

THE STUDY ON FOOD WASTE MANAGEMENT AT THE DINING RESTAURANT IN KOTA BHARU, KELANTAN

 $\mathbf{B}\mathbf{y}$

FATIN NUR HAZWANI BINTI HARON (H18A0122)

NUR SALWANI BINTI BAHRIZAN (H18A0411)

INTAN NUR QAMARIA BINTI MOHD KASIM (H18A0147)

RAZIATUL MADIAH BINTI OSMAN (H18A0717)

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LIST OF ABBREVIATIONS

SWCorp Solid Waste Management and Public Cleaning Company

ABSTRACT

The study is about food waste management at the dining restaurant in Kota Bharu, Kelantan. Nowadays, food waste has become a crucial issue in a community, especially for hospitality industries such as restaurants, hotels, and other industries. Therefore, this research aims to identify the relationship between knowledge on food waste management at the dining restaurant. Secondly, to determine the relationship between attitude on food waste management at the dining restaurant. Lastly, to identify the relationship between practice on food waste management at the dining restaurant. The quantitative method being used is questionnaires. About 384 respondents were administrated among consumers at Kota Bharu, Kelantan. The final result shown that there was a significant relationship between the knowledge, attitude, and also practice on food waste management at the dining restaurant.

Keyword: Food waste management, knowledge, attitude, practice

ABSTRAK

Kajian ini adalah mengenai pengurusan sisa makanan di restoran santapan di Kota Bharu, Kelantan. Pada masa kini, sisa makanan telah menjadi isu penting dalam masyarakat, terutama bagi industri perhotelan seperti restoran, hotel, dan industri lain. Oleh itu, penyelidikan ini bertujuan untuk mengenal pasti hubungan antara pengetahuan mengenai pengurusan sisa makanan di restoran makanan. Kedua, untuk menentukan hubungan antara sikap terhadap pengurusan sisa makanan di restoran santapan. Akhir sekali, untuk mengenal pasti hubungan antara amalan pengurusan sisa makanan di restoran santapan. Kaedah kuantitatif yang digunakan adalah soal selidik. Kira-kira 384 responden ditadbir di kalangan pengguna di Kota Bharu, Kelantan. Hasil akhir menunjukkan bahawa terdapat hubungan yang signifikan antara pengetahuan, sikap, dan juga amalan pengurusan sisa makanan di restoran.

Kata kunci: Penguru<mark>san sisa ma</mark>kanan, pengetahuan, sikap, ama<mark>lan</mark>

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In this research, chapter one contains the background of study, problem statement, research objectives, research questions, the significance of study, definitions of terms and also a short summary. All the concepts, terms and ideas related to the topic and issue have been described in the background of the study. This research project aims to investigate the study on food waste at the dining restaurant in Kota Bharu, Kelantan.

1.2 BACKGROUND OF STUDY

Hospitality industry is an essential service that provides lodging and food services for travellers. These hospitality industries also refer to a service industry that includes, restaurant, entertainment, hotel, sporting events, cruises and other related services. There are

many sectors within the hospitality industries and one of them is the food & beverage sector which includes restaurants. 52% of the consumers prefer to spend money on an experience, such as a restaurant (Anthony, 2019). Restaurants offer consumers with food and beverages services, with the food either being consumed in the restaurant, or taken out for consumption. This segment of the hospitality industries comprises casual dining restaurants, fast food restaurants, and other restaurant styles.

Food waste should be taken more seriously, as critical as food safety and hygiene. According to Gunders (2012), about 22 to 33 billion pounds of food waste each year and 18 percent of the food waste comes from the restaurants that were generated in US restaurants. Food waste often occurs due to the excess of food that has not been eaten which causes food to be discarded without thinking about the effects that will occur from the waste. Current research conducted in the USA in 2010, concludes that more than 34 million tons of food waste have been made (USEPA, 2010). This indicates how large the amount of food waste that occurs due to the various factors influencing uncontrolled food waste.

Due to standard requirements, if the food is not suitable in the form of its shape or also appearance, these foods products are considered wasted and being rejected (Gustavsson, 2011). Food waste can be produced from many sources such as restaurants, farms, supermarkets, institutions and households, such as food production and processing facilities. This food waste will cause tremendous losses to the nation as the cost of food waste requires high costs to cover it. Therefore, food waste only creates a detrimental impact that can contribute to multiple food waste problems.

In Malaysia, there are 16,650 tons of leftover food thrown away every day (Sobian 2019). 23 percent of the food waste occurs from the restaurants (Sobian, 2019). This research

focuses on the excess of food in a restaurant. Thus, the purpose of the research is to study on food waste management at the casual dining restaurant in Kota Bharu, Kelantan.

1.3 PROBLEM STATEMENT

Food waste among the people of this country is increasingly troubling. The food waste is contributed by consumers regardless of age or gender. Malaysian people tend to throw away food and waste food. It is estimated that Malaysians waste at least 16,688 metric tonnes of food. An estimated \$162 billion is wasted annually on food produced in restaurants (U.S. Department of Agriculture, 2017). Solid Waste Management and Public Cleaning Company (SWCorp) estimated that 16 of the twin towers will definitely be packed with a complete volume of food waste by 2020 (Zaki, 2019).

This study was conducted in Kota Bharu, Kelantan to study on food waste management at the dining restaurant, which is about knowledge, attitude and practice. At the end of the research hoped that there are further strategies for enhancing food waste and reducing it.

According to Mukama (2016), poor knowledge and awareness regarding solid waste management. This is because many consumers, 36% of people, confuse the 'best before' and 'use-by dates' confusion which could lead to the food being disposed of unnecessarily FSA

(2008). This shows the knowledge of food can be eaten or not still weak due to lack of knowledge.

Marangon, Triona, Tempesta, and Vecchiato (2014), claimed that people's attitude and individual behavior may influence the amount of food waste. In this perspective, food waste causes an attitude aspect dominating food waste, as consumers who consider food waste as being a big problem tends towards lowering their waste.

For the practice, most people in Ghana see waste to be collected and dumped in the landfill site so therefore do not regard it as a resource while other countries such as Sweden are making money out of waste generated. Their perception is causing a serious challenge to be waste management companies. Instead of waste management companies to deal with the control of waste generations, storage, collection, transportation and processing of waste into useful resources which will positively affect public health, economy and environment, they only collect the waste and dump it to the landfills, making them to be waste collection companies. This means that, with the right mindset on solid waste disposal, there will be a health environment as well as income generation from waste.

There is the mindset that waste generated must be collected by the government and therefore have contracted waste management companies to do so. This mindset contributes to the reckless attitude of littering in the coastal areas. They have a saying that goes, if we do not dump waste indiscriminately, waste management companies would have no job to do.

According to the Ministry of Housing and Local Government Malaysia (2017), restaurant food waste generates over 941,608 tons per year. An interview conducted by The Star Online reporter cited a restaurant operator who estimated that 10% to 30% of food is

wasted on average daily in Malaysia, and most consumers are not aware of the amount of the food that they waste or even concerned about it. Most of them responded that they could finish it when they were asked why they had not finished the food and why the people are very concerned because the food was paid for more than half of consumers said that they were not worried about leaving food at the end of their meal (Jessica, 2013).

One third of edible food is wasted from consumers globally, much of this is wasted in restaurants (Gustavsson, 2011). This shows many consumers enjoy food at the restaurant, but not all of them clear their plate. They pointed out that nearly 1/3 of the world's food is wasted by people, and over 820 million people suffer from hunger. This means every nine people in the world does not have enough food to eat (F.A.O, 2019). Supposedly the wasted food can be given to people in need but it is wasted and will cause losses.

The research will therefore look at knowledge, attitudes and practices of food waste management at the dining restaurant in Kota Bharu, Kelantan. Based on Kota Bharu, Malaysia Metro Area Population 1950-2021, the current area population of Kota Bharu in 2021 is 352, 000, a 1.15 % increase from 2020. This show Kota Bharu has the most population in the state of Kelantan.

1.4 RESEARCH QUESTIONS

There are several research questions in this study, it includes:

- 1. What is the relationship between knowledge on food waste management at the dining restaurant in Kota Bharu, Kelantan?
- 2. What is the relationship between attitude on food waste management at the dining restaurant in Kota Bharu, Kelantan?
- 3. What is the relationship between practice on food waste management at the dining restaurant in Kota Bharu, Kelantan?

1.5 RESEARCH OBJECTIVES

Specifically, this research aims to achieve the following objectives:

- To identify the relationship between knowledge on food waste management at the dining restaurant in Kota Bharu, Kelantan
- 2. To identify the relationship between attitude on food waste management at the dining restaurant in Kota Bharu, Kelantan
- To identify the relationship between practice on food waste management at the dining restaurant in Kota Bharu, Kelantan

1.6 SIGNIFICANT OF STUDY

This study will give benefit to:

1.6.1 Restaurant Entrepreneurs

This study would give advantages to the restaurant entrepreneurs in reducing the food waste in their dining restaurant. Hope throughout this study, the entrepreneurs know how to handle and deal with consumers to reduce the food waste.

1.6.2 Consumers

This study was conducted to give awareness to consumers about food waste that has been wasted in restaurants. The consumer should appreciate the food that they eat in the fine dining restaurant. If food waste is successfully reduced by the consumer, they can help the restaurant entrepreneurs to save more cost in handling this problem.

1.6.3 Hospitality Industries

The food and beverages industry could get benefit in this study if control over food waste is practiced. A systematic food waste management by restaurants will help to improve the reputation of the food and beverage sector.

1.6.4 Researchers

The study on food waste management at the dining restaurant brings advantages to the future researchers and also academics. They can use this study as a reference to guide them for their research as well.

1.7 **DEFINITION OF TERMS**

1.7.1 Food Waste

Food waste will be described, for clarity in this paper, as food products (including drinks) originally intended for human feeding and not ultimately sold for human consumption by the food business under review, and as uneaten food pieces (Wolley, 2017).

1.7.2 Knowledge

Knowledge is a collection of understandings, and it is also one's information and of "science". It is also an imagination of power and one's way of perceiving. The knowledge is a pattern that is considered safe but it does not always be advantageous and does not mean this behaviour automatically will be followed by others.

1.7.3 Attitude

Attitude may be a way of being, a position. This is an intermediate variable between things and the response to the current situation. It helps explain that among the possible practices for a subject submitted to a stimulus, that subject adopts one practice and not another. Attitudes are not directly observable as are practices, thus it's a decent idea to assess them. It is interesting to notice that numerous studies have often shown a coffee and sometimes no connection between attitude and practices.

1.7.4 Practice

Practices or behaviours are the observable actions of a personal in response to a stimulus. This is something that deals with the concrete, with actions. For practices associated with food waste, one collects information on prevention of food waste or food loss, the practice of food waste, food waste management practices, food waste activities, and others that is related.

1.8 SUMMARY

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This study is to discuss and explore the food waste management at the dining restaurant in Kota Bharu, Kelantan. The reader will get a better picture of understanding the food waste management at the dining restaurant. This chapter also highlighted the true purpose of this study through research objectives and research questions.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This study intends to determine the food waste management at the dining restaurant in Kota Bharu, Kelantan. Since the main focus of this study is on food waste management, the first section of this chapter will explain food waste management at the dining restaurant in Kota Bharu, Kelantan. The literature review, theories, conceptual structure (diagram & discussion), and food waste overview are included in this chapter.

2.2 INDEPENDENT VARIABLES

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An Independent variable is a variable that is adjusted or operated in a statistical experiment that analyses the effect on the dependent variable. It is also known as a component or variable in prediction.

2.2.1 KNOWLEDGE

Food waste occurs every day in nearly every home, however, this is often a fragile matter because it's always been at some point an interpretation about a person or group's style. Before it finally reaches the buyer, food goes through plenty of processes. Disposal is nearly bound to happen at each step of the procedure (Gilli, et. al., 2018). The highest percentage of waste, in keeping with the available literature, is an astonishing percentage and rate at the amount of the consumer (Heller & Keoleian, 2003; Stefan, et. al., 2013). With various degrees of household value, the amount of discarded food thrown away is dependent on multiple interrelated reasons. Economics-Cultural, social, and economic-demographic eating behavior profiles or schooling in food production could have a substantial effect on the amount of food disposal of. But even with the composition of garbage in Malaysia, the research specifies a significant volume of food disposal in solid household waste; almost all people still do not see the association between environmental destruction as wastefulness of land.

According to Uwakwe et al., (2015) the level of consumer knowledge towards proper waste management systems includes familiarity of what's a waste management system, how waste management can boast the hygienic and quality of food, and understanding of its

impact on consumer safety and health. The implications of ineffective and effective waste management for human and environmental health are different. The ineffectiveness will result in harm, which is contrary to effects that may benefit both human and environmental health. Poor knowledge and awareness regarding solid waste management lead to the continuation of the waste management problem. Asmati (2011) indicated that by inspiring and educating consumers, hope to improve the food waste management at the dining restaurant. This is because, without any knowledge on how to manage waste, consumers will still dispose of the material or product into rivers or drains that will have a bad impact on health.

2.2.2 ATTITUDE

Attitude refers to the evaluation of the act of disposing of food by a person (Ajzen, 2002). In general, the majority of consumers have a negative attitude towards food waste (Abeliotis et al., 2014). The most common explanation for customers to encounter these adverse effects is that they perceive food waste to be an unwanted loss of money (Abeliotis, Lasaridi & Chroa, 2014). In addition, consumers find wasting food a detrimental trait to a lesser degree due to their environment. In addition, aspects like attitudes within the consumer are an important element towards the proper management of food waste (Adeolu, 2014). The development of an attitude that helps in solving the matter regarding environmental issues is crucial among the consumer. Attitudes of consumers towards the effectiveness of waste management are reported to be related to the amount of information.

This is often because, without an attitude, consumers cannot practice an effective waste management system within the restaurants. Attitudes of each individual don't change or increase to desirable attitudes if the education fails to strengthen the knowledge level. It's important to make sure that individuals, particularly food handlers, are not only aware but must understand the importance of proper waste management that motivates them to practice it. Understanding the matter that will rise thanks to improper waste management systems, will assist in more awareness on the waste management issues. Attitudes that support knowledge and awareness, would last long where good attitudes will affect the development within the waste management practice (Hidayat, 2015).

2.2.3 PRACTICE

Practice is an action taken by people parallel with the rise of information and attitudes. Therefore, waste management practice is improved with improvement within the knowledge and attitude regarding proper waste management. Extensive awareness of the negative effects of poor handling of waste will motivate individuals to apply the effective practice of waste management that is good for environmental and human health (Audu, 2013). The knowledge of food handlers on the requirement to wash their hands after handling any material before continuing his work is one among the instances that shows the relation between knowledge and practice. The food handler that already had experience within the foodservice sector can contribute to a stronger knowledge, attitude, and practice among workers (Hakim, 2013).

Usually, knowledgeable consumers will realize that waste can only be disposed of at the dumping place provided by the government. Pirani & Arafart (2014) stated that 44% of hotels were fitted with posters to allow workers to reduce food waste. On the other hand, it is quite interesting that signs with related material can be seen in hotel kitchens, leading visitors to conscientious behavior and food waste knowledge. In addition, 67% of hotels restaurant compost or intend to recycle their surplus food, while 47% of hotels restaurants contribute both surplus and unused food (Priefer et al., 2016).

2.3 DEPENDENT VARIABLE

The dependent variable is to measure in the experiment and what is affected during the experiment.

2.3.1 FOOD WASTE AT THE DINING RESTAURANT

Food waste is an effect on social, economic, and environmental. It threatens global food security. Food waste occurs in the slightest degree stages of the food supply chain, with approximately 35% occurring on consumer plates. Consumers are to blame for the biggest share of scraps within the sequence from production to consumption in developed countries. According to Parfitt et al., (2015) show the role of consumers as having great potential for reducing waste material in developed countries. As stated by Gustavson et al.,

(2018) distinguished the foremost important factor of scraps in developing countries is consumer behavior. As stated by Silvennoinen et al., (2015) indicated that the most reason for refuse at the restaurant is not the stage of food preparation, but the purchasers who eat in restaurants and therefore the service processes. As more people are far from home and there's a growing demand for food prepared and served outside the house all around the world, reducing scraps has become a crucial thanks to achieving sustainability in the restaurant (Godfray, 2010).

The challenge of scraps in restaurants is of particular concern for sustainability, as it has undermined the environmental sustainability of the worldwide foodservice supply sector. Increased household incomes and too many choices drive consumers to shop for an excessive amount of food, leading to edible food being wasted (Stuart, 2011). An oversized proportion of restaurant waste is thanks to the consumer, which highlights a crucial opportunity to alter consumer behavior (Tai, 2011). One in all the most drivers of waste products at the dining restaurant are irresponsible consumer behavior. Since consumers only throw away a little amount of food, they are doing not need to worry about it and don't bother to understand anything further (Sakaguchi, 2018). In general, consumers feel that wasting food is an inevitable part of consumption. Producers and marketers induce consumers to create impulse purchases by advocating discounts or promotional marketing events, thereby influencing consumers' purchase decisions, resulting in food waste.

The problem of reducing waste products at dining restaurants has attracted the eye of researchers. Many campaigns have been developed and launched at the dining restaurant to scale back the amount of plate waste all around the world. For instance, in 2014, the European Union proposed a "Year of Fighting Food Waste", Italy proposed the Milan Protocol to have

global waste matter and the world organization announced its latest Sustainable Development Goal (SDG) with a particular target of reducing global retail- and consumer-level waste product and food losses within the production and supply chain by half in 2030 (Huang, 2020). In France, restaurants are required by law to produce take-away bags for customers (Chazan, 2016). Shove (1999) stated that the planning and size of trash cans can even be indicative of consumer scraps behavior, and restaurants can reduce garbage by providing customers with shopping bags (Lala, 2017). As mentioned by Jeffery et al., (2020) reported that mandatory fines can decrease the number of plate waste and alter consumers' eating habits in restaurants. Kuo and Shih (2016) used education and coercion methods to review the phenomenon of waste products at school cafeterias by gender. Overall, strategies to cut back scraps include raising ethical awareness, providing bags to consumers, changing plate sizes, delivering regulatory orders, offering preparation, and employing methods of intimidation (Lala, 2017). Although education campaigns on waste matter might not achieve success within the short term, they may influence consumer behavior in the future (Matute, 2020).

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2.4 HYPOTHESES

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The literature review revealed that the independent variables, such as knowledge, attitude, and practice. Based on the literature review that had been mentioned and the research question, the hypothesis of this study summarized in the following manner:

- H1a There is a relationship between knowledge and food waste at the dining restaurant in Kota Bharu, Kelantan.
- 2. H1b There is a relationship between attitude and food waste at the dining restaurant in Kota Bharu, Kelantan.
- 3. H1c There is a relationship between practice and food waste at the dining restaurant in Kota Bharu, Kelantan.

2.5 CONCEPTUAL FRAMEWORK

Based on the past literature review, the researchers have proposed a framework that was adopted to study waste management at the dining restaurant in Kota Bharu, Kelantan. Hence, the framework is shown below:

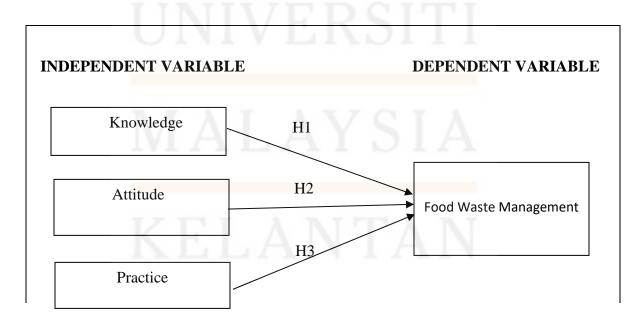


Table 2.1: Conceptual Framework

This framework is adapted from Norhayati et al., (2018)

Figure 2.1 indicates the independent variables (IV) and dependent variable (DV) of this research. There were three Independent Variables (IV) which are knowledge, attitude, and practice while Dependent Variable (DV) is the food waste at the dining restaurant in Kota Bharu, Kelantan. This figure shows the relationship between knowledge, attitude, and practice with food waste at the dining restaurant in Kota Bharu, Kelantan.

2.6 SUMMARY

In this chapter, the dependent variable that the researchers have chosen is food waste management at the dining restaurant in Kota Bharu, Kelantan. The three independent variables that are included in the research are knowledge, attitude, and practice. From this study, customers will be affected by the possibility of one or all of the independent variables. The following chapter addresses the types of approaches used by the researchers to investigate the study's outcome. Thus, to achieve better results for the analysis, the researchers can narrow down the goal of the study.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

The methodology is about research processes. In this section, the research methods used to complete the research are described. To answer the research objectives and questions, the researchers explain how the relevant data and information were collected, presented, and analyzed. To a large extent, a research strategy refers to the population's purpose in the context of establishing the methods of research. The importance of decisions that will be taken from the study is one of the things that will impact the research process. Mukesh, Salim, & Ramayah, 2013 has proven that the main components of the research methodology are the research methodology, data collection process, sampling plan, fieldwork plan, and study plan.

In short, this section is to clarify the approach that is used for this research. This chapter will explain the entire process involved in conducting this study session.

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3.2 RESEARCH DESIGN

The objective is to give the appropriate guidelines to the researchers to achieve the research objectives or test the hypothesis that was made (Sileyew, 2019). In research design, the sources channel by the data has to be certified that it can fulfill the requirement for the research questions (Mukesh, Salim, & Ramayah, 2012). So, it is encouraging that researchers should start doing some thorough research, to find the essential pieces to answer the research questions. Without a well-designed procedure, the chances of the study or research for successful completion would be small (Balakumar, Inamdar, & Jagadesh, 2013).

This research is using the methods of quantitative in descriptive research. Descriptive research is used to explain a situation and its trait (Nassaji, 2015). Hence, the researcher wants to find out about food waste at the dining restaurant at Kota Bharu, Kelantan. Descriptive research design and methods observation and survey questionnaire was used to get information related to the research topic. A descriptive research study is aimed to describe a method for information is going (Majid, 1990). By applying descriptive research can proficiently design a pre-structured questionnaire with both open ended and close ended questions.

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3.3 SAMPLING TECHNIQUES

The method of selecting a number of people for the sample which the individuals represent the large number of groups from which they have were selected are:

3.3.1 Population

According to Courtney Taylor (2019), in statistics, describing the topic of a specific study, researchers have used the term population, anything or those who are the focus of statistical observation. The population is also measured in small or large numbers and in many individuals within a given group interacting with the world around them. This allows for a conclusion to be made by the statistician regarding the characteristics of the study subject.

A population is a group of individual units with some commonality. According to the Macrotrends, 2021 the amount of population in Kota Bharu is around 352,000 people. So, the target population of this research is 352,000 people The area that is being covered for this research is at Kota Bharu, Kelantan. This is because the target is focusing on the consumer who is staying here. In this research, to examine the food waste at the dining restaurant at Kota Bharu, Kelantan, the researchers also used the method through a survey form. This is because it can less expensive and time consuming. Apart from that, it can help in determining the validity of individual perspectives and experiences. Through this method, the researchers have distributed the questionnaire online to Kota Bharu consumers via WhatsApp and sharing the google forms link in all the group is one of the ways to give them the questionnaire so they can answer it. Through the

dissemination of this questionnaire, it will provide reliable information for use and fulfill the objectives of the study.

3.4 SAMPLE SIZE

There are usually too many people in the population to understand quickly, so the investigations are often limited to one or two samples taken from them. Most of the data on a certain population parameter was selected for the samples, but the connection between the sample and the population must be like the sample population is correctly implied.

N	S	N	S	N	n Populati 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	340
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	35
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	36-
50	44	180	123	420	201	1400	302	8000	36
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	37
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	38.
95	76	270	159	750	254	2600	335	1000000	38-

Table 3.1: Sample size (Krejcie & Morgan, 1970)

The researchers have chosen the respondents among Kota Bharu consumers. Overall, there are about 352,000 people. Based on the table 3.1, Krejcie & Morgan said that the sample size of 352,000 people needs 384 respondents as the sample size.

3.5 SAMPLING METHOD

KELANTAN

The process of choosing a sufficient number of elements from the population is the method of sampling (Kumar, 2013). In the sampling process, some parts of the population are chosen by the researchers as the subjects of the survey. The sampling method can be divided into two groups, which are probability sampling and non-probability sampling. The researchers therefore used convenient sampling to analyze the results, which is probably the most common of all sampling methods in order to conveniently and cost-effectively cover the large number of surveys. The samples are selected because they are open to the researchers, which means that it involves the selection of any available set of respondents that the researcher can use conveniently.

3.6 DATA COLLECTION

Data collection might come from the primary. Main data analysis helps the research directly from the real source for the study such as consumers that are involved in this research. The primary data collected from the questionnaire.

Data collection is the effective method of assembling and calculating the data information from an assortment of sources in order to get detailed and reliable data. The collection of data helps a person or organization to answer similar questions, analyze outcomes and make assumptions on potential probabilities and trends. The survey form, questionnaires, Google Form, and interview data collection can be used to collect data.

From this analysis, the survey is not sufficient, as it is difficult to reach the respondents which are consumers of food waste at the dining restaurant in Kota Bharu, Kelantan. The

researchers were able to share Google Form and get respondents from all over Malaysia due to the rapid growth of social media.

3.7 RESEARCH INSTRUMENT

Analysis instruments are the tools used by the researcher to gather and structure information while the research is performed, thus translating it into useful information. The research instrument is used as the basis for collecting the data that is required to complete the study goals. To carry out your study, there is a range of potential approaches.

Questionnaires will be used as the knowledge collection tool. Using a questionnaire can generate a large amount of knowledge, according to Ackroyd & Hughes (1981), which can be gathered in a short time and cost-effective way from a large number of people in Kota Bharu, Kelantan. The questionnaire will be separated into three sections which might be sections A, B, and C (refer to appendix). Questionnaires could be provided to the respondents in a dual language which is English and Malay. After all, questionnaires are answered by the respondent, the data will be collected. Researchers will collect personally to secure the information obtained.

It contains the demographic data of the respondents in section A, such as gender, religion, age, income range and occupation while section B consists of the questions that related to the independent variable. In section C, there are also questions related to dependent variables. In order to get information about the food waste at the restaurant among the consumer, a Likert Scale approach is used to identify the level of agreement. The Likert Scale is usually used to see the

degree of agreement or disagreement on each statement in the questionnaire. Likert Scale with five points is chosen for the questionnaire. The measurements of the 5-Likert Scale are ranging from 1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly agree. The five points are:

1	2	3	4	5
Strongly Disagree	Disagree	Don't know	Agree	Strongly Agree

Table 3.2: The Five-point Likert Scale

Section	Factors	Contents
A	Respondent's Demographic	i. Gender
	Information	ii. Age
		iii. Religion
		iv. Income
	11111111	v. Occupation
В	Independent Variables (IV)	i. Knowledge

		ii. Attitude
		iii. Practice
С	Dependent Variables (DV)	Food Waste Management

3.8 DATA ANALYSIS

This section aims to describe the primary data that will be used in the research study. The purpose of this section is to answer the objectives of the study and to check the speculation of the research. The data of the research will be analyzed and the results of statistical analysis will be shown in this chapter. All the findings of the research study will be described by table, pie, and chart. The three main analyses that will be used in this research study are such as descriptive analysis, reliability test, and Pearson Correlation.

3.8.1 Descriptive Analysis

Descriptive analysis refers to the collation, overview and calculation of a large number of data contained in the survey sample (Fisher, M. J., & Marshall, A. P, 2009). It is usually expressed

by a graphic method, which is easy to understand and can find some regularities of the distribution and trend of the quality characteristic value, which is convenient for taking measures. It used to summarize and characterize data, usually the basis for further quantitative analysis of data, or an effective supplement to inferential statistical methods (Fisher, M. J., & Marshall, A. P, 2009).

3.8.2 Reliability Test

Reliability test is the closer result when researchers use Cronbach's Alpha, which means the higher consistency of the reliability. In the reliability test, there are three steps, first is conducting a pilot test. Second, analyses the alpha value of the pilot test result and the last step is seeing the inter-correlated items. The reliability test was conducted to measure internal accuracy, such as the calculation of the reliability instrument. When the questionnaire is generated using several Likert scale statements, it is most widely used by researchers and thus to assess if the scale is accurate or not (Priya and Shruti, 2015).

Cronbach's Alpha	Internal Consistency
$0.9 \le \alpha$	Excellent
$0.8 \le \alpha < 0.9$	Good
$0.7 \le \alpha < 0.8$	Acceptable
$0.6 \le \alpha < 0.7$	Questionable
$0.5 \le \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Table 3.3: Cronbach's Alpha Coefficient Value

3.8.3 Inferential Analysis (Pearson Correlation)

The Pearson Correlation is used to analyze the collected data. Pearson correlation is often defined as a kind of coefficient of correlation that represents the connection between two variables which are independent and dependent variables that are measured on an equivalent interval or ratio scale. It hands particular facts about the vastness of the association or correlation, also because of the regulation of the interrelation.

If there is an interrelationship set up, it is regulated upon the numerical values quantified, this will be either positive or negative. Direct interrelationship exists if one variable enlarges simultaneously with the opposite, the lofty values of one variable linked to the lofty numerical values of the contrasting. An indirect correlation exists if one variable lessens when the opposite increases, the lofty numerical values of one variable relies on the low numerical values of the contrasted.

3.9 SUMMARY

Through this chapter, the researchers are clearer on the study as they decide the research design, sampling techniques, sample size, sampling method, data collection, research instrument, and data analysis. The respondents easily understood and answered the questions that were addressed. Inside the questionnaire, the Likert Scale was used to determine whether respondents

agree or disagree with the statements regarding determining the study on food waste at the dining restaurant in Kota Bharu, Kelantan.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter will discuss the results and findings from the analysis which was conducted on the data collected from the questionnaires. Total numbers of 384 questionnaires were distributed to 384 respondents among consumers at the fine dining restaurant in Kota Bharu, Kelantan area and all of them were valid. The data collected from the questionnaires analyze using descriptive and inferential analysis. Data obtained from the questionnaire has been evaluated by a software program using Statistical Package for the Social Science (SPSS). Before conducting the actual questionnaire, a pilot test was done on a total number of 30 respondents, and a reliability test used to obtain the validity of the variables.

4.2 RESULTS OF RELIABILITY TEST

Reliability analysis was used to measure the reliability of the questionnaire. The pilot test has been done with 30 respondents before the questionnaire was distributed to 384 respondents through an online survey method.

Reliability analysis is an indication of stability and consistency without bias and helped assess the "goodness" of the measure (Sekaran, 2003). The reliability analysis evaluated by using Cronbach's alpha coefficient value. It is a measure of the internal consistency of a study that expresses the number between 0 and 1. Therefore, when the value of alpha is increased, it means the terms in a survey are more reliable to each other (Tavakol & Dennick, 2011). From the value result, researchers are able to define and determine whether our questionnaire was valid, reliable, and understood by the respondents.

Cronbach's Alpha	Internal Consistency
$0.9 \le \alpha$	Excellent
$0.8 \le \alpha < 0.9$	Good
$0.7 \le \alpha < 0.8$	Acceptable
$0.6 \le \alpha < 0.7$	Questionable
$0.5 \le \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Table 4.1: Cronbach's Alpha Coefficient Value

From table 4.1 shows, it can observe that Cronbach's alpha is closer to 1, internal consistency considered excellent meaning the more reliability of the items in a survey. If Cronbach's alpha is less than 0.5, it will be considered as unacceptable internal consistency. Cronbach's alpha is 0.7 and above was an acceptable and good reliability coefficient.

For the pilot study, this research provided 30 questionnaires to the respondents among street food vendors along the roadside to Kota Bharu. A pilot study is a strategy used to test the questionnaire using a smaller sample compared to the planned sample size. The aim is to carry out a pilot study to get valuable feedback hence the researchers can revise and improve their papers before publication. The questionnaire answer by the respondent must be clarifying according to assistance that is handled at that time.

Variable	Number of Items	Cronbach's Alph <mark>a</mark>	Strength of
		Coefficient	Association
Knowledge	5	0.837	Good
Attitude	4	0.805	Good
Practice	4	0.737	Acceptable
Food Waste Management	5	0.780	Acceptable

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

Table 4.2 showed the overall value of Cronbach's Alpha Coefficient for the independent and dependent variables in this study. Therefore, the result shown is reliable and it can be accepted in this study.

There were five questions used in measuring the knowledge and food waste management at the dining restaurant in Kota Bharu, Kelantan. Table 4.2 showed Cronbach's Alpha result for this section's question was 0.837 which was good. Thus, the coefficients obtained for the questions in the knowledge variable are reliable.

Next, there were four questions in measuring the attitude and food waste management at the dining restaurant in Kota Bharu, Kelantan. The result of Cronbach's Alpha for this section was 0.805 which indicated as good. Thus, the coefficients obtained for the questions in the attitude variable were reliable.

Furthermore, in measuring the practice variable that affects food waste management at the dining restaurant in Kota Bharu, there are four questions that have been used. The Cronbach's Alpha result for this section.

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4.3 DEMOGRAPHIC CHARACTERISTIC RESPONDENT

MALAYSIA

The analysis of this study included the frequency, percentage and cumulative percentage. The data from the Section A of the questionnaire included questions from different demographic variables of respondents such as gender, age, religion, salary and occupation. The respondent's demographic profile was presented in a form of table and pie chart.

4.3.1 GENDER

Gender	Frequency	Percentage (%)	Cumulative
			Percentage (%)
Male	121	31.5%	31.5%
Female	263	68.5%	100%
Total	384	100%	

Table 4.3: Gender of Respondents

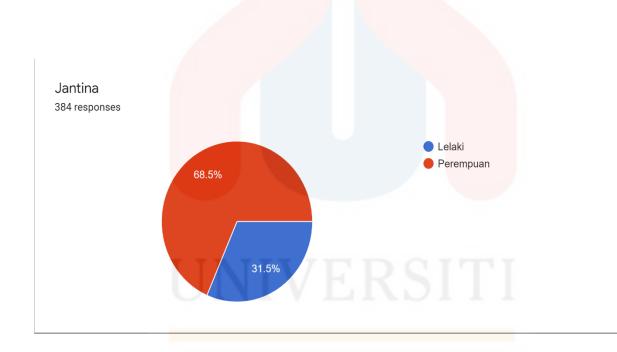


Figure 4.1: The Percentage of Gender

Table 4.3 and Figure 4.1 showed the respondents by gender. The total number of respondents for male is 121 respondents while the number of females was 263 respondents. Out of 384 respondents, 31.5 percent of total respondents were male and the remaining 68.5 percent were female of respondents who were involved in this study. Based on the pie chart above, female is the highest percent than male which is 68.5 with (n=263)

4.3.2 AGE

Age	Frequency	Percentage (%)	Cumulative
			Percentage (%)
20 years old and under	46	12.0	12.0
21 – 30 years old	273	71.1	83.1
31 – 40 years old	46	12.0	95.1
41 – 50 years old	11	2.9	97.9
51 years old and above	8	2.1	100.0
Total	384	100.0	

Table 4.4: Age of Respondents

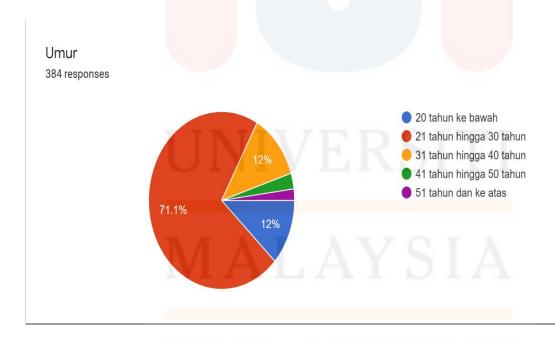


Figure 4.2: The Percentage of Age

Table 4.4 and Figure 4.2 showed the total respondents by age. There were 384 respondents which were consisted of 20 years old and under which is 46 respondents and 12 percent, 21 - 30 years old with 273 respondents and 71.1 percent, 31 - 40 years old which is 46 respondents and 12 percent, 41 - 50 years old which is 11 respondents and 2.9 percent and 51 years old and above which is 8 respondents and 2.1 percent had responded to the questionnaire. From the pie chart, the highest number of respondents were from the age 21 – 30 years old (n=273) while the lowest respondents were from the age 51 years old and above which is 9 percent only (n=8).

4.3.3 RELIGION

Religion	Frequency	Percentage (%)	Cumulative
			Percentage (%)
Malay	308	80.2	80.2
Chinese	34	8.9	89.1
India	23	6.0	95.1
Others	19	4.9	100.0
Total	384	100.0	

Table 4.5: Religion of Respondents



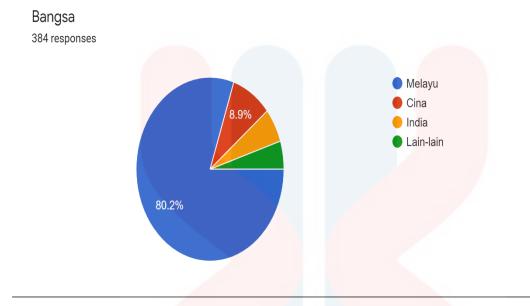


Figure 4.3: The Percentage of Religion

Table 4.5 and Figure 4.3 showed the total respondents by race. There were 384 respondents which were consisted of Malay which is 308 respondents and 80.2 percent, Chinese 34 with respondents and 8.9 percent. For Indian which is 23 respondents and 6.0 percent and for others which is only 19 respondents and 4.9 had responded to the questionnaire. So, from pie chart, the number of respondents from Malay is the highest which is (n=308). While the lowest is from others race which is (n=19)

4.3.4 SALARY

Salary	Frequency	Percentage (%)	Cumulative
			Percentage (%)

Under RM1000	245	63.8	63.8
RM1000 – RM2999	91	23.7	87.5
RM3000 – RM4999	31	8.1	95.6
RM5000 and above	17	4.4	100.0
Total	384	100.0	

Table 4.6: Salary of Respondents

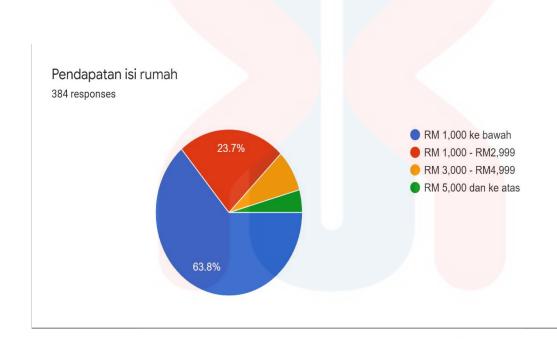


Figure 4.4: The Percentage of Salary

Table 4.6 and Figure 4.4 showed the total respondents by salary. There were 384 respondents which were consisted of RM 1000 and under which is 245 respondents with 63.8 percent, RM 1000 – RM 2999 with 91 respondents with 23.7 percent. For RM 3000 – RM 4999 which is 31 respondents with 8.1 percent meanwhile for RM 500 and above, which is 17 of respondents with 44.4 percent only had responded to the questionnaire. It can be seen from the pie chart, the highest respondents of salary is RM 1000 and under which is (n=245) while the lowest is from RM 5000 and above (n=17).

4.3.5 OCCUPATION

Occupation	Frequency	Percentage (%)	Cumulative
			Percentage (%)
Student	264	68.8	68.8
Self Employed	49	12.8	81.5
Government / Private	44	11.5	93.0
Not Working	27	7.0	100.0
Total	384	100.0	

Table 4.7: Occupation of Respondent

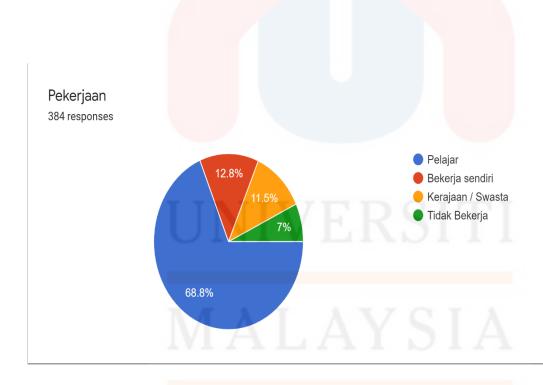


Figure 4.5: The Percentage of Occupation

Table 4.7 and Figure 4.5 showed the total respondents by occupation. There were 384 respondents which were consisted of students which is 264 respondents and 68.8 percent had

responded to the questionnaire. For self-employed which is 49 respondents with 12.8 percent meanwhile for government or private there are 44 respondents with 11.5 percent. The respondents who do not working is less than government or private which is only 27 respondents, 7 percent.

4.4 RESULTS OF DESCRIPTIVE ANALYSIS

Descriptive analysis used to describe the demographic profile that has been stated in section A of the questionnaire and also to describe the mean and average mean of dependent and independent variables stated in section B of the questionnaire. Descriptive analysis implies a simple quantitative summary of a data set that has been collected. It helps the researchers to understand the experiment or data sent in detail and tells all about the required details that the puts the data in perspective.

4.4.1 Independent Variable and Dependent Variable

Descriptive analysis has been used to describe the mean and also the average mean of each statement in independent and dependent variables. Mean and average mean is used to identify the level of agreement of respondents towards the statements.

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4.4.2 Knowledge

No.	<u>Items</u>	Frequency (N)	Mean S.D.
		(SD D N A SA)	
IV I	Saya tahu b <mark>ahawa pembuang</mark> an sisa	0 0 9 44 331	4.84 .427
(1)	makanan adalah satu tabiat yang		
	buruk		
IV I	Saya mengetahui cara	0 1 24 112 247	4.58 .621
(2)	mengendalikan sis <mark>a makanan di</mark>		
	restoran dengan betul		
IV I	Pengetahuan mengenai pengurusan	0 0 17 82 285	4.70 .548
(3)	sampah ya <mark>ng betul me</mark> mbantu dalam		
	menguran <mark>gkan pemba</mark> ziran harian		
IV I	Saya mengetahui aspek kebersihan di	0 2 21 103 258	4.61 .617
(4)	restoran ya <mark>ng berkait</mark> an dengan		
	pengurusan sampah		
IV I	Pengurusan sisa makanan yang tidak	0 1 18 80 285	4.69 .569
(5)	betul memberi kesan terhadap		
	ekonomi		

Table 4.8: Descriptive Statistic of Knowledge Factor

Table 4.4.2 show the mean and standard deviation analysis of respondents on the independent variable which is knowledge. Based on the table, item 1 scores the highest mean value which is 4.84, where the respondents agreed that food waste such a bad habit. The lowest mean item 2, with a mean value of 4.58, where the respondents slightly agreed that they less know how

to handle food waste in the restaurant. From the data set from 384 respondents with the standard deviation most of the values which lowest than 1, indicated the values close to the mean.

4.4.3 Attitude

No.	Items		Fred	luen	Mean	S.D.	
		SD	D	N	A SA		
IV II (1)	Saya tidak s <mark>uka melihat ma</mark> kanan banyak dib <mark>azirkan</mark>	0	3	10	75 296	4.73	.545
(2)	Saya telah diajar untuk menghabiskan semua makanan yang saya ambil	0	4	13	78 289	4.70	.585
(3)	Saya tahu bahawa pengguna suka meninggalkan sisa makanan di restoran	0	3	13	89 279	4.68	.578
IV II (4)	Saya percaya bahawa saya dapat membantu dalam mengurangkan	0	2	15	89 278	4.67	.574
	sisa makanan di restoran						

Table 4.9: Descriptive Statistic of Attitude Factor

Table 4.4.3 show the mean and standard deviation analysis of respondents on the independent variable which is attitude. Based on the table, item 1 scores the highest mean value which is 4.73, where the respondents agreed that they hate to see a food waste. The lowest mean item 4, with a mean value of 4.67, where the respondents slightly agreed that they believe they can

help in reducing food waste in the restaurant. From the data set from 384 respondents with the standard deviation most of the values which lowest than 1, indicated the values close to the mean.

4.4.4 Practice

Items	Frequency (N)					Mean	S.D.
	a.p.				a .		
	SD	D	N	A	SA		
Saya hanya memesan makanan	0	2	18	74	290	4.70	.580
yang saya <mark>mahukan da</mark> lam kuantiti							
yang diperl <mark>ukan sahaj</mark> a							
Sebelum membuang makanan, sya	0	4	15	94	271	4.65	.609
fikirkan ter <mark>lebih dahu</mark> lu kesan							
pembuangan makanan							
Saya mengamalkan untuk tidak	0	3	12	91	278	4.68	.573
membeli terlalu banyak makanan							
dalam satu-satu masa							
Untuk mengelakkan pembaziran,	0	2	15	76	291	4.71	.563
saya berkoongsi makanan bersana							
kawan atau keluarga							
	Saya hanya memesan makanan yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, saya berkoongsi makanan bersana	Saya hanya memesan makanan 0 yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya 0 fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak 0 membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, 0 saya berkoongsi makanan bersana	Saya hanya memesan makanan 0 2 yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya 0 4 fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak 0 3 membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, 0 2 saya berkoongsi makanan bersana	Saya hanya memesan makanan 0 2 18 yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya 0 4 15 fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak 0 3 12 membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, 0 2 15 saya berkoongsi makanan bersana	Saya hanya memesan makanan 0 2 18 74 yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya 0 4 15 94 fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak 0 3 12 91 membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, 0 2 15 76 saya berkoongsi makanan bersana	Saya hanya memesan makanan 0 2 18 74 290 yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya 0 4 15 94 271 fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak 0 3 12 91 278 membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, 0 2 15 76 291 saya berkoongsi makanan bersana	SD D N A SA Saya hanya memesan makanan 0 2 18 74 290 4.70 yang saya mahukan dalam kuantiti yang diperlukan sahaja Sebelum membuang makanan, sya 0 4 15 94 271 4.65 fikirkan terlebih dahulu kesan pembuangan makanan Saya mengamalkan untuk tidak 0 3 12 91 278 4.68 membeli terlalu banyak makanan dalam satu-satu masa Untuk mengelakkan pembaziran, 0 2 15 76 291 4.71 saya berkoongsi makanan bersana

Table 4.10: Descriptive Statistic of Practice Factor

Table 4.4.2 show the mean and standard deviation analysis of respondents on the independent variable which is practice. Based on the table, item 4 score the highest mean value which is 4.71, where the respondents agreed that to avoid food waste, they have to share the food

with a family or friends. The lowest mean item 2, with a mean value of 4.65, where the respondents slightly agreed that before the food is being waste, they need to think the effect of food waste. From the data set from 384 respondents with the standard deviation most of the values which lowest than 1, indicated the values close to the mean.

4.4.5 Food Waste Management

No.	Items		Fre	quen	cy (N)	Mean	S.D.
		SD	D	N	A SA		
DV 1	Kaedah penyediaan makanan yang tidak betul akan menyebabkan berlakunya pembuangan sisa makanan	1	0	11	53 319	4.79	.503
DV 2	Adakah anda berpendapat bahawa pengurusan sisa makanan di restoran adalah sangat penting?	0	3	8	89 284	4.70	.546
DV 3	Sikap tidak mengambil tahu menyebabkan pengurusan sisa makanan di restoran tidak sistematik	10	2	21	108 243	4.49	.840
DV 4	Berbelanja secara bijak dapat mengawal pembuangn sisa makanan di restoran	0	2	11	81 290	4.72	.541
DV 5	Pemahaman dalam diri dapat mengatasi masalah pembuangan sisa makanan di restoran	0	1	17	82 284	4.69	.565

Table 4.11: Descriptive Statistic of Food Waste Management Factor

Table 4.4.5 show the mean and standard deviation analysis of respondents on the dependent variable which is food waste management. Based on the table, item 1 scores the highest mean value which is 4.79, where the respondents agreed that the improper method of food serve can cause a food waste. The lowest mean item 3, with a mean value of 4.49, where the respondents slightly agreed that the ignorance causes food waste management in restaurants to be unsystematic. From the data set from 384 respondents with the standard deviation most of the values which lowest than 1, indicated the values close to the mean.

4.5 RESULTS OF PEARSON CORRELATION

Pearson Correlation Coefficient is the test insights that actions the factual relationship or relationship between two factors. This technique known as the best strategy dependent on the strategy for co-variance. It gives detail data about the affiliation, connection and the heading of relationship. The goal of this investigation was to decide if there are connections between two factors which is free factor (administration quality, cost, enthusiastic) and the reliant variable (consumer loyalty). The degree of solidarity of the affiliation decides if it worthy with the relationship.

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. <mark>50 (-0.30 to</mark> -0.50)	Low positive (negative) correlation
0.00 to 0.3 <mark>0 (-0.00 to -0.30)</mark>	Negligible correlation

Table 4.12: Strength Interval of Correlation Coefficient Source: Abgunbiade and Ogunyika, (2013)

Hypothesis 1: Knowledge

H1: There is positive relationship between knowledge and food waste management.

Table 4.13: Correlation Coefficient for Knowledge and Food Waste Management

	Knowledge		Food Waste		
			Management		
Pearson	/EK	KSII		.635**	
Correlation					
Sig. (2-tailed)				.000	
N	A 3.7	384	Α	384	
Pearson	AY	.635**	A	1	
Correlation					
Sig. (2-tailed)		.000			
N	TIN A	384	NI	384	
NLL.	ANI	A	IN		
	Correlation Sig. (2-tailed) N Pearson Correlation Sig. (2-tailed)	Correlation Sig. (2-tailed) N Pearson Correlation Sig. (2-tailed)	Correlation Sig. (2-tailed) N 384 Pearson .635** Correlation Sig. (2-tailed) .000	Pearson 1 Correlation Sig. (2-tailed) N 384 Pearson .635** Correlation Sig. (2-tailed) .000	

Table 4.5.1 illustrated Pearson Correlation Coefficient, significant value and the number of respondents which are 384. The p-value is 0.000, which it means it has less than the significant level of 0.01. The correlation coefficient is 0.635 which suggested the moderate positive correlation between knowledge and food waste management. The respondents agreed that food waste management in restaurant is such a bad habit. Hence, the hypothesis is accepted.

Hypothesis 2: Attitude

H2: There is positive relationship between attitude and food waste management.

Table 4.14: Correlation Coefficient for Attitude and Food Waste Management

		Attitude Food W	aste
		Manage	ment
Attitude	Pearson	.733**	.690**
	Correlation		
	Sig. (2-tailed)	.000	.000
	N	384	384
Food Waste	Pearson	.690**	.733**
Management	Correlation		
	Sig. (2-tailed)	.000	.000
	N	384	384

Table 4.5.2 illustrated Pearson Correlation Coefficient, significant value and the number of respondents which are 384. The p-value is 0.000, which it means it has less than the significant level of 0.01. The correlation coefficient is 0.690 which suggested the moderate positive

correlation between attitude and food waste management. The respondents agreed that they hate to see food is being wasted in restaurants. Hence, the hypothesis is accepted.

Hypothesis 3: Practice

H3: There is positive relationship between practice and food waste management.

Table 4.15: Correlation Coefficient for Practice and Food Waste Management

		Practice	Food V	Vaste
			Manag	ement
Practice	Pearson		.724**	.759**
	Correlation			
	Sig. (2-tailed)		.000	.000
	N		384	384
Food Waste	Pearson		.759**	.724**
Management	Correlation			
	Sig. (2-tailed)		.000	

Table 4.5.3 illustrated Pearson Correlation Coefficient, significant value and the number of respondents which are 384. The p-value is 0.000, which it means it has less than the significant level of 0.01. The correlation coefficient is 0.759 which suggested the moderate positive correlation between practice and food waste management. The respondents agreed that to avoid wastage, they share food with friends or family. Hence, the hypothesis is accepted.

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4.6 FRAMEWORK ANAYLSIS

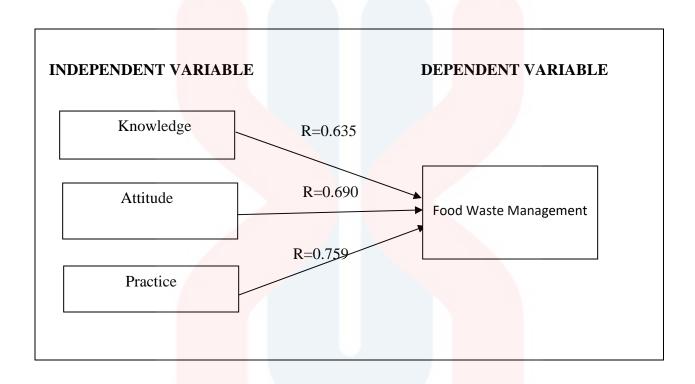


Figure 4.6: Correlation between Knowledge, Attitude, Practice and Food Waste Management

The figure 4.6 showed the framework with the data value for the significant independent variables to the dependent variables. There were three independent variables which is knowledge, attitude and practice. These three independent variables had the correlation relationship to the dependent variables which is food waste management at the dining restaurant. The highest Pearson Correlation value is between practice and food waste management which is 0.759. The Pearson Correlation value for attitude and food waste management is 0.690 while the Pearson Correlation value for knowledge is the lowest which is 0.635. Therefore, all three variables had significant relationship to the food waste management at the dining restaurant in Kota Bharu, Kelantan.

4.7 **SUMMARY**

As the end, all the relationship among the variables, the study found that the three hypotheses in this study are all acceptable. All the independent variable showed different correlation coefficient with the dependent variable, which are 0.635 for knowledge, 0.690 for attitude and 0.759 for practice. It was answered the research question whether there is any relationship between all variables. To conclude, there are significant relationship between knowledge, attitude and practice towards food waste management at the dining restaurant in Kota Bharu, Kelantan.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

This chapter discussed a recapitulation of study, the findings and discussion about the relationship between knowledge, attitude and practice on the food waste management. Researcher

also has discussed the hypothesis test either the research hypothesis was accepted or rejected. Furthermore, in this chapter also deliberated the limitation of the study and suggested several recommendations for the future study.

5.2 RECAPITULATION ON THE FINDINGS

The study was conducted to determine the relationship between knowledge, attitude and practice towards food waste management at the dining restaurant in Kota Bharu. In this case, a set questionnaire was used to get feedback from respondents. The sample of respondents is 384 selected based on the table that was developed by Krejcie and Morgan (1970). This study also analyzed the relationship between knowledge, attitude and practice towards food waste management at the dining restaurant in Kota Bharu.

The dependent variables in this study were important to examine food waste management at the dining restaurant in Kota Bharu. Whereas, a set of independent variables which consists of knowledge, attitude and practice towards food waste management at the dining restaurant in Kota Bharu. The unique habits and interest, and opinions are characteristics that an individual to make decision.

The sampling frame of this study was food waste management at the dining restaurant in Kota Bharu, Kelantan. A total of 384 questionnaires were sent and responded. This analysis of data included reliability analysis, descriptive analysis and Pearson's correlation coefficient. In order was verify the internal accuracy of the measuring instrument, a reliability test was carried

out on the independent variables. The Cronbach's Alpha for all variables scales were in range of 0.737 to 0.837. They were all the minimum acceptable and good reliability, as suggested by Sekaran (2006). Knowledge considered the highly good with Cronbach's Alpha of 0.837. It showed the knowledge was most influence the food waste management at the dining restaurant. Attitude was the second good Cronbach's Alpha of 0.805. Practice was acceptable with Cronbach's Alpha 0.737 concluded that variables were reliable and all variables were kept for further analysis.

The Pearson's correlation was used in this study is to describe the relationship of the two variables in term of direction and strength of the relationship. This result indicated that for knowledge there is a moderate positive correlation between knowledge and food waste management (r=0.635, n=384, p<0.01) and for attitude (r=0.690, n=384, p<0.01) suggested a moderate positive correlation between attitude and food waste management at the dining restaurant in Kota Bharu. Not only that, practice (r=0.759, n=384, p<0.01) was also suggested a strong positive correlation between practice and food waste management at the dining restaurant in Kota Bharu.

5.2.1 Research Question 1: What is the relationship between knowledge with food waste management at the dining restaurant in Kota Bharu, Kelantan?

In the first independent variable (IV), which is knowledge, the result indicated that the strength of the relationship between knowledge and food waste management at the dining restaurant in Kota Bharu, Kelantan is at moderate positive correlation (r = 0.635, n = 384, P < 0.01). According, Exodus Market Research (2007), a high percentage of people are not aware of how much food they discard off. This show many people acknowledge well about food waste, however

there is very limited awareness about it among the individual about food waste at the fine dining restaurant. When customers know that food waste is a bad thing, food waste at the dining restaurant will be reduced. Therefore, there is a significant relationship between knowledge and food waste management at the dining restaurant in Kota Bharu, Kelantan.

5.2.2 Research Question 2: What is the relationship between attitude with food waste management at the dining restaurant in Kota Bharu, Kelantan?

Attitude is the second independent variable (IV), the result indicated that the strength of the relationship between attitude and the study on food waste management at the dining restaurant in Kota Bharu, Kelantan is at moderate positive correlation (r = 0.690, n = 384, P<0.01). Marangon, Troian, Tempesta and Vecchiato (2004), claimed that people's attitude and individual behavior may influence the amount of food waste. It is believed attitude is an important part of influenced food waste at the restaurant. Understanding of attitude can reduce food waste because having been educated from a young age, food waste is a bad habit. Hence, there is a significant relationship between attitude and food waste management at the dining restaurant in Kota Bharu, Kelantan.

5.2.3 Research Question 3: What is the relationship between practice with food waste management at the dining restaurant in Kota Bharu, Kelantan?

The final independent variable (IV) in this study is practice. In this variable, the result indicates the strength of the relationship between practice and food waste management at the dining restaurant in Kota Bharu, Kelantan is at moderate positive correlation (r = 0.759, n = 384,

P<0.01). Based Business Dictionary (2009) describes that practice as a process, method, or rule used in a certain profession or field and a set of these regarded as standard. Through practice food waste can be reduced. Therefore, practice of food waste management can be improved with improvement in the knowledge and attitude regards to proper food waste management. Meanwhile, there is a significant relationship between practices and the food waste management at the dining restaurant in Kota Bharu, Kelantan.

5.3 FINDING AND DISCUSSION

The Reliability Test was conducted to 30 respondents before it was distributed to 384 respondents using the online survey method. It was tested by the Cronbach's Alpha Coefficient indicating the range from 0.737 to 0.837 and it showed that the result was acceptable and good where knowledge variable scored the highest Cronbach's Alpha value of 0.837, attitude variable had the second highest Cronbach's Alpha value which was 0.805, followed by practice variable which is 0.737.

In the Descriptive Analysis for the independent variables, the highest mean value was knowledge variable which was 23.42 and followed by attitude variable (18.78). The lowest mean value for the independent variables was practice variable influences 18.74. The mean value for dependent variable was 23.39. It could conclude that knowledge variable was the most influence on food waste management at the dining restaurant in Kota Bharu, Kelantan.

In order to measure the linear relationship between the two variables identified as the objectives of this study, the researchers carried out the Correlation Analysis. Table 5.1 showed the summary of Correlation Analysis, there were moderate positive relationship between knowledge and attitude variables and there was strong positive relationship between practice and the food waste management at the dining restaurant in Kota Bharu.

Hypothesis	Significant	Value Conclusion	Correlation	Conclusion
			Value	
1	0.000	Accept	0.635	Moderate positive correlation
2	0.000	Accept	0.690	Moderate positive correlation
3	0.000	Accept	0.759	High positive correlation

Table 5.1: Summary of Correlation Analysis

5.4 LIMITATION

As in any study, this study had its own limitations that give the researchers challenges to complete this study. Food waste is a big issue nowadays in Malaysia. This is because there is a lot of food wastage when in a restaurant. The purpose of this study is to identify the relationship between knowledge, attitude and practice food waste management. But this research also has limitations. All information taken is not all usable for the future.

There are few limitations that need to be highlighted for future researchers that might use this study as a reference. This research is about all the study of food waste management but not all the variables can be used in other thesis or can be used as the reference. First of all, in this study, the researchers used a five-point of Likert Scale and had 384 respondents based on Krejcie and Morgan (1970) table. This study is also limited for the researchers in food waste management at the dining restaurant because it can easily understand and can help them find more food waste management at the dining restaurant.

Furthermore, this research is also limited to finding reference materials to collect information about food waste management at the dining restaurant. This is because most studies explain not based on food waste at the dining restaurant but more on food waste to households and schools. This makes it difficult for researchers to find and collect information about food waste management at the dining restaurant.

5.5 **RECOMMENDATIONS**

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The first recommendation in this study is the researchers need to do more research about food waste management at the dining restaurant because this issue is increasingly worrying because a lot of food is wasted and gives various negative impacts from the effects of food waste in restaurants. Therefore, a lot of research on this issue can give awareness to the community not to make food waste at the dining restaurant and at the same time can improve the Malaysia economy.

Then, the studies have recommended efficient restaurant management to prevent customers from wasting food. This is a very important element because the restaurant management in terms of food preparation and menu provided for customers' need for taste to avoid food waste. The restaurant management needs to prepare food in smaller portions, provide delicious food and an affordable price so that customers do not waste food when eating at the restaurant. This not only affects food disposal but can also attract customers to come to the restaurant that generates income to the business.

Next, the study is limited to 384 sample that can be measured as small markets. According to Krejcie & Morgan (1970), that the amount would be sufficient and suitable, larger sample sizes could be used to systematize millions of local people in Malaysia. Therefore, future researchers should expand their sample size in order to increase the accuracy and reliability of the study.

Lastly, interview method or create some open-ended questions for respondents can use by future researcher to get high response rate, good explanation, better understand, and explore research subjects' opinions, behavior, and experiences. Thus, this approach can produce better results of the study.

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5.6 SUMMARY

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In conclusion, this research has been carried out to explore the study of food waste management at the dining restaurant in Kota Bharu, Kelantan. In addition, this study helps other researchers to do research about food waste management and can be used as one of their references.

The results obtained in Chapter 4 through Statistical Package for the Social Sciences (SPSS) were discussed further and at the same time made conclusions based on the results. As a result, it can be concluded that there is a significant relationship between knowledge, attitude and practice towards food waste management at the dining restaurant in Kota Bharu, Kelantan. Thus, it is hoped all information provided through this research can help to reduce food waste at the dining restaurant and also be able to improve the Malaysian economy towards a developed country.

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APPENDIX

BAHAGIAN A: DEM <mark>OGRA</mark> FIK
'andakan (/) pada k <mark>enyataan y</mark> ang berkenaan tentang diri a <mark>nda.</mark>
. UMUR:
20 tahun ke bawah
21 tahun hingga 30 tahun
31 tahun hingga 40 tahun
41 tahun hingga 50 tahun
51 tahun ke atas
. JANTINA:
Lelaki
Perempuan
. BANGSA
Melayu
India
Cina
Lain-lain
. PENDAPATAN ISI RUMAH:

RM1000 ke bawah		
RM1000 - RM2999		
RM3000 – RM4999		
RM5000 ke atas		
5. PEKERJAAN:		
Pelajar		
Bekerja Sendiri		
Kerajaan/Swasta		
Tidak bekerja		

BAHAGIAN B

Menggunakan skala yang disediakan 1-5, dimana 1 bermaksud anda sangat tidak setuju dan 5 bermaksud anda sangat setuju, sila tandakan pada pilihan yang terbaik berdasarkan pernyataan dibawah.

Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
1	2	3	5 ₄ A	5

I.	I. Pengetahuan tentang pengurusan sisa makanan di restoran.							
1	Saya tahu bah <mark>awa pemb</mark> uangan sisa makanan adalah s <mark>atu tabiat</mark> yang buruk	1	2	3	4	5		
2	Saya mengetahui cara mengendalikan sisa makanan di restoran dengan betul	1	2	3	4	5		
3	Pengetahuan mengenai pengurusan sampah yang betul membantu dalam mengurangkan pembaziran harian	1	2	3	4	5		
4	Saya mengeta <mark>hui aspek k</mark> ebersihan di restoran yang b <mark>erkaitan</mark> dengan pengu <mark>rusan sam</mark> pah	1	2	3	4	5		
5	Pengurusan sisa makanan yang tidak betul memberi kesan terhadap ekonomi	1	2	3	4	5		
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II.	II. Tingkah laku dalam pengurusan sisa makanan di restoran.							
1	Saya tidak suk <mark>a melihat</mark> makanan banyak dibazirkan	1	2	3	4	5		
2	Saya telah diaj <mark>ar untuk menghabisk</mark> an semua makanan yang saya ambil	1	2	3	4	5		
3	Saya tahu bahawa pengguna suka meninggalkan sisa makanan di restoran	1	2	3	4	5		
4	Saya percaya <mark>bahawa sa</mark> ya dapat membantu dalam mengurangka <mark>n sisa mak</mark> anan di restoran	1	2	3	4	5		

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III.	Cara mempraktikkan pengurusan sisa makanan di restoran.					
1	Saya hanya memesan makanan yang saya mahukan dalam kuantiti yang diperlukan sahaja	1	2	3	4	5
2	Sebelum membuang makanan, saya fikirkan terlebih dahulu kesan pembuangan makanan	1	2	3	4	5

3	Saya mengamalkan untuk tidak membeli terlalu banyak makanan dalam satu-satu masa	1	2	3	4	5
4	Untuk mengel <mark>akkan pem</mark> baziran, saya berkongsi makanan bersama kawan atau keluarga	1	2	3	4	5

BAHAGIAN C

Menggunakan skala y<mark>ang disediakan 1-5, dimana 1 bermaksud anda s</mark>angat tidak setuju dan 5 bermaksud an<mark>da sangat s</mark>etuju, sila tandakan pada pil<mark>ihan yang t</mark>erbaik berdasarkan pernyataan dibawah.

Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju
1	2	3	4	5
	MA	LAY	SIA	

1	Kaedah penyediaan makanan yang tidak betul akan menyebabkan berlakunya pembuangan sisa makanan.	1	2	3	4	5
2	Adakah anda berpendapat bahawa pengurusan sisa makanan di restoran adalah sangat penting?	1	2	3	4	5
3	Sikap tidak mengambil tahu menyebabkan pengurusan sisa makanan di restoran tidak sistematik.	1	2	3	4	5
4	Berbelanja secara bijak dapat mengawal pembuangan sisa makanan di restoran.	1	2	3	4	5
5	Pemahaman dalam diri dapat mengatasi masalah pembuangan sisa makanan di restoran.	1	2	3	4	5

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