obtained for the questions in the reported behavioural variables are reliable.

Next, there are five questions in measuring knowledge about food waste and food waste awareness among hospitality students at Universiti Malaysia Kelantan. The result of the Cronbach Alpha coefficient shown in this section is 0.712 which proved to be

acceptable. Therefore, the coefficients obtained for the questions in the knowledge variable are reliable.

Furthermore, in measuring the conditional variable from level of concern and awareness about food waste among hospitality students at Universiti Malaysia Kelantan, five questions were used. The Cronbach's Alpha result for this section question is a bad 0.578. Therefore, the coefficients obtained for the questions in the situational variables are still reliable.

Finally, in the measurement, food waste awareness among hospitality students at Universiti Malaysia Kelantan, five questions were used and Cronbach's Alpha result for this section question was 0.587 which indicates poor. Therefore, the coefficients obtained for this question in measuring food waste awareness among hospitality students at Universiti Malaysia Kelantan are also still reliable.

Since the Cronbach Alpha charge for the variable has exceeded 0.7, this indicates that the questionnaire is very reliable and able to continue the study. The overall reliability has proved that the respondents understood the given questions well and this means that the questionnaire was accepted for this study

4.3 DEMOGRAPHICS CHARACTERISTICS OF RESPONDENT

For this study, samples were collected from respondents of hospitality students studying at Universiti Malaysia in Kelantan from years 1, 2, 3 and 4 from various races. Frequency analysis was selected for an overview distribution of respondents participating in this study. Demographic questions distributed from online questionnaire forms obtained from various background of respondents' profiles in section A of the questionnaire. The profiles included are gender, marital status age, race, and year of study. The frequency analysis of respondent demographic profiles is presented in the form of tables and pie charts in the following sections. The data were tested using Cronbach's Alpha analysis to ensure reliability and internal reliability of the information.

The basic analysis of this study includes frequency analysis. There are five questions posed in Part A, such as gender, marital status, age, religion race, and year of study. The demographic profiles of the respondents are presented in the form of tables and pie charts.

4.3.1 Gender

Table 4.3 and Figure 4.1 show the gender of the respondents. The total number of respondents for males is 76 respondents while the total number of females is 162 people responded. Of the 238 respondents, 31.9% of the total respondents were male and the remaining 68.1% were female respondents involved in this study.

Table 4.3: Number of Respondent by Gender

Gender	Frequency	Percentage	Cumulative percentage
Female	162	68.1	68.1
Male	76	31.9	100.0
Total	238	100.0	

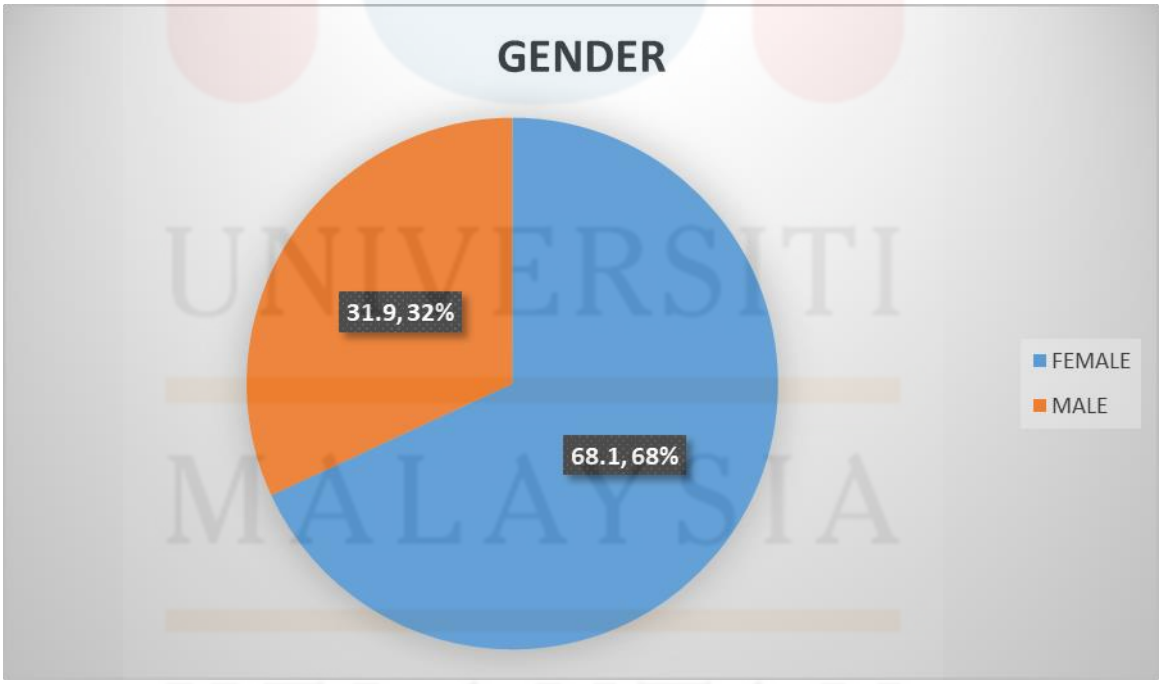

Figure 4.1: Percentage of Respondent by Gender

4.3.2 Marital Status

Table 4.4 and Figure 4.2 show the number of respondents for marital status. Overall, for single respondents were 225 respondents while the number of married was 13 persons responded. Of the 238 respondents, 94.5% of the total respondents were single, 5.5% were married involved in this study.

Table 4.4: Number of Respondent by Marital Status

Marital status	Frequency	Percentage	Cumulative percentage
Single	225	94.5	94.5
Married	13	5.5	100.0
Total	238	100.0	

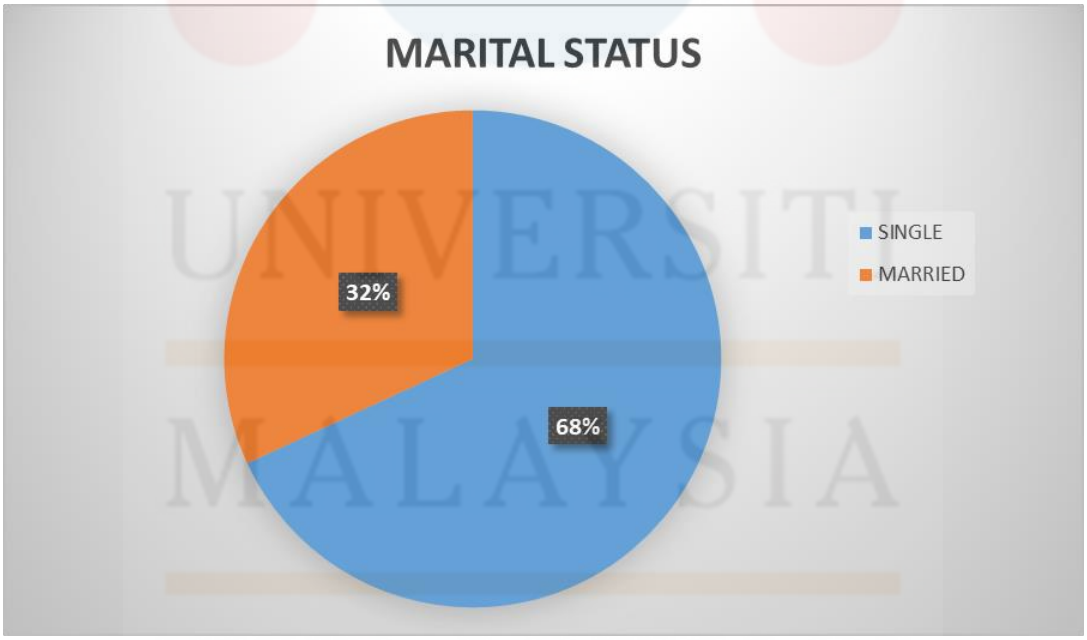

Figure 4.2: Percentage of Respondent by Marital Status

4.3.3 Age

Table 4.5 and Figure 4.3 showed the total respondents by age. There were 238 respondents who consist of age from 19-20 (39 respondents), 21-22 (75 respondents), 23-24 (90 respondents), and 25-26 (34respondents) had responded to the questionnaire. Figure 4.2 showed the highest percentage of respondents was respondents who have a range of age from 19-20 (16.45%) and followed by 21-22 which was (31.5%), 23-24 (37.8%), and the lowest percentage of respondents were 25-26 (14.3%).

Table 4.5: Number of Respondent by Age

Age	Frequency	Percentage	Cumulative percentage
19-20 years old	39	16.4	16.4
21-22 years old	75	31.5	47.9
23-24 years old	90	37.8	85.7
25-26 years old	34	14.3	100.0
Total	238	100.0	

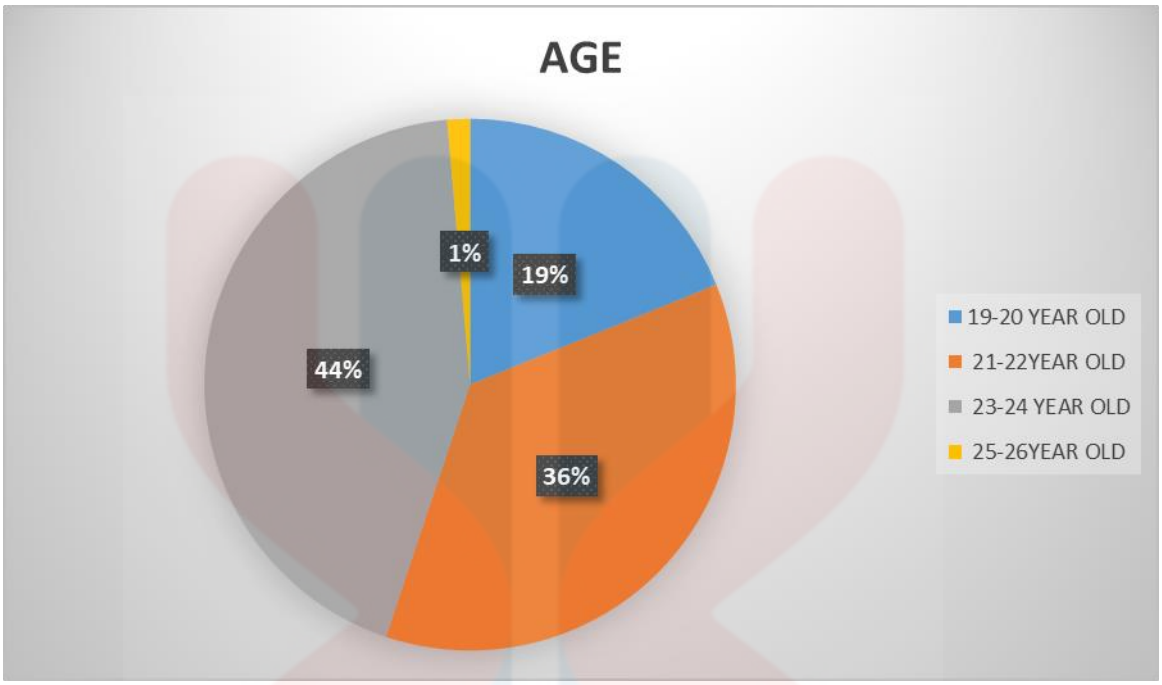

Figure 4.3: Percentage of Respondents by Age

4.3.4 Religion Race

Table 4.6 Number of Respondents by Religion Race

Religion race	Frequency	Percentage	Cumulative percentage
Malay	138	76.9	76.9
Chinese	35	14.7	91.6
Indian	17	7.1	98.7
Others	3	1.3	100.0
Total	238	100.0	

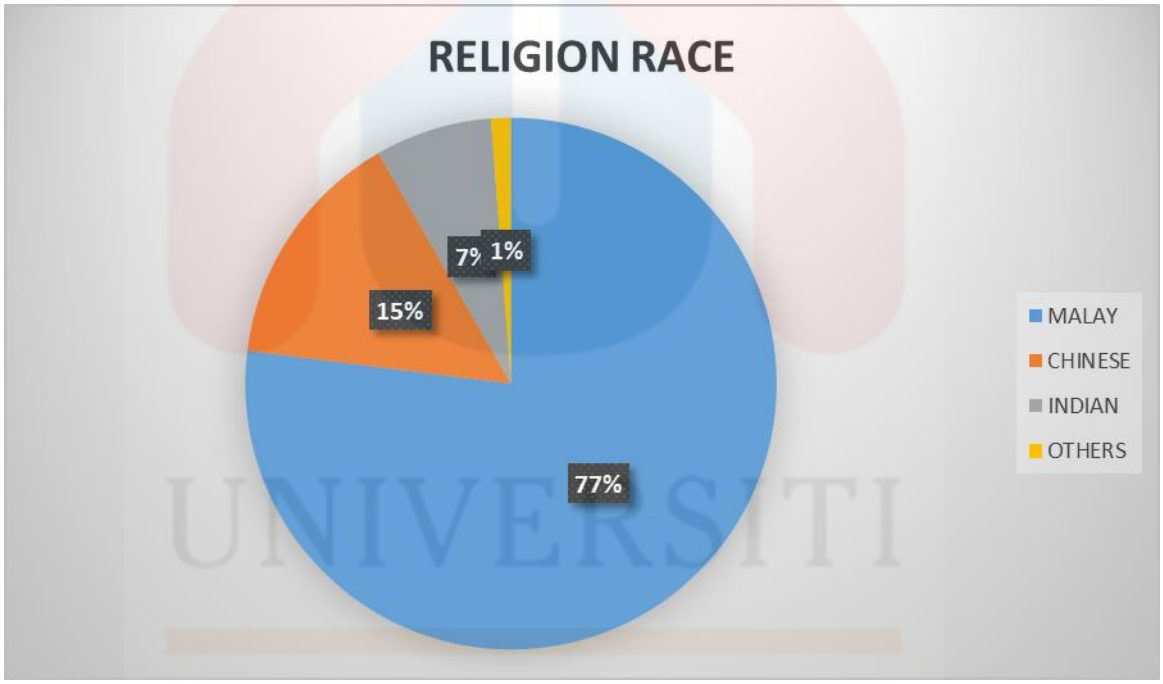

Figure 4.4: Percentage of Respondent by Religion Race

Table 4.6 and Figure 4.4 showed the total respondents by race. There were 238 respondents who consist of Malay (183 respondents), Chinese (35 respondents), Indian (17 respondents) others (3 respondents) had responded to the questionnaire. Figure 4.3 showed the highest percentage of respondents was Malay (19.7%) and followed by

Chinese which was (14.7%), next is following by Indian (7.1%) and the lowest percentage respondents were others' religion (1.3%).

4.3.5 Year of Study

Table 4.7 and Figure 4.5 show the number of respondents by the year of study. There are 238 people respondents were year 1 students (47 respondents), year 2 students (48 respondents), year 3 students (100 respondents) who are year 4 students (43 respondents) answered the questionnaire. Figure 4.3 showed the highest percentage of respondents were year 3 students (42.0%), followed by year 2 students (20.2%), followed by year 1 students (19.7%), and the lowest percentage respondents were year 4 students (18.1%).

Table 4.7 Number of Respondents by Year of Study

Year of study	Frequency	Percentage	Cumulative percentage
Year 1	47	19.7	19.7
Year 2	48	20.2	39.9
Year 3	100	42.0	81.9
Year 4	43	18.1	100.0
Total	238	100.0	

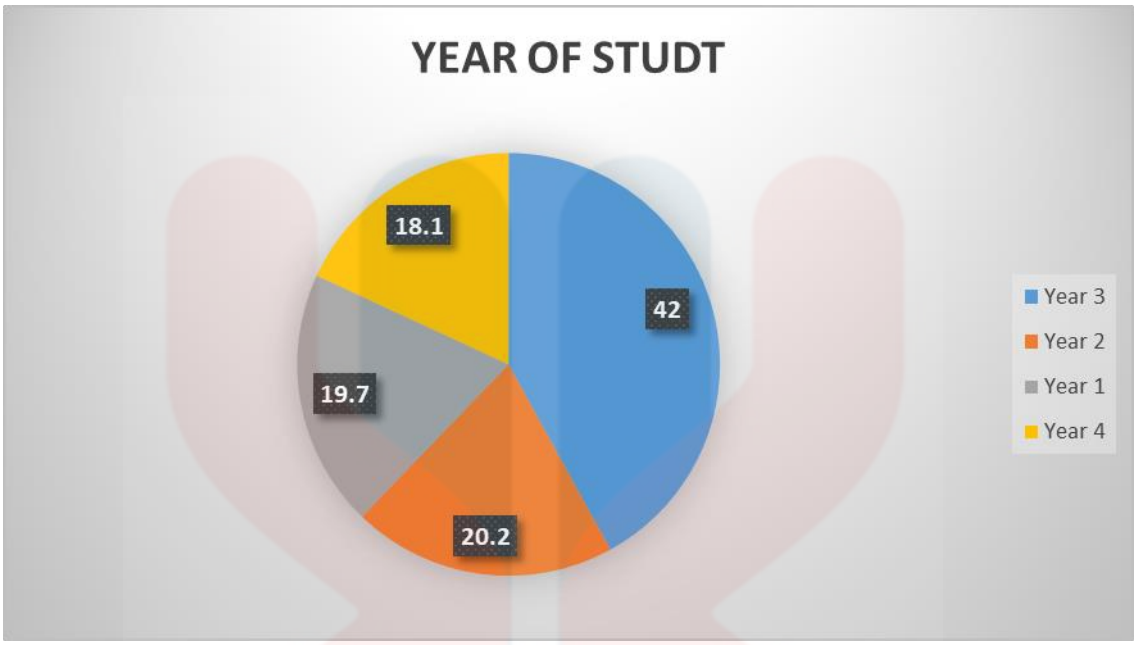

Figure 4.5: Percentage of Respondents by Year of Study

4.4 DESCRIPTIVE ANALYSIS

This study has analysed the mean and standard deviation for parts B, C, D, and E of the questionnaire.

4.4.1 Independent Variable and Dependent Variable

Table 4.8: Descriptive Statistics

Variables	N	Mean	Standard deviation
Self-reported behaviour	238	4.3092	.57442
Knowledge of food waste	238	4.3462	.49003
Level of concern	238	3.9303	.68301
Food waste awareness	238	4.2739	.53714

Table 4.8 showed the number of respondents and mean of independent variables and dependent variables. For the independent variables, the highest mean was knowledge of food waste which is 4.3462 and followed by self-reported behaviour which is 4.3092 and level of concern with 3.9303. The mean for dependent variable is 4.2739.

4.4.2 Self-reported Behaviour

Table 4.9: Descriptive statistic of self-reported behaviour

No	Item description	N	Mean	Standard deviation
1	University needs to Organize awareness Campaigns on food waste For the students.	238	4.5798	.62972
2	Food wastages occur every Day especially in the Hospitality industry.	238	4.4202	.76854
3	Food waste is more Common as early as the Level of food preparation.	238	4.0966	.96953
4	Food waste will cause an Increase in the cost of living Of students.	238	4.1303	.92541
5	I make several purchases Of food items in a week.	238	4.1429	.92125

Table 4.9 showed the mean and standard deviation analysis on the independent variable which was self-reported behaviour. The highest mean value was item 1 which was 4.5798, where respondents agreed that university needs to organize awareness campaigns on food waste for the students. The lowest mean value was item 3 which was 4.0966, where the respondent slightly agreed that food waste is more common as early as the level of food preparation. For the data set from 238 respondents with the standard deviation most of the value which lowest than 1, it indicated the values close to mean.

4.4.3 Knowledge of Food Waste

Table 4.10: Descriptive statistic of Knowledge of food waste

No	Item description	N	Mean	Standard deviation
1	I tried to reduce for the Amount of food waste.	238	4.4706	.66018
2	I will always make a list of What I need before Shopping.	238	4.3193	.80539
3	I will always check Cupboard and fridge before Shopping the food.	238	4.3361	.85957
4	I will always plan for The meals.	238	4.3319	.79762
5	I often throw leftover food in the bin.	238	4.0882	1.04568

Table 4.10 showed the mean and standard deviation analysis of respondents on the independent variable which was knowledge about food waste. Item 1 score the highest mean values which was 4.4706, where the respondents agreed to reduce the amount of food waste. The lowest mean item 5, with the mean value of 4.0882, where the respondent somewhat agreed that they often throw leftover food in the bin. From the data set from 238 respondents with the standard deviation most of the values which lowest than 1, indicated the values close to meanwhile the standard deviation which greater than 1, it indicated the values were more dispersed.

4.4.4 Level of Concern

Table 4.11: Descriptive statistic of level of concern

No	Item description	N	Mean	Standard deviation
1	A large part of food waste Derives from cooking more Food than you need.	238	4.5378	.65333
2	A large part of food waste is Due to promotions and Special offer in Supermarkets.	238	4.04220	.97992
3	The packing of the food Waste thrown in the trash is A bigger environmental Problem than food waste.	238	4.2899	.77131
4	I will be throwing away food if the expiry date is passed.	238	4.4412	.77044
5	I know the differences in Meaning between the labels 'use by' and 'best before'.	238	4.4202	.80605

Table 4.11 showed the mean and standard deviation analysis of respondents on the independent variable which was the level of concern. The first item scores the highest mean value which was 4.5378, half the respondents agreed that cooking more food than you need is a major source of food waste. The lowest mean item2, with a mean value of4.0420, indicated that the respondent agreed that promotions and special offers at supermarkets contribute to a considerable portion of food waste. From the data set from 238 respondents with the standard deviation, most of the value that was lowest than 1 indicated the values close to meanwhile the standard deviation that was greater than 1tindicated the values were more dispersed.

4.5 PEARSON CORRELATION ANALYSIS

Pearson's Correlation Coefficient aims to identify the intensity of association and significant relationships between the Independent Variables (IVs) and Dependent Variables (DVs). This analysis is to identify whether the correlations exist between the self-reported behaviour, knowledge about food awareness, and level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan. If the relationship is significant, researcher must decide whether the level of strength of the association is acceptable.

Table 4.12: Table of Pearson's Correlation Coefficient

Size of Correlation	Interpretation
0.90 to 1.0 (-0.90 to -1.0)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0..30 (-0.00 to -0.30)	Little if any correlation

Source: Abgunbiade and Ogunyika, (2013)

4.6 HYPOTHESIS TESTING

Hypothesis 1: Self-reported behaviour

H1: There is relationship between self-reported behaviour and food waste awareness among hospitality student in Universiti Malaysia Kelantan.

Table 4.13: Correlation coefficient for self-reported behaviour and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

		Food Waste Self-reported behaviour	Food waste awareness
Self-reported behaviour	Pearson Correlation	1	.335**
	Sig. (2-tailed)		.000
	N	238	238
Food waste awareness	Pearson Correlation	.335**	1
	Sig. (2-tailed)	.000	
	N	238	238

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.13 illustrated Pearson correlation coefficient, significant value and the number of respondents which were 238. The p-value was 0.000, which was less than level of significance 0.01. The correlation coefficient of 0.335 indicated that self-reported behaviour and food waste awareness had a low positive correlation.

Hypothesis 2: Knowledge about food waste

H2: There is a relationship between knowledge about food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

Table 4.14: Correlation coefficient for knowledge of food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

		Food Waste Knowledge	Food waste awareness
Knowledge	Pearson Correlation	1	.481**
	Sig. (2-tailed)		.000
	N	238	238
Food waste awareness	Pearson Correlation	.481**	1
	Sig. (2-tailed)	.000	
	N	238	238

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.14 illustrated Pearson correlation coefficient, significant value and the number of respondents which were 238. The p-value was 0.000, which was less than 0.01 level of significant. The correlation coefficient of 0.481 suggested a low positive correlation between knowledge of food waste and food waste awareness.

Hypothesis 3: Level of concern

H3: There is a relationship between level of concern regarding food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

Table 4.15: Correlation coefficient for level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

		Food Waste	
		Level of concern	Food waste awareness
Level of concern	Pearson Correlation	1	.387**
	Sig. (2-tailed)		.000
	N	238	238
Food waste awareness	Pearson Correlation	.387**	1
	Sig. (2-tailed)	.000	
	N	238	238

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.15 illustrated Pearson correlation coefficient, significant value and the number of respondents which were 238. The p-value was 0.000, which was less than significant level of 0.01. The correlation coefficient of 0.387 suggested a low positive correlation between level of concern and food waste awareness.

4.7 FRAMEWORK ANALYSIS

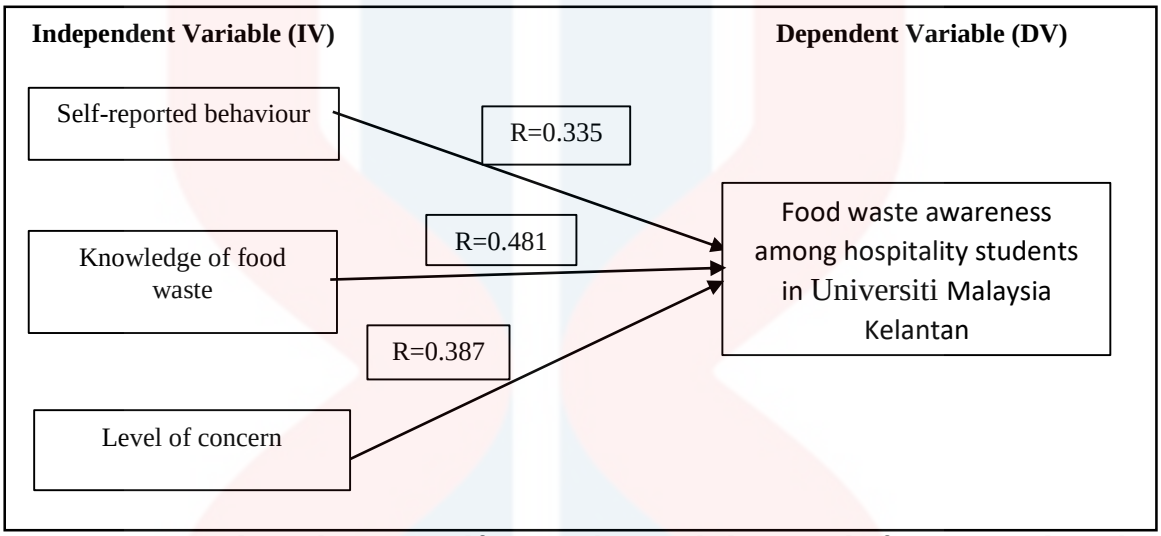

Figure 4.6: Correlation between Self-reported, Knowledge, Level of concern and Food waste awareness

The figure 4.6 showed the framework with the data value for the significant independent variables to the dependent variable. The dependent variable was related to three independent variables in a meaningful way. The highest Pearson correlation value is between knowledge of food waste and food waste awareness which is 0.481. Meanwhile the lowest Pearson correlation value is between self-reported behaviour and food waste awareness with the value 0.335. The Pearson correlation value between level of concern and food waste awareness is 0.387.

4.8 SUMMARY

At the end of this chapter, the result of revealed that the data is statistically reliable and valid. All the relationship among three independent variables in this study are accepted. All the independent variables show different correlation coefficient with the dependent value which are 0.335 for self-reported behaviour, 0.481 for knowledge about food waste, and 0.387 for the level of concern. The result shows a low positive correlation between al the independent variables and dependent variables. As the conclusion, there are a significant relationship between self-reported behaviour, knowledge about food waste, and level of concern with the food waste awareness among hospitality students in Universiti Malaysia Kelantan.

CHAPTER 5

5.1 INTRODUCTION

This chapter discussed the recapitulation of study, the finding, and discussion about the relationship between self-reported behaviour, knowledge of the food waste, and the level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan. Furthermore, this chapter also deliberated the limitations of the study and suggested several recommendations for future study.

5.2 RECAPITUAL OF STUDY

The purpose of this study was to see if there was a link between self-reported behaviours, knowledge, and the level of concern about food waste, as well as food waste awareness, among hospitality students at Universiti Malaysia Kelantan. The purpose of this study was to determine the association between food waste behaviour, knowledge, and concern, as well as food waste awareness, among hospitality students at Universiti Malaysia Kelantan. In this case, primary data was gathered using a series of questionnaires that elicited responses from respondents. A total of 238 people were chosen to be included in the sample. The relationship between self-reported behaviours,

knowledge, and level of concern about food waste, as well as food waste awareness, among hospitality students at Universiti Malaysia Kelantan, was also investigated in this study.

The dependent variable in this study is critical for determining food waste awareness among Universiti Malaysia Kelantan hospitality students. Whereas, a set of independent variables consisted of self-reported behaviours, knowledge of food waste, and level of concern about food waste. Theory Planning Behaviour (TPB) has suggested individual intentions as an important factor in predicting behaviour (Ajzen, 2002; Armitage & Conner, 2001). An individual's motivation to produce a specific behaviour is characterised as their aim (Ajzen, 2002). The intention is a specialized agent in predicting behaviour. The TPB model expects the intention to behave to increase when subjective attitudes and norms become more positive (Ajzen, 2002).

The sampling frame of this study was among hospitality students in Universiti Malaysia Kelantan. We choose Simple Random Sampling to complete this research. As stated, we will look for hospitality students from Faculty Hospitality, Tourism, and Wellness as the respondents to answer our questionnaires. From all the questionnaires answered, we will pick 238 forms for the data. The reliability analysis, descriptive analysis, and Pearson's correlation coefficient were all used in this data study. The independent variables were subjected to a reliability test to ensure the measuring instrument's internal consistency. The Cronbach’s Alpha for all variables scales was in the range from 0.578 to 0.712. It showed that the result was acceptable. The knowledge about food waste variable scored the highest Cronbach’s Alpha value of 0.712, the self-reported behaviour had the second-highest Cronbach’s Alpha value which was 0.621,

followed by level of concern (0.578). Thus, the self-reported behaviour variables and knowledge about food waste variable had met the minimum requirement of reliability since Cronbach's alpha coefficients of variables were greater than 0.6.

In this study, Pearson's correlation was utilised to explain the link between the two variables in terms of direction and strength. This result indicated that for food waste awareness among hospitality student are strong and positive correlation between knowledge about food waste ($r=0.481$, $n=238$, $p<0.01$) and self-reported behaviour ($r=0.335$, $n=238$, $p<0.01$) suggested low to moderate correlation between self-reported behaviour and food waste awareness among hospitality students. Not only that, level of concern ($r=0.387$, $n=238$, $p<0.01$) was also suggested a low positive correlation between level of concern and food waste awareness among hospitality students.

5.2.1 Research Question 1: What is the relationship between self-reported behaviour and food waste awareness among hospitality students in Universiti Malaysia Kelantan?

This study, self-reported was featured as a factor that contributes to the food waste awareness among hospitality students in Universiti Malaysia Kelantan. Self-report refers to questions directed at youth about problems in wasting food irregularly through one's behaviours. This factor can be defined as the factor that distinguishes characteristics that can influence behaviour (Glenn, 2010). In other definitions, personal factors are individual characteristics and may not be related to other individuals in the same group (Khuong & Duyen, 2016). Unique habits and interests, and opinions are characteristics

that an individual must take to decide. By the way, one's personal attitude has a significant impact on one's desire to recycle food waste. Based on the analysis done, it was found that the relationship between self-reported behaviour and food waste awareness is at lower-level factor ($r=0.335$, $n=238$, $p<0.01$). There was a positive and substantial association between self-reported behaviour and food waste awareness, according to the findings.

5.2.2 Research Question 2: What is the relationship between knowledge of food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan?

The results of this study showed that the relationship between knowledge of food waste and food waste awareness among hospitality students at Universiti Malaysia Kelantan is weak ($r=0.481$, $n=238$, $p<0.01$). The findings indicate that among hospitality students, there was a positive and substantial relationship between knowledge of food awareness and food waste awareness. As a result, knowledge is a crucial component in influencing food waste awareness among hospitality students at Universiti Malaysia Kelantan. Consumer purchasing decisions are influenced by knowledge aspects, and young people's awareness of waste and how to deal with related problems is crucial. Someone has an impact on a person's or a group's purchasing decisions and ideas. The behaviour of making smart and thoughtful decisions will have a favourable impact on one's life, regardless of one's knowledge or thinking. According to Barr (2007), those who have a strong understanding of food-related issues are more likely to avoid wasting food.

5.2.3 Research Question 3: What is the relationship between the level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan?

In this study, the result indicates that the strength of the level of concern and food waste awareness among hospitality students in Universiti Malaysia Kelantan is at low level ($r=0.387$, $n=238$, $p<0.01$). The findings imply that there was a positive and significant relationship between the level of concern and food waste awareness. Food waste is a major worry for people who buy food in medium and small quantities. This will have a favourable impact on minimising food waste while also raising awareness of hospitality students' behaviour when it comes to monitoring their expenditure of nice items. This level of concern is able to foster hospitality awareness in themselves as well as their behaviour towards food waste. Therefore, all types of resources are one of the aspects that need to be considered in various scales to measure awareness and concern for the environment (Roozen and Pelsmacker, 1998).

5.3 FINDING AND DISCUSSION

The Reliability Test was conducted to 30 respondents before it was distributed to 238 respondents using the online survey method. It was tested by the Cronbach's Alpha Coefficient indicating the range from 0.578 to 0.712 and it showed that the result was acceptable and closed to acceptable where self-reported behaviour variable scored the highest Cronbach's Alpha value of 0.712, the level of concern had the second highest Cronbach's Alpha value which was 0.587, followed by knowledge about food waste (0.578). Because the Cronbach's alpha coefficients of the variables were greater than0.6, the self-reported behaviour variables exceeded the minimum threshold of reliability.

In the Descriptive Analysis for the independent variables, the highest mean value was the knowledge of food waste variable which was 4.3462 and followed by the self-reported behaviour variable (4.3092). The lowest mean value for the independent variables was the level of concern influences 3.9303. The mean value for the dependent variable was 4.2739. It could conclude that the knowledge about food waste is the most influential food waste awareness among hospitality students in Universiti Malaysia Kelantan.

The researchers used Correlation Analysis to determine the linear relationship between the two variables chosen as the study's objectives. Table 5.1 showed the summary of Correlation Analysis, there was low positive relationship between self-reported behaviour, knowledge of food waste and level of concern regarding food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan.

Table 5.1: Summary of Correlation Analysis

Hypothesis	Significant value	Conclusion	Correlation value	Conclusion
1	0.000	Accepted	0.335	Low positive correlation
2	0.000	Accepted	0.481	Low positive correlation
3	0.000	Accepted	0.387	Low positive correlation

5.4 LIMITATION

Food waste among hospitality students in Universiti Malaysia Kelantan is increasing. The purpose of this study was to investigate relationships between self-reported behaviour and food waste awareness among hospitality students in Universiti Malaysia Kelantan, examine the relationship between knowledge of food waste and food waste awareness among hospitality students in Universiti Malaysia Kelantan also examine the relationship between the level of concern and food waste awareness among hospitality students in University Malaysia Kelantan. But in this research, there are also limitations.

There were a few flaws in this research. To begin with, this study has a fundamental restriction in that the samples were only obtained from hospitality students in the University Malaysia Kelantan district. Everyone among these hospitality students may make purchases daily and throw away their food in different amounts including those among university students. Students typically make their daily food purchases either, buying in bulk for their daily needs. Moreover, throwing away food among hospitality students' University Malaysia Kelantan can show the attitude, value of awareness and intention not to throw away food compared to students from other costs. The data collection among hospitality students in this study has a limitation in that it may not be sufficient in generating a complete picture of overall food waste among hospitality students at the University Malaysia Kelantan.

Furthermore, the limitation encountered in this study is that during the COVID-19 epidemic hit in Malaysia, this study was conducted using questionnaires and

distributed using social media platforms. Through this social media platform, it is difficult for researchers to get respondents because most respondents do not cooperate to make questionnaires that are distributed through social media. This makes it difficult for researchers to collect data at a set time. However, the assessment of the respondents and the level of understanding of the respondents of the questionnaire were different. Some of the respondents were aware of food waste, while others were not. As a result of the various levels of understanding of the issue, the assumptions made by the respondents may not be accurate.

In conclusion, there are much other awareness that can influence students to dispose of food waste in addition to the three independent variables found in this study that is attitudes and values of awareness such as social norms, culture, and others but this study only uses self-reported behaviour, knowledge of food waste and level of concern as this variable due to the limited time to complete this research.

5.5 RECOMMENDATION

The recommendation in this study is to conduct an information-sharing campaign that can be arranged to raise awareness among hospitality students at the University Malaysia Kelantan about waste separation at source and enable them to practice in reused, reduced, and recycled 3Rs. To produce better results, it is important to coordinate the program with public involvement. Hospitality students can do to survey the environmental understanding of waste separation at its source. For example, a target of 5–10 percent reduction in annual waste generation can be set (Verma et al., 2016). Tasks based on the 3Rs should be introduced at the university level, according to him, because students may have a significant role to play in the future. This activity would increase awareness not only of the students but also of the local community.

The next suggestion to give awareness to hospitality students is that the university should promote 'Appreciate Food' and 'Don't Waste' awareness campaigns. This campaign's existence can help raise student awareness of the consequences of food waste to the environment and to themselves. It can also give students how to manage and prepare food well. This campaign can greatly reduce food waste in the country, especially among students.

In addition, it could be recommended that hospitality students change their behaviour. They also must take steps in daily life, and they also have to dispose of leftover food at home, shopping, at work, and in restaurants, cafes, and hotels. They will also influence the behaviour of all other sectors of the food supply chain such as through its consumption patterns. Through the dissemination of realistic ideas and tips to decrease

food loss among hospitality students at University Malaysia Kelantan, consumer groups play a vital role in enhancing consumer comprehension of food waste and driving behaviour improvement.

The next suggestion is essential skills in food management which are in the context of planning, purchasing, and in terms of food storage. Planning includes the preparation and purchase of the menus. Each student needs to compile a menu for a specific period time, for example weekly or monthly and at the same time be able to plan food purchases more systematically. This menu planning influences food purchases. Therefore, a list of food purchases can be made based on a more organized menu that can help facilitate the buying process, avoid over -purchases and will be more economical.

5.6 CONCLUSION

As the conclusion, this research has been carried out to explore about the food waste awareness among hospitality students in University Malaysia Kelantan. Besides, this study helps other researchers to do the research about food waste awareness among hospitality students and can be used as one of their references. The primary goal of this study is to look into the connection between food waste awareness and hospitality students. The influential factors (independent variables) which are self-reported, knowledge of food waste and the level of concern are given the food waste awareness (dependent variables) among hospitality students in University Malaysia Kelantan. As mentioned in Chapter 3, total numbers of 238 questionnaires were distributed to 238 respondents among hospitality students in University Malaysia Kelantan and all of them were valid.

Besides that, in Chapter 4, findings of result from the questionnaires survey that analysed using descriptive and inferential analysis. The data from the questionnaire was analysed with the use of a software application called Statistical Package for the Social Sciences (SPSS). As a result, it can be concluded that there is significant relationship between self-reported behaviour, knowledge and level of concern food waste awareness among hospitality students in University Malaysia Kelantan. The most influential factors are from self-reported behaviour, the Correlation coefficient is 0.335 indicate a low positive correlation. This is because a food waste comes from hospitality students. Furthermore, knowledge about food waste, the Correlation coefficient is 0.481 indicate a low positive correlation between knowledge about food waste and food waste awareness.

Lastly in Chapter 5, about summarization of results based on data analysis. Thus, all the hypothesis (H1, H2, H3) stated are accepted. In addition, limitation and recommendation when carried out this research also includes that can be used for the further studies.

REFERENCE

Abeliotis, K., Lasaridi, K., & Chroni, C. (2014). Attitudes and behaviour of Greek households regarding food waste prevention. *Waste Management & Research, 32*(3), 237-240.

Agunbiade, D. A., & Ogunyinka, P. I. (2013). Effect of Correlation Level on the Use of Auxiliary Variable in Double Sampling for Regression Estimation. *Open Journal of Statistics*, pp. 312-318.

Ajayi, V. O. (2017). Primary Sources of Data and Secondary Sources of Data. Benue State University, Makurdi, pp. 1-6.

Ajzen, I. and Fishbein, M. (1970), "*The prediction of behavior from attitudinal and normative variables*", Journal of Experimental Social Psychology, Vol. 6 No. 4, pp. 466-487.

Alina, S. (2017). Explaining the Consumer Decision-Making Process: Critical Literature Review. *Journal of International Business Research and Marketing* 2(6): 7-14.

Alvi, M. (2016). A Manual for Selecting Sampling Techniques in Research. University of Karachi, Iqra University. https://mpra.ub.uni-muenchen.de/70218/ [11 March 2019].

Alias, Huzaimi. (2019). Types analysis data- descriptive statistics. Manage data effectively. Retrieved from https://huzaimialias.com/menganalisis-data/

Apolonio, R. A. (2020). Behavioral and Demographic Antecedents to Household Food Waste. *International Journal of Humanities, Arts and Social Sciences*, *6*(1), 32-43.

Aramak. (2008, July). The business and cultural acceptance case for trayless dining. *Aramak Higher Education*, 2-7.

Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A Meta-Analytic Review. *British Journal of Social Psychology*, 40, 471-499.

Aschemann-Witzel, J., De Hooge, I., Amani, P., Bech-Larsen, T., & Oostindjer, M. (2015). Consumer-related food waste: causes and potential for action. *Sustainability*, *7*(6), 6457-6477.

Barr, S., 2007. Factors Influencing Environmental Attitudes and Behaviors: A U.K. Case Study of 611 Household Waste Management, Environment and Behavior. doi:10.1177/0013916505283421

Bin Hamad Al-Rabaani, A., & Al-Mekhlafi, S. M. (2009). Attitudes of Sultan Qaboos university students towards some environmental problems and their willingness to take action to reduce them. *Journal of Social Sciences*, *5*(1), 9-15.

Blichfeldt, B. S., Mikkelsen, M., & Gram, M. (2015). When it stops being food: The edibility, ideology, procrastination, objectification and internalization of household food waste. *Food, Culture & Society*, *18*(1), 89-105.

Bong, C. P.-C., Goh, R. K. Y., Lim, J.-S., Ho, W. S., Lee, C.-T., Hashim, H., Takeshi, F. (2017). Towards low carbon society in Iskandar Malaysia: *Implementation and feasibility of community organic waste composting*. *203*, 679-687.

Bortoleto, A.P., Kurisu, K.H., Hanaki, K., 2012. Model development for household waste prevention behaviour. Waste Management 32 (12), 2195–2207

Conner, M. and McMillan, B. (1999). Interaction effects in the Theory of Planned Behaviour: studying cannabis use. British Journal of Social Psychology, 38, 195–222.

Comber and Thieme, 2013 R. Comber, A. Thieme *Designing beyond habit: Opening space for improved recycling and food waste behaviors through processes of persuasion, social influence and aversive affect* Personal and Ubiquitous Computing, 17 (6) (2013), pp. 1197-1210, 10.1007/s00779-012-0587-1

Curzon, L. B. (2003). *Teaching in further education: An outline of principles and practice*. A&C Black.

European Environmental Agency. (2016). What are the sources of food waste in Europe? https://www.eea.europa.eu/media/infographics/wasting-food-1/view

Filimonau, V., & Delysia, A. (2019). Food waste management in hospitality operations: A critical review. *Tourism management*, *71*, 234-245.

Food Agriculture Organization, 2016. Food wastage: Key facts and figures. *Food and Agriculture Organization of the United Nations*.

Gao, Anqi, Zhenyu Tian, Ziyi Wang, Ronald Wennersten, and Qie Sun. "Comparison between the technologies for food waste treatment. Energy Procedia. 2017 May 1;105:3915-21

Gliem, J. A., & Gliem, R. R. (2003). Calculating. Interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practise Conference in Adult, Continuing, and Community Education.

Gokdere, L. U., Chiu, S. L., Keller, K. J., & Vian, J. (2005, March). Lifetime control of electromechanical actuators. In *2005 IEEE Aerospace Conference* (pp. 3523-3531). IEEE.

Graham-Rowe et al., 2014 E. Graham-Rowe, D.C. Jessop, P. Sparks *Identifying motivations and barriers to minimising household food waste* Res. Conserv. Recycl., 84 (2014), pp. 15-23

Gaganpreet, S. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3(7), 749-752.

Gigli, M. (2018). What is demographic segmentation in marketing? Retrieved on April 24, 2019, from https://study.com/academy/lesson/what-is-demographic-segmention-in-marketing-definition

Gilli. (2018). *Behavioural attitudes towards waste prevention and recycling. Ecological economics*, 154, 294-305.

Gustavsson. (2011). Global food losses and food waste, Rome. Available at: http://www.fao.org/docrep/014/mb060e/mb060e.pdf.

Goebel C, Langen N, Blumenthal A, Teitscheid P, Ritter G. 2015. Cutting food waste through cooperation along the food supply chain. Sustainability 7: 1429–1445

Gallo, A.E. 1980. "Consumer Food Waste in the United States", *National Food Review*, Economic Research Service, U.S. Department of Agriculture.

Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). Research methods for business. *Education + Training*.

Heikkilä, L., Reinikainen, A., Katajajuuri, J. M., Silvennoinen, K., & Hartikainen, H. (2016). Elements affecting food waste in the food service sector. *Waste Management*, *56*, 446-453.

Heller & Keoleian, G. A. (2003). *Assessing the sustainability of the US food system*: a life cycle perspective. Agricultural systems, 76(3), 1007-1041.

Johnston, J. M., & Pennypacker, H. S. (2010). *Strategies and tactics of behavioral research*. Routledge.

J lavrakas, Paul . (2008). Self report measure. *Survey research method* (n. 523). Sagepub: Sage.

Jereme, I. A., Siwar, C. & Alam, M. 2014. Waste Recycling in Malaysia: Transition from Developing to Developed Country Waste recycling in Malaysia: Transition from developing to develop country (October 2016).

Karim-Ghani, W.A.W.A., Rusli, I.F., Biak, D.R.A., Idris, A., 2013. An application of the theory of planned behaviour to study the influencing factors of participation in source separation of food waste. Waste Manage. 33, 1276–1281.

Khuong, M. N., & Duyen, H. T. M. (2016). Personal factors affecting consumer purchase decision towards men skin care products—A study in Ho Chi Minh city, Vietnam. *International Journal of Trade, Economics and Finance*, *7*(2), 44-50.

Kumar, M., Talib, S. A., & Ramayah, T. (2013). Business Research Methods. Oxford Fajar/Oxford University Press.

Krejcie, R. V., & Morgan, D. W. (1970). Table for Determining Sample Size from A Given Population. Educational and Psychological Measurement, 30(3), 607-610. doi:10.1177%2F001316447003000308

Martin-Rios, C., Demen-Meier, C., Gössling, S., & Cornuz, C. (2018). Food waste management innovations in the foodservice industry. *Waste management*, *79*, 196-206.

Moller, A. C., Deci, E. L., & Ryan, R. M. (2006). Choice and ego-depletion: The moderating role of autonomy. *Personality and Social Psychology Bulletin*, *32*, 1024-1036.

Marthinsen et al., 2012 J. Marthinsen, P. Sundt, O. Kaysen, K. Kirkevaag *Prevention of food waste in restaurants, hotels, canteens and catering* Nordic Council of Ministers (2012) Available online at http://www.divaportal.org/smash/get/diva2:701203/FULLTEXT01.pdf

McDaniel, C., & Gates, R. (1999). *Investigación de mercados contemporánea* (No. 658.83 M2Y 1999

Malaysia Kini. (2016). Battling food waste. *Malaysia Kini*. Retrieved from http://www.malaysiakini.com?letters?359487

Mensah, I., 2006. *Environmental management practices among hotels in the greater Accra region. International Journal of Hospitality Management*, 25(3), pp.414-431.

Moh, Y. C. & Abd Manaf, L. 2014. Overview of household solid waste recycling policy status and challenges in Malaysia. *Resources, Conservation and Recycling* 82: 50-61. doi: 10.1016/j.resconrec.2013.11.004

Norton, V.P. & Martin, C. (1991). Plate waste of selected food items in a university dining hall. *School Food Service Research Review*, 15(1), 37-39.

Oleskow-szlapka. 2011. *Pro-ecological solutions applied in hotels-examples*. *In Information Technologies in Environmental Engineering*, volume 3. Springer-Verlag Berlin Heidelberg, pp. 431-444.

Papargyropoulou, E., Steinberger, J. K., Wright, N., Lozano, R., Padfield, R., & Ujang, Z. (2019). Patterns and Causes of Food Waste in the Hospitality and Food Service Sector: Food Waste Prevention Insights from Malaysia. *Sustainability*, *11*(21), 6016.

Pirani, & Arafat. 2014. Solid waste management in the hospitality industry: A review. *Journal of Environmental Management*, 43, pp.13-22.

Quested, T.E., Parry, A. D., Easteal, S., & Swannell, R. (2011). Food and drink waste from households in the UK. Nutrition Bulletin, 36(4), 460-467. doi:https://doi.org/10.1111/j.1467-3010.2011. 01924.x

Quested, T. E., Marsh, E., Stunell, D., & Parry, A. D. (2013). Spaghetti soup: The complex world of food waste behaviours. *Resources, Conservation and Recycling*, *79*, 43-51.

Qi, D., & Roe, B. E. (2016). Household food waste: Multivariate regression and principal components analyses of awareness and attitudes among US consumers. *PloS one*, *11*(7), e0159250.

Rahman. 2012. *How "green" are North American hotels? An exploration of low-cost adoption practices*. International Journal of Hospitality Management, 31(30, pp.720-727.

Rosmawati (2011). Types of Anadisis Data- Descriptive Statistics. Retrieved on 11 April 2011, from https://rosma212.wordpress.com/2011/04/18/jenis-analisis-data-statistik-deskriptif/

Russell, S. V., Young, C. W., Unsworth, K. L., & Robinson, C. (2017). Bringing habits and emotions into food waste behaviour. Resources, Conservation and Recycling, 125, 107–114.

Roozen, I.T.M. and P. De Pelsmacker (1998) Attributes of Environmentally Friendly Consumer Behavior, Journal of International Consumer Marketing, vol. 10, nr. 3, 21-41

Secondi L, Principato L, Laureti T. 2015. Household Food Waste Behaviour in EU-27 countries: a multilevel analysis. Food Policy 56: 25–40

Sekaran, U., & Bougie, R. (2010). Research methods for business: *A skill building approach (5th ed.)*. New York, NY: John Wiley & Sons Ltd.

Stefan, V., van Herpen, E., Tudoran, A. A., & Lähteenmäki, L. (2013). Avoiding Food Waste by Romanian Consumers: The Importance of Planning and Shopping Routines. Food Quality and Preference, 28(1), 375–381. doi:https://doi.org/10.1016/j.foodqual.2012.11.001

Stefan, V., van Herpen, E., Tudoran, A. A., & Lähteenmäki, L. (2013). Avoiding Food Waste by Romanian Consumers: The Importance of Planning and Shopping Routines. Food Quality and Preference, 28(1), 375–381. doi:https://doi.org/10.1016/j.foodqual.2012.11.001

Sobian, Azrina. (2020, Mei 15). Educate families on food management to avoid wastage. Berita harian. Retrieved from https://www.bharian.com.my/rencana/komentar/2020/05/688998/mendidik-keluarga-urus-makanan-elak-pembaziran

T. (2013). Business Research Methods. Oxford Fajar/Oxford University Press.

Mukesh, K., Salim, A., & Ramayah, T. (2013). Business Research Methods. Shah Alam: Oxford Fajar Sdn. Bhd.

Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. International Journal of Academic Research in Management (IJARM), pp. 18-27.

Umoh, U. (2019). Types of Research Instruments. Retrieved on April 24, 2019, from https://www.quora.com/what-are-some-types-of-research-instruments

Van Handel, B. (2004). Quantifying food residuals in campus cafeteria. *BioCycle*, 45(3), 4-44.

Van Herpen E., van der Lans I., Holthuysen N., Nijenhuis-de Vries M., Quested T. Comparing wasted apples and oranges: an assessment of methods to measure in-home food waste. Waste Manag. 2019;88:71–84.

Verma, R., Borongan, G., & Memon, M. (2016). Municipal solid waste management in Ho Chi Minh City, Viet Nam, *current practices and future recommendation*. *35*, 127-139.

Williams, R. J., Volberg, R. A., & Stevens, R. M. (2012). *The population prevalence of problem gambling: Methodological influences, standardized rates, jurisdictional differences, and worldwide trends*. Ontario Problem Gambling Research Centre.

Williams, R. J., Volberg, R. A., & Stevens, R. M. (2012). *The population prevalence of problem gambling: Methodological influences, standardized rates, jurisdictional differences, and worldwide trends*. Ontario Problem Gambling Research Centre.

Waste &Resources Action Plan (WRAP) , 2013 WRAP An Overview of Waste in the UK Hospitality and Food Service Sector (2013) Retrieved from https://www.wrap.org.uk/sites/files/wrap/Overview%20of%20Waste%20in%20the620UK%20Hospitality620and%20Food%20Service%20Sector%20FINAL.pdf

Williams, R. J., Volberg, R. A., & Stevens, R. M. (2012). *The population prevalence of problem gambling: Methodological influences, standardized rates, jurisdictional differences, and worldwide trends*. Ontario Problem Gambling Research Centre.

Zimmerman, 2002 B.J. Zimmerman *Becoming a self-regulated learner: An overview* Theory Into Practice, 41 (2) (2002), pp. 64-70, 10.1207/s15430421tip4102_2

APPENDIX

QUESTIONNAIRE

SECTION A: Personal Information

DEMOGRAPHY (PLEASE MARK "√ ")

1. Gender

☐ Male ☐ Female

2. Marital Status

☐ Single ☐ Married ☐ Other

3. Age

☐ 19-20 year old

☐ 21-22 year old

☐ 23-24 year old.

☐ 25- 26 year old

4. Religion Race

☐ Malay ☐ Indian

☐ Chinese ☐ Others

5. Years of Study

☐ Year 1 ☐ Year 3

☐ Year 2 ☐ Year 4

SECTION B

Instruction

Please respond to each statement by circling your answer based on the scale given.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

FOOD WASTE AWARENESS AMONG HOSPITALITY STUDENTS					
University needs to organize awareness campaigns on food waste for the students.	1	2	3	4	5
Food wastage occur every day especially in the hospitality industry.	1	2	3	4	5
Food waste is more common as early as the level of food preparation.	1	2	3	4	5
Food waste will cause an increase in the cost of living of students	1	2	3	4	5
I make several purchase of food items in a week.	1	2	3	4	5

SECTION C

Instruction

Please respond to each statement by circling your answer based on the scale given.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

SELF-REPORTED					
I tried to reduce for the amount of food waste.	1	2	3	4	5
I will always make a list of what I need before shopping.	1	2	3	4	5
I will always plans ahead for the meals.	1	2	3	4	5
I will always check cupboard and fridge before shopping the food.	1	2	3	4	5
I often throw leftover food in the bin.	1	2	3	4	5

KNOWLEDGE					
A large part of food waste derives from cooking more food than you need.	1	2	3	4	5
A large part of food waste is due to promotions and special offer in supermarkets.	1	2	3	4	5
The packing of the food waste thrown in the trash is a bigger environmental problem than food waste.	1	2	3	4	5
I will throwing away food if the expiry date is passed.	1	2	3	4	5
I know the differences in meaning between the label 'use by' and 'best before'.	1	2	3	4	5

LEVEL OF CENCERN					
Food waste is harmful to the environment.	1	2	3	4	5
Food waste can reflect the level difference between individuals who are always wasting and individuals who do not have food.	1	2	3	4	5
Food waste is not problem for the environment as it is natural.	1	2	3	4	5
I think it is better to throw away leftovers than to risk eating unsafe food because it is no longer fresh.	1	2	3	4	5
I think it is better to throw away leftovers than to risk gaining weight.	1	2	3	4	5

H19 TURNITIN

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