FACTORS AFFECTING FOOD WASTE AT FAST FOOD RESTAURANTS IN KOTA BHARU KELANTAN

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ABSTRACT

The purpose of this study is to focuses on factors affecting food waste at fast food restaurants in Kota Bharu, Kelantan. This research will aid future researchers studying fast food waste. It also investigates how restaurant management affects fast food waste. This project aims to enhance policies and reduce fast food waste in Kota Bharu, Kelantan. Moreover, the outcomes of this study will lead to a better understanding of the significance of good food handling procedures and the reduction of practices that result in food waste. This understanding will contribute to the reduction of practices that result in food waste.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This thesis focuses on factors affecting food waste at fast food restaurants in Kota Bharu Kelantan. This chapter provides an introduction to the report. It has 8 sections. Section 1.2 describes the background of the study. Section 1.3 briefly mentions the problem statement. Section 1.4 describes research objectives, section 1.5 briefly mentions research questions, section 1.6 is about the significance of the study, section 1.7 describes the definition of the term and last is 1.8 briefly mentions a summary.

1.2 BACKGROUND OF STUDY

Food that is fit for human consumption that is thrown is referred to as food waste, regardless of whether it has been held after it has expired or allowed to decay. The food has typically been harmed, although there are other possible causes as well, like market surplus or

specific customer shopping patterns. A system of unsustainable food production and consumption is food waste. Despite being one of the major worldwide issues, food waste has no agreed-upon term in the study literature. The Food and Agriculture Organization defines food waste in addition. According to the Food and Agriculture Organization of the United Nations (FAO), "food" refers to "how many goods are edible for human use" (Gustavsson et al., 2011)

One of the social, economic, and environmental problems is food waste, according to the Food and Agriculture Organization (2013). Each year, around 1.3 billion tonnes of food are lost or wasted globally, which is a significant fraction of the entire amount of food produced (Lundqvist et al., 2008, Parfitt et al., 2010). Food waste is extremely bad for the environment and has many detrimental repercussions on it. From agricultural production through ultimate consumption, or what Papargyropoulou et al. (2014) termed as a hierarchy of food waste, food loss and waste occur at every level of the global food value chain.

Figure 1.1: Problem of food waste " (Gustavsson et al., 2011)

Due to effective production technology, the fast food sector provides its clients with food products that are quick and convenient to access. Typically, fast food restaurants are franchise chains with the same menu items including hamburgers, pizza, chicken, and sandwiches. As a result, fast food has taken centre stage, and a large number of fast food outlets have arisen due to rising demand. Food waste could stem from overly urgent consumption. The unchecked greed of a select few is the root of the problem facing this nation, which must be addressed to prevent catastrophe, including adding to climate change. Fast food trash is a serious problem since it must be properly disposed of to protect the environment.

Fast food trash is a serious problem since it must be properly disposed of to protect the environment. Prior to the scale, the management of fast food business packaging waste received little scholarly attention. This is due to the fact that food waste, whether it is KFW or CFW, is mostly caused by the food service industry. When comparing the two businesses, it was discovered that Company A logged 91.23 grams of waste per serving whereas Company B recorded 85.86 grams (Betz, Buchli, Göbel, & Müller, 2015).

1.3 PROBLEM STATEMENT

From Asia News Network, despite having to pay extra money for meals, Malaysians continue to waste a lot of food. In 2021, the Solid Waste Management and Public Cleansing Corporation (SWCorp) discharged 4,081 tons of edible food per day, enough to fill one anda half Olympic-sized swimming pools. This figure is based on Malaysia's total daily solid waste generation of 38,219 tons in 2021. According to Wang et al. (2017), the hospitality

industry should exclude food that cannot be eaten during the cooking process, such as animal bones, seeds, oil waste, natural flavorings and dyes, which are estimated to account for 73-79% of total snack food waste. Moreover, according to Bohdanowicz (2005) the rising amounts of waste produced by the hospitality sector will, if existing waste management processes are not improved, contribute to a large rise in the environmental footprint left by the hospitality business. In fact, the production of waste is considered by some to be the most obvious impact that the hospitality industry has on the surrounding environment. This, along with the fact that a lot of food is served in the global hospitality sector according to (Marthinsen et al., 2012) up to a third of all the food eaten in Denmark is served in the hospitality sector, means that food waste is a very big part of hospitality waste, possibly making up more than half of it. In Denmark, up to a third of all the food eaten is served in the hospitality sector (Curry, 2012).

The problem that the hospitality industry is facing due to food waste is over-preparing by the fast food restaurant in Kota Bharu. Portion Control is a technique that must be followed that specifies the amount of food and meals that will be prepared for each customer. A standard portion also means that food servings are uniform in taste, quality, and quantity, which leads to customer satisfaction. As we realize, food waste cannot be recycled. Leading to waste and ultimately increasing the cost of food. As either a consequence, exercising portion control can assist in dealing with this issue. Next, one of the issues with food waste in the hospitality industry is consumer behaviour. According to previous research, consumers have a negative attitude toward food waste because it makes them feel bad and concerned (Graham-Rowe et al., 2014, Stancu et al., 2016, Visschers et al., 2016) As a result, the attitude toward food waste influences the intention to avoid food waste. Previous research indicates that consumers do not consider the environmental impact of food waste, according to Parizeau et al. (2014) and Quested et al (2013).

Food waste awareness in the fast food sector requires recognizing the huge quantity of food wasted throughout the fast food industry and taking action to alleviate this issue. Fast food restaurants frequently generate food waste owing to their rapid efficiency and simple food manufacturing techniques, along with strong demand.

Several critical factors may be addressed to improve awareness of food waste in the context of fast food. It is critical to emphasize the massive amount of food waste caused by fast food restaurants. This waste comprises both unsold food and wasted leftover food. Individuals can appreciate the gravity of the problem by emphasizing the amount of food wasted. Furthermore, food waste has negative environmental repercussions. Food waste creates methane, a powerful greenhouse gas that contributes to climate change. Consumers can grasp the importance of solving the issue by emphasizing the environmental impact of food waste.

Individual education about the necessity of sustainable food production can aid in the reduction of food waste. Within the fast food business, this might involve supporting ethical sourcing, minimizing overproduction, and developing effective inventory management systems. Encouragement of customers to be conscious of their own food choices and portions can help to reduce food waste. This might include increasing awareness about the environmental implications of food waste and offering advice on portion control and reusing leftovers.

Raising food waste awareness in the fast food industry means underlining the extent of the problem, emphasizing the environmental impact, encouraging responsible consumption, and supporting food recovery schemes. Individuals may aid in the reduction of food waste in the fast-food industry by increasing understanding and awareness of it.

Restaurant management is also a factor of food wasting in Kota Bharu, Kelantan. Precisely,

the hotel's owners and manager can specifically prevent kitchen food waste by carefully monitoring the expiration and due dates of food, ensuring that leftover peels are usedas animal and bird feed, donating excess food, composting, menu planning, portion control, cost reduction, and reusing edible leftovers for making other dishes. The restaurant's managercan minimize customer food waste and buffet leftover waste. Food service waste and level of consumption can thus be considered when managing food waste.

1.4 RESEARCH OBJECTIVES

- To examine whether over preparing is associated with food waste in fast food restaurants.
- To examine the consumer behavior that encourages food waste in a fast food restaurant.
- To examine customer awareness of food waste in fast food restaurant.

1.5 RESEARCH QUESTION

- What is the associated between over preparing and food waste in fast food restaurants?
- What causes customers' behavior to encourage food wasted in fast food restaurants?
- How to determine customer awareness of food waste in fast food restaurant?

1.6 SIGNIFICANCE STUDY

A formal report shows why the study was important and explains why it was important to do the study. This proves that the work is important and has an effect on the research area. It also proves that it adds to new knowledge and helps other people.

This research will aid future researchers studying food waste at fast food restaurants. It also investigates how restaurant management affects food waste. This project aims to enhance policies and reduce fast food waste in Kota Bharu, Kelantan. According to the statistics, food services are responsible for the third-highest quantity of wasted food overall (European Environment Agency, 2015). Food is typically thought of as the resource that has the lowest cost, and it is frequently considered as something that may be discarded without much thought. It is essential to raise consciousness regarding the issue of food waste to initiatea behavioral improvement among consumers (Ghosh et al., 2015). For example, when consumers' knowledge is raised to a higher level, they are more likely to reduce the amount offood that they throw away (Principato, Secondi, & Pratesi, 2015). Furthermore, one essential managerial action that mitigates food waste in food service outlets is engaging the consumer through the use of appealing messages (Radzymiska, Jakubowska, & Staniewska, 2016; Filimonau & De Coteau, 2019). This can be accomplished by providing the consumer with information that encourages them to make better food choices. The amount of wasted food thatis produced by restaurants might vary depending on the sort of service that is being provided, such as fine dining, casual dining, quick service, take away, buffets, smorgasbords, and all- you-can-eat, which are all examples of restaurant offerings. In spite of this, there is a significant

problem with food waste (Garrone et al., 2014). The operation of a typical restaurant begins with the acquisition of food and continues with the meal's preparation, cooking, storage, and serving.

In addition, the outcomes of this study will lead to a better understanding of the significance of good food handling procedures and the reduction of practices that result in food waste. This understanding will contribute to the reduction of practices that result in food waste. In addition to that, it would make it possible for everyone to be made aware of their perspective on the fact that cutting back on excessive spending on food is another way to reduce the amount of waste produced by fast food restaurants.

1.7 DEFINITION OF TERMS

1.7.1 Food Waste

Food that is fit for human consumption but is wasted is known as food waste. This definition includes food that has been held over its expiration date or allowed to spoil (Gheoldus, M. 2019). This is typically associated with food spoiling, but it can also be the result of other reasons such as market oversupply or individual client purchasing or eating habits. Food waste is defined as a reduction in the quantity or quality of food as a result of consumer, food service provider, and merchant choices and actions.

1.7.2 Fast Food

Fast food is a type of mass-produced, commercially marketed cuisine that prioritizes speed of serving. It is a term used in business to describe meals offered in takeaway packaging at a restaurant or store that comprise frozen, reheated, or precooked items. Term of fast food is manufactured cuisine that is quickly made and available at snack bars and restaurants for fast meals or takeout.

1.7.3 Fast Food Restaurant

A fast-food restaurant is a specific type of restaurant that specializes on serving fast-food fare and offers little in the way of table service; these establishments are sometimes referred to as quick-service restaurants (QSRs) in the industry. Fast food restaurants typically offer a simple menu, cooked in bulk in advance and keep it hot, finish and package it to order, and provide takeout. Fast-food restaurants are typically part of a larger restaurant chain or franchise that supplies standardized ingredients, partially produced dishes, and supplies to each site through managed supply routes.

1.8 SUMMARY

The researchers begin this chapter with a review of their inquiry into the factors influencing food wastage at fast food restaurants in Kota Bharu, Kelantan. The researcher also discusses the study's setting, issue statement, research questions, and research aims. The study's significance also contains related research and an explanation of essential concepts.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter gives an overview of the literature review as a whole. This chapter was designed to provide information to the analysis's independent and dependent variables. The literature review on the study of the to examine whether over preparing is associated with food waste in fast food restaurants, to examine consumer behavior that encourages food waste in a fast food restaurant, and to examine customer awareness of food waste in fast food restaurants includes three independent variables. This chapter ends with the conceptual structure of the analysis,which will be operationalizing in the methods used for our research in Chapter 3.

The most significant aspect of this topic was the food waste that was served, followed by buffet waste and customer plate waste. Food waste results in an economic loss of up to 23% of the value of the food purchased. Food waste is caused by restaurant operating procedures and policies, as well as social food practices. As a result, food waste prevention efforts should be doubled. Considering how the hospitality and food service sectors operate and organize themselves. The most important aspect is that the customer's types of behavior are intimately connected to food consumption.

2.2 OVER PREPARING

According to Filimonau and de Coteau (2019) It might be challenging to estimate how much food is wasted in the industry that provides food services. Food can be lost or squandered along the food value chain during purchase, storage, preparation, mealtime, and clean-up (plate scraps) (Betz et al.,2015). Fast food restaurants frequently priorities speed and efficiency, which leads to an overproduction of food to match high demand. This might result in extra food going purchased and eventually going to waste

Based on food inputs at each stage of the value chain, Beretta, Stoessel, Baier, and Hellweg (2013) identified the food service sector as the third greatest source of food loss in their research of food waste in Switzerland. The quality of the data is sometimes impacted by the fact that restaurant waste food evaluation is typically restricted to a rough management budget, or projection, of the amount of food lost, such as, for example, X number of bins of volume X generated in the restaurant within the X period (Filimonau et al. 2019).

The Pakistani setting might benefit greatly from structured surveys and interviews like those conducted by Parry, James, and LeRoux (2015) and the Food Waste Reduction Alliance (FWRA, 2016). Both studies involved primary restaurant surveys, which were followed by focused groups and structured interviews with certain restaurant owners and chefs. One of the primary causes of food waste in restaurants, according to their research, is consumer waste. In order to better understand the dynamics of food waste in Lahore eateries, this study would adhere to these two research paradigms.

According to research conducted at Cornell's Food and Brand lab, portion sizesincluded in the popular cookbook "The Joy of Cooking" increased by 36% in 2006. 53 In addition, many people forget to eat the food they eat. Had stayed, and as a result, they ended up throwing it away.

2.3 CUSTOMER BEHAVIOR

According to Dias-Ferreira (2015) Food waste in the market of out-of-home food consumption is the food served but not eaten at food service providers. Statistics show that the third-highest amount of food waste occurs at food services (European Environment Agency, 2015) The academic community as well as society have become more aware of the issue of food waste. Food waste is one of the problems with sustainability that has to be addressed sinceit is a factor that can have a negative impact not only on the economy but also on the environment and society. Consumers are one of the most significant contributors to the waste of food in wealthy countries.

A typical restaurant's operations begin with the purchase of food and continue with its preparation, cooking, storing, and serving, as well as wait staff duties and patron behavior. Each activity has a substantial impact on the production of food waste. For instance, Gunders (2012) states that 4–10% of food purchased is lost in restaurants. Consumer behavior has been identified as a critical determinant of restaurant food waste (Martin-Rios et al.,2018; Papargyropoulou et al., 2016; Wang et al., 2017) For example, customers ordering more food than they can eat (Papargyropoulou et al., 2016) and leaving food on the plate (Aamir et al., 2018; Bharucha, 2018)are significant contributors of food waste. The reduction of food waste can be aided by developing a thorough understanding of consumer food waste behavior in restaurants.

This is according to research conducted by the Food and Brand Lab at Cornell University. Furthermore, food waste in restaurants has been linked to customer behavior (Martin-Rios et al., 2018; Papargyropoulou et al., 2016; Wang et al., 2017). Customers who purchase more food than they can consume or who don't finish their meals are major contributors to food waste (Papargyropoulou et al., 2016; Aamir et al., 2018; Bharucha, 2018).Improving food

waste reduction efforts requires an in-depth knowledge of why and how dinersthrow away food at restaurants.

2.4 AWARENESS OF FOOD WASTE IN FAST FOOD

Fast food restaurants create a significant quantity of food waste because of issues such as overproduction, misleading portioning, and client plate waste, according to a study done by Bucio et al. (2020). To address this issue, the authors emphasize the importance of increasing awareness and education among both restaurant employees and consumers. They emphasize the need of implementing waste-reduction techniques such as enhanced inventory management, portion control, and programs to give leftover food to local organizations. The issue of food waste at fast food establishments has gained significant attention. Fast food restaurants, known for their large number of customers and quick service, often generate substantial amounts of wasted food. This problem has captured the interest of researchers and environmental advocates, leading to efforts to raise awareness and find sustainable solutions.

Moreover, the expanding urban population leads to increased food waste. The environmental and food security consequences of food waste cannot be overstated. As a result, how food waste is handled has become an essential concern. However, there is still a knowledge and awareness gap in underdeveloped nations about food waste recycling. According Smith and Johnson (2019) analyze the effect of consumer behavior on food waste creation at fast food restaurants in another research. They contend that customer-targeted awareness efforts can have a major influence on decreasing food waste. Individuals may make better-educated decisions and contribute to waste reduction initiatives by educating consumers about the repercussions of food waste and giving practical recommendations on portion control and leftover management.

According to Johnson (2019), boosting consumer knowledge might lead to changes in eating

behaviors such as ordering reduced servings or taking home leftovers. Furthermore, educating restaurant employees on effective inventory management and portion control may help reduce waste at the source. On the other hand, emphasizes the necessity of educating both customers and restaurant personnel about food waste reduction.

According to research Fagerström (2018) also analyses the impact of fast-food corporations in increasing awareness and taking action against food waste. Fast food chains, according to the author, may apply sustainable practices such as composting food wastes, optimizing manufacturing processes, and collaborating with food recovery organizations. Fast food businesses may raise awareness and encourage responsible consumption by aggressively promoting these programs and transparently discussing their efforts with consumers.

2.5 FOOD WASTE IN FAST FOOD RESTAURANTS

Food waste is defined as "any food suitable and intended for human consumption that is discarded, whether or not after it has been stored past its expiration date or left to spoil" (stergren et al., 2014). It is produced at two levels: food service establishments (Kitchen Waste Food or KFW) and customers (Customers or Consumer Food Waste or CFW; Principato, Pratesi, & Kedua, 2018). Food waste occurs at numerous stages of a restaurant's operation, according to Heikkila et al. (2016), and can be linked to a wide range of external and internal variables. If arranged in a linear format, these characteristics can have an impact on pre-kitchen, kitchen-based, and post-kitchen operational processes and procedures (Filimonau & de Coteau, 2019).

Additionally, food waste management in the food service business is a complicated issue that involves several components and activities, according to Beretta et al. (2013). This is because research on food service waste management does not consistently define waste. For instance, Switzerland calculates food waste by measuring the calories in discarded food. According to Beretta et al. (2013), Betz et al. (2015), Papargyropoulou et al. (2016), and Silvennoinen et al. (2015), food waste in the food supply chain was measured to understand the true scope of the issue, pinpoint the different sources of food waste, and establish a baseline from which to track the problem's decline over time. To more clearly define efficient management strategies for reducing food waste in the food service industry, more study is required.

Food waste in snack food establishments is a result of a number of reasons, including poor demand planning (Derqui et al., 2018; Pinto et al., 2018) or faulty forecasting (Goonan et al., 2014); McCray et al., 2018), among others. The lack of menu planning (Derqui and Fernandez, 2017), sticking to the same set of menus every day (Engström and Carlsson-Kanyama, 2004), creating menus that are too complex for customers (Marais et al., 2017), or offering a menu that is unattractive to customers are other examples of poor menu planning

that contribute to food waste (Pinto et al., 2018).

Food waste in restaurants is typically classified into three categories: waste from meal preparation, waste from spoiling on site, and waste from client plates (Kantor, Lipton, Manchester, & Oliveira, 1997). Level comparison, i.e. greater food waste normally caused by the usage of because of very irresponsible consumer behavior in food management without the occurrence of waste (Ghosh, Sharma, Haigh, Evers, & Ho, 2015). The food service industry is one of the largest contributors to food waste, whether it is KFW or CFW. When two firms were compared, it was discovered that company A reported 91.23 grimes of waste per serving while company B registered 85.86 grimes (Betz, Buchli, Göbel, & Müller, 2015). Food preparation is estimated to account for the majority of restaurant food waste (45-65%, depending on the source of estimates), followed by waste on customers' plates (30-34%), though this figure can vary significantly depending on a variety of factors such as the type of restaurant, its location, and its business model, to name a few (Baldwin, Wilberforce, & Kapur, 2010). Another example of an external impact is the fierce market competition that encourages restaurant owners to diversify their product offerings. Their menu, which frequently results in wasteful food waste. Huang, He, and Li (2018)

2.6 HYPOTHESIS

A hypothesis is also known as the conceptual framework. It must be measurable and reasonable, including current knowledge and methods. A conceptual framework can also be characterized as a set of predictors or justifications for a relationship between two variables. It indicates that an independent variable has a systematic relationship. A result of this research revealed:

H1: There is a significant relationship between over preparing is associated with food waste in fast food restaurants.

H2: There is a significant relationship between consumer behavior that encourages food wastein fast food restaurants.

H3: There is a significant relationship between awareness of fast food toward food waste in fast food restaurant.

2.7 CONCEPTUAL FRAMEWORK

Based on the previous literature review, the researchers proposed a framework to studythe factors affecting food waste at fast food restaurants in Kota Bharu, Kelantan, which are affected by various aspects of internal and external features. Hypothesis 1 show that over preparing is the factors of affecting food waste at fast food restaurant. Consumer behavior ispart of hypothesis 2 in this research. However, hypothesis 3 is awareness of fast food. Therefore, the structure which can be seen below.

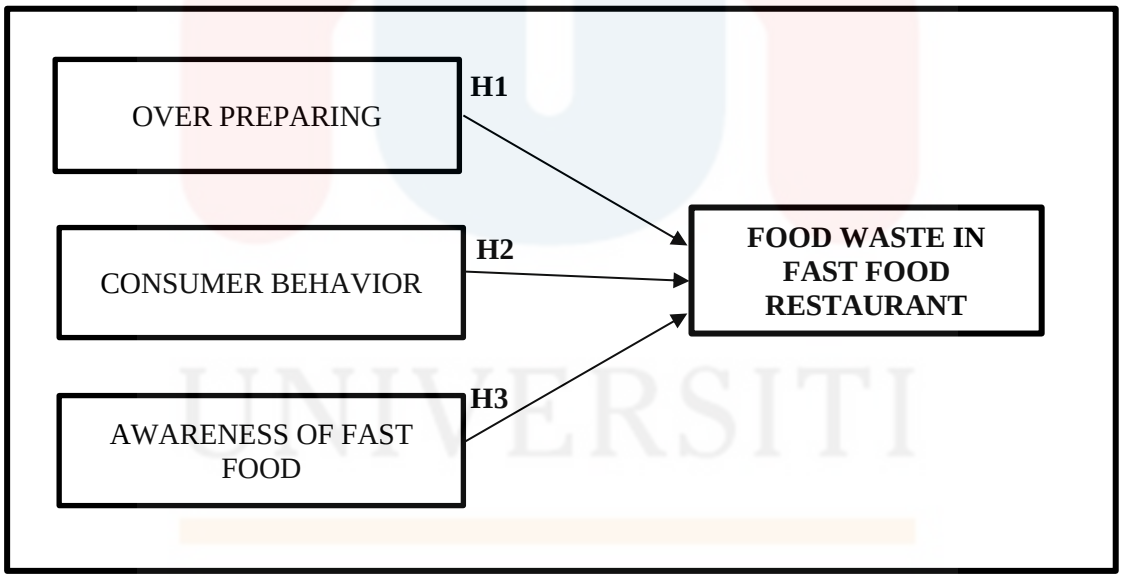

Figure 1.2: Conceptual Framework

2.8 SUMMARY

This chapter provides descriptions of the few study elements such as over-preparing, customer behavior, and awareness of fast food. In this chapter, the researcher has also developed a conceptual framework to clarify the connection between the independent and dependent variables, and to identify the causes of such factors that influence food waste in fast food establishments in Kota Bharu, Kelantan.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

The following is a list of the elements that are included inside this chapter. Section 3.2 goes on research design. Section 3.3 discusses the target populations, whereas Section 3.4 discusses sample size. The sampling process is described in detail in Section 3.5. The data gathering is described in the next part of section 3.6. While the following section 3.7 highlights the research instrument and 3.8 discusses data analysis. Lastly 3.9 will explain the summary about this chapter.

3.2 RESEARCH DESIGN

For the researcher to achieve the goal of the study or validate the hypothesis that was formed for the investigation, there is a precise sequence of inquiry that has to be followed, which is referred to as a research design. One might categories them as qualitative research designs or quantitative research designs on a more general level.

Quantitative methods will be utilized in the progress of this study. Problems are measured through quantitative research, which produces data or numerical data that may be turned into useful statistics. This study generates data or numerical data. Quantitative research involves the collection of data from past, present, and potential respondents through the utilization of sampling techniques,

continuing online surveys, and questionnaires. The outcomes can be expressed using numbers. We choose to conduct our research using a quantitative methodology to collect feedback from residents of Kota Bharu, Kelantan.

A questionnaire is a type of research device comprising questions or several questions intended to elicit information from respondents. Primary data also refers to the survey's questionnaire data gathered through surveys. There are several questions in the survey. The research aims to improve existing rules and cut down on the amount of wasted fast food in Kota Bharu, Kelantan. In addition, an online Google Form will be used to run the survey to guarantee that the Kota Bharu, Kelantan community is well prepared to answer the questions.

3.3 POPULATION

Based on the chosen topic, having a sample representative of the target population was necessary to transfer data from sample observations to the target population. According to Taherdoost (2016), The term population refers to a country's overall population. The target population consists of all participants who satisfy the requirements for the investigation of the particular study (Alvi, 2016). A population is any complete group with at least one characteristic in common. A population is a full collection of individuals, whether that group is a nation or a group of people who share a similar attribute. A population in statistics is the group of people from which a quantitative sample is taken for research.

The population most relevant to this study's findings are those who live in the urban area of Kota Bharu in the state of Kelantan. The research instrument frame for the current study was constructed by narrowing down particular criteria, such as requiring participants to be Malaysian residents living in the Kota Bahru, Kelantan and to be at least 18 years old. This research the relationship between factors affecting food waste, over-preparing, consumer behavior and

awareness of food waste at fast food restaurants in Kota Bharu, Kelantan. As a result, the study's target group consists of all employees who work at fast food restaurants. This are done in order to make the study more relevant to its targeted users.

3.4 SAMPLE SIZE

The process of determining the total number of observations that will be included in the mathematically applicable sample is termed as sample size determination. If the purpose of an empirical study is to make conclusions about the populations being studied, then the size of the samples used in the study is an essential component to consider. In addition, determining the appropriate size of the sample is essential in terms of the linear proportion of the population (Cohen, 1988). different criteria, including the variety of the sample group, the statistical power, the expenses, the consistency, the analytical technology, and the manpower. As a consequence of this, there has been a significant amount of debate on what exactly makes an acceptable sample size, and there are not any clear and definitive criteria for defining what constitutes an adequate sample size (Flynn & Pearcy, 2001).

According to Barclay et al. (1995), the 10 times criteria are among the various sample size considerations. They assert that the sample must be ten times as many structural paths that are aimed at a particular construct in the structural model. As a result, according to this argument, a sample size of at least 70 is needed to generate a valid conclusion. 100 is the minimum sample size, according to Hair et al. (1998), if SEM is used to test the hypotheses. A different approach that is frequently used when implementing SEM is based on the power of analysis (Green, 1991). Green (1991) asserts that the number of predictors with three different effect sizes—small, medium, and large determines the sample size for this technique.

Number of Predictors	Sample Sizes Based on Power Analysis		
	$R^2 = 0.02$	$R^2 = 0.13$	$R^2 = 0.26$
1	390	53	24
2	481	66	30
3	547	76	35
4	599	84	39
5	645	91	42
6	686	97	46
7	726	102	48
8	757	108	51
9	788	113	54
10	844	117	56
15	952	138	67
20	1066	156	77
30	1247	187	94
40	1407	213	110

Table 3.4: Green (1991)

So, in this study, the researcher employed the green table. The medium impact size general practise has been used, and it has produced a sizable number of respondents. According to Green's (1991) table, the study requires at least 76 participants to reach a medium effect size of 0.15 if the number of predictors is equal to 3.

3.5 SAMPLING METHOD

According to Hair et al. (2010), the most important part of the research process is the procedure that is used to select samples. It's highly improbable that the researcher will be able to collect enough data from all of the cases to answer the research questions adequately. Therefore, picking a representative sample is essential. In the approach of sampling, the researchers choose

specific parts of populations to analyses as the primary focus of their work. According to Sekaran and Bougie (2016), convenience sampling is the process of gathering data from members of the general public who are willing to share their experiences. The sampling frame for the current study was built by narrowing down specific criteria such as requiring participants to be Malaysian residents residing in the country and to be 18 years of age or older. Table 3.5 show the two main sampling techniques that are accessible.

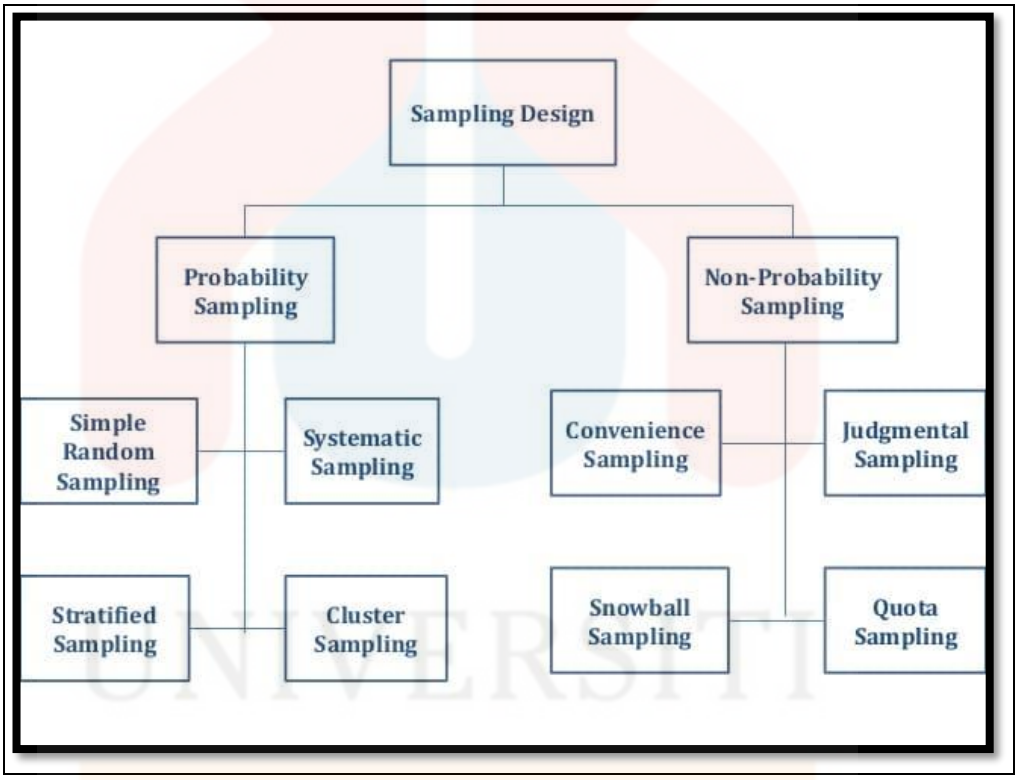

Table 3.5: Types of Sampling Method

According to (Alvi, 2014), The two types of sampling strategies are sometimes referred to as probability and non-probability. Probability sampling strategies include stratified sampling, systematic sampling, and random sampling. In non-probability procedures, it includes quota sampling, judgement sampling, and convenience sampling. Each participant in the group has a chance of being chosen in a probability sampling. Convenience sampling has been chosen as the

best type of sample for this study. This approach is most successful when real individuals are the respondents. Anyone could be chosen by the researcher to serve as a respondent, for example. In other words, anybody who interacts with the researcher is eligible to be a valuable component of the responders with this type of non-probability sampling method (Showkat & Parveen, 2017).

3.6 DATA COLLECTION PROCEDURE

Data analysis is the method in which statistical and logical method are systematically applied to explain and demonstrate, condense, recapture and analyses data. Primary or secondary data sources may be used in data collection. The collection of information specifically for the study at hand from legitimate sources like clients, users or non-users, or other research-related organizations, is referred to as primary data analysis. Any information from published sources that has been specifically gathered for the current research issue is required for secondary data research principal information gleaned from the survey. Primary data shows that the best ways to collect the data is interview audio recordings via interview schedules. In this data, researcher have to completed paper, pen or pencils (if necessary) for the questionnaires. In primary data, laboratory reagents would be purchase based on investigational product.

Secondary data are meanwhile gathered from books, articles, and journals. The goal of secondary data is to collect description data to make the decision-making process clearer. Additionally, references to related publications within online sources like Newspaper Online, Magazine, and Journal of Information Library Management are made in this analysis. Therefore, Deakin University 2022, state that secondary data could be collected by interview transcripts. Laboratory reagents would be purchase based on product analyses and SPSS data files actually contains original information and variable summary scores calculated.

3.7 RESEARCH INSTRUMENTS

A research instrument is a measuring tool that includes observation, an interview, and a questionnaire to collect relevant data on a topic of interest from target respondents (Sekaran & Bougie, 2010). As a result, selecting the appropriate research instrument for data collection is critical for research. According to Trigueros, Juan & Sandoval (2017), there are two types of research tools: qualitative and quantitative.

The research uses questionnaires that will be distributed to their target respondents so that they can obtain primary data directly. A questionnaire is a collection of closed-ended questions meant to gather information from our intended respondents (Mcleod, 2018). The survey would be answered by the target respondents over the Internet, and the construction of survey was created with Google form. The instrument or method for the questionnaire distribution purpose would be WhatsApp, Facebook, and other social media platforms in order to reach as many as 76 respondents as possible.

3.7.1 Questionnaire

The questionnaire will be distributed in this study to collect data from respondents. Section A, Section B, and Section C are the three sections of the questionnaire. Section A discusses the respondents' demographic profile, which includes their age, gender, race, and occupation. The demographic respondent is intended to gather background information from respondents. Meanwhile, section B concentrated on the first independent variable, preparation. Meanwhile, the second independent variable is customer behaviour, and the final independent variable is food waste awareness. Section C concentrated on the dependent variable provided by the researcher. Section C

addressed the issue of the dependent variable, food waste at fast-food restaurants in Kota Bharu, Kelantan.

Scale of measurement

As a result, the survey gave respondents enough time because it was essential for them to fully complete the required questions in order to complete this study. In order to get quantitative data from target respondents, structured questionnaires are used. A set questionnaire will be distributed to participants who will respond voluntarily. The goal of the research is explained to the respondent before handing out the questionnaires, and personal details are kept anonymous. In addition, this questionnaire uses a 5-point Likert scale. A type of psychometric response scale in which respondents use a 5-point scale to express their level of agreement with a proposition. Thus, Likert with a 5-point scale was used to measure independent and dependent variables which are aligned from 1 to 5 Likert scale which 1 represents 'strongly disagree', 2 represents 'disagree', 3 represents 'normal', 4 represents 'agree' and 5 which imply 'strongly agree'.

Figure 1.3: Table of measurement of Likert scale

Strongly disagree	Disagree	Normal	Agree	Strongly agree
1	2	3	4	5

Questionnaire composition

Table 3.6: Questionnaire composition

SECTION	DIMENSION	NUMBER OF ITEMS
Section A	Demographic Information	4
Section B	**Independent Variable**	
	Over Preparing	4
	Consumer Behaviour	3
	Awareness of Fast Food	3
Section C	**Dependent Variable**	
	Food Waste in Fast Food Restaurant	10

Questionnaire in Section A of the questionnaire

The demographic data for the respondents is the main focus of Section A. There are questions the worker' age, gender, status and compony their work. Table 3.7 show the questions from this section are marked.

Table 3.7 : Questionnaire Used In Section A

ITEMS	
1. Age Group	16-20 years old 21-25 years old 26-30 years old h31-35 years old 36 years old above
2. Gender	Male Female
3. Status	Student Work
4. Company Work	KFC Texas

	Subway Pizza Hut Mc Donald Domino Pizza Other

Questionnaire in Section B and C of the questionnaire

Section B investigated the relationship between over-preparation, consumer behavior, and Fast Food Awareness. Section C examined the dependent variable, Factor influencing food waste in fast food businesses. In this section, 17 questions were created to test particular statements for each component: over-preparation, consumer behavior, fast food awareness, and factors influencing food waste in fast food establishments. Respondents were asked to indicate their level of agreement on a variety of subjects, including Strongly Disagree, Disagree, Normal, Agree, and Strongly Agree. The elements are shown in Table 3.8.

Table 3.8: Proposed questions in Section B and C of the Questionnaire

Dimensions	Items
Over Preparing	1. Does the quantity of food sold seem large? 2. Are dishes with vegetables thrown away more than meat and chicken dishes? 3. Will the fast-food restaurant serve the food according to what has been ordered? 4. Will the fast-food restaurant serve food with large portion than what has been ordered?
Consumer Behaviour	1. Does the customer finish all the food ordered at the fast-food restaurant including vegetable, fruit and soup seasonings? 2. Will customers order food based on its appearance rather than hunger? 3. Is it possible that a customer ordered food they wouldn't eat because they failed to read the detailed of the menu?
Awareness of Fast Food	1. Will food waste be thrown into the trash or collected for composting purposes? 2. Restaurants provide consumers with information regarding food waste awareness?

	3. Are the customers present aware of the negative consequences of food waste?
Food Waste in Fast Food Restaurant	1. Do customers often waste food when eating fast food restaurants? 2. When customer dine at fast food restaurants, did they usually order food that is too much for them? 3. Do customers know about awareness about the effects of food waste practices. 4. Customers will take left uneaten food home. 5. Customers throw food that can still be eaten into the trash bin that has been prepared. 6. Often materials or finished products are discarded because they have expired or are damaged. 7. The size of fast-food portion offered by the restaurant to the customer is suitable to be served in one meal portion for one person to eat. 8. The importance of a fast-food restaurant offering a variety of menu items at reasonable prices to customers. 9. The food cooked and provided to the customer is in the correct serving quantity. 10. Should a restaurant have a system to manage food waste?

3.8 DATA ANALYSIS

Data analysis is the process of gathering, modelling, and analyzing data in order to extract insights that can be used to make decisions. Data analysis is also a method in which statistical and logical methods are systemically applied to explain and demonstrate, condense, recapture and analyses data. Depending on the industry and the goals of the analysis, there are various methods and techniques for performing analysis. Following that, all of the various methods for data analysis are largely based on two core areas of research, namely quantitative methods and qualitative methods. According to Shamoo and Resnik, 2003. Different analytical processes provide a way to draw inductive data inferences and differentiate the signal from the noise (statistical fluctuations) present in the data. The goal of data analysis is to extract useful information from data and make decisions based on that analysis. In research methodology, there are primary and secondary primary data. Primary data is information gathered by researchers from primary sources such as interviews and surveys. Besides, secondary data is information gathered from readily available derivative sources.

The Statistical Package for Social Science (SPSS) is being used in this investigation. SPSS is a system that imports variables automatically and provides variable names, variable kinds, titles, and value labels. These methods are also used to analyses, transform, and establish a characteristics pattern between numerous data variables. It streamlines the research process for researchers, even the most complex data sets may be examined in great detail with the adaptable and adjustable SPSS software. Consequently, there is plenty of time for researchers to identify trends, create predictive models, and reach well-informed conclusions about their specialties. On the other hand, SPSS is also innovative software that researchers primarily use to help anyone to process important information in simple steps. Working on data is a complicated and also time-consuming process. Yet with the help of specific techniques, this programmer can manage and use data efficiently.

3.8.1 Descriptive Analysis

The descriptive analysis was used in the study process to discover the most important data items. It aids the researcher in summarizing the data collected and detecting trends. It refers to the median, or numerical average, of a set of integers. The terms "mode" and "percentage" are frequently used to describe how a group of 300 people is related to data. The study objectives and project design should guide these data analysis.

Before employing descriptive approaches, researchers must be certain of their research topics and intended findings. For example, the best proportion to show is the gender distribution of the respondents. Descriptive analysis is best suited for research with a small sample size and when larger populations are not necessary because it is often used for investigating single variables.

3.8.2 Reliability Analysis

A statistical approach known as reliability analysis is used to assess the consistency or dependability of a system or a set of measurements. It comprises determining the likelihood that a system or component will perform its intended function without error over a set period of time or under specific conditions. Cronbach's Alpha is used in this study to assess the reliability of the scale and the consistency of internal data. According to Nunnally and Bernstein (1994), the appropriate range for alpha value estimates is between 0.7 and 0.8. Internal consistency refers to the degree to which the items on a scale measure the same underlying construct or concept. Cronbach's alpha provides a quantifiable assessment of internal consistency by analyzing how strongly the scale's components correlate with one another. Cronbach's Alpha is a common guideline for evaluating reliability, as shown in Table 3.9.

Table 3.9: Rule of Thumb Cronbach's Alpha

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.05 > \alpha$	Unacceptable

3.8.3 Pearson Correlative

The Pearson correlation coefficient (r) is the most common way of measuring a linear correlation. It is a number between –1 and 1 that measures the strength and direction of the relationship between two variables. A statistical technique called correlation is used to evaluate a potential linear link between two continuous variables. Both the calculation and interpretation are easy. However, correlation is so frequently misused by researchers that some statisticians wish the approach had never been created at all. The purpose of this article is to point out some abuse of correlation in medical research and to offer guidelines for its proper application. Examples of the correlation coefficient's uses have been given using both real-world data and data from statistical simulations. There is a general guideline for interpreting correlation coefficient size.

Table 4.0: Rule of Thumb for Interpreting the Size of a Correlation Coefficient

Size of Correlation	Interpretation
.90 to 1.00 (−.90 to −1.00)	Very strong
.70 to .90 (−.70 to −.90)	High positive
.50 to .70 (−.50 to −.70)	Moderate
.30 to .50 (−.30 to −.50)	Low positive (negative) correlation
.00 to .30 (.00 to −.30)	negligible correlation

Source: Malawi Med J. (2012)

3.9 SUMMARY

In this chapter, the researcher will do the study more clearly by selecting the research's design, target population, sample size, sampling technique, data collection and research instrument, and data analysis.

This study will teach the researcher how to use the target audience, sample size, sampling technique, data collecting, research instruments, and data analysis, in addition to the research design in the thesis.

This chapter also discusses questionnaire administration and prospective study applications. The researcher will also explain the aim and content of each questionnaire item.

As indicated at the end of this chapter, all parts of this study are expected to be used in future research. By completing this chapter, the researcher begins organizing the study survey.

CHAPTER 4

RESULTS AND DATA ANALYSIS

4.1 INTRODUCTION

In general, this chapter describes all the results reached after analyzing the data that have been acquired for this research, as was indicated in the previous chapter. This chapter presents the study outcomes from several analyses. This chapter begins with a responder profile and is supported by demographic data. The normality test was done in the beginning of the analysis to ensure sample normalcy. Each item and variable were also subjected to descriptive analysis.

4.2 SAMPLE AND RESPONSE RATE

It is important to discuss the response rate of this study based on the targeted sample and the actual numbers of responses that have been obtained during the data collection process before describing the demographic profiles of the respondents. 300 respondents and answer were received and 100% respondents are using in this research. In this chapter, we are using purposive sampling method to choose specific participants which is employees at fast food restaurants.

4.3 RELIABILITY ANALYSIS

The scale showing that the test is randomized is connected to the reliability analysis. Furthermore, the Cronbach's alpha coefficient test has demonstrated the amount to which it assesses something using a consistent approach and several items in the scale applied in this study. Cronbach's alpha has been used to assess the internal accuracy of the scale employed in the survey in the current research. Trochim (2006) describes it as the measurements' overall consistency. The consistency of the examinee's performance on the test is what determines the reliability. This computation should have a result value larger than or equal to 0.70. If reliability improves, so will the alpha value. As a result, the table below shows the internal consistency of Cronbach's Alpha values and scales.

Table 4.1 Cronbach's Alpha

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.05 > \alpha$	Unacceptable

Table 4.2 The results of reliability analysis for the study variables

No of items	Study variable	Cronbach's alpha	Remarks (acceptable/not acceptable)
4	Over preparing	0.708	Acceptable
3	Consumer behavior	0.722	Acceptable
3	Awareness of food waste	0.806	Acceptable
10	Food waste at fast food restaurant	0.874	Acceptable

The table presented the results of the reliability analysis for the research variables. The table reveals that Over Preparing is 0.708, Consumer behavior is 0.722, Awareness of Food Waste is 0.806, and Food Waste in Fast Food Restaurant is 0.874 (Dependent Variable). In addition, all of the independent variable items— Over Preparing is 0.708, Consumer behavior is 0.722, Awareness of Food Waste is 0.806—were acceptable because the score result was over 0.70. The dependent variable, Food waste at fast food restaurant, has a value of 0.874, indicating that the variables employed were appropriate and accurate in measuring this variable. In the nutshell, the reliability coefficients for the independent variables in this study according to Cronbach's Alpha were satisfactory and correlated with one another.

4.4 DEMOGRAPHIC PROFILE

Of the total of 300 respondents, 99.3% were Malaysian food consumers. The majority of the respondents (40.6%) were in the 21-25 years old age bracket. In the sample, 46.5% were female, 53.5% is a current employee or has been worked in fast food restaurants. 34.9% of our respondents indicated that 'other' was their preference for corporate job, which is a high percentage. 'Other' is the fast-food restaurant sector in Kota Bharu, Kelantan for example Eddlee Fried Chicken, A&W, Marry Brown, Burger King and Kampung Burger. Table 4.4 illustrated the respondents' profiles.

Table 4.4: Respondents' Profile

Item	Frequency (n)	Percentage (%)
Age Group		
16-20 years old	18	5.9
21-25 years old	124	40.6
26-30 years old	96	31.7
h31-35 years old	33	10.9
36 years old above	33	10.9
Gender		
Male	141	46.5
Female	162	53.5
Status		
Student	54	17.8
Work	249	82.2
Company Work		
KFC	51	16.8
Texas	29	9.6
Subway	27	8.9
Pizza Hut	27	7.9
Mc Donald	36	11.9
Domino Pizza	31	10.9
Other	105	34.9
Total	**303**	**100**

4.5 DESCRIPTIVE ANALYSIS

The relationship between the factors that construct the constructs of the questionnaire (1 = strongly disagree, 2 = disagree, 3 = normal, 5 = agree, 6 = strongly agree) as well as the means and standard deviations for all measured items of over preparing, consumer behavior and awareness of food waste were calculated. The analysis' results are shown in the following table.

Table 4.5: Level of Mean

Level	Mean
Strongly agree	4.01-5.00
Agree	3.01-4.00
Normal	2.01-3.00
Disagree	1.01-2.00
Strongly disagree	0.00-1.00

4.5.1 Variable no 1

Table 4.5.1: Descriptive for Over Preparing

No	Item for variable no 1	Mean	Standard deviation
1	Does the quantity of food sold seem large?	3.6634	0.93791
2	Are dishes with vegetables thrown away more than meat and chicken dishes?	4.2178	0.82915
3	Will the fast-food restaurant serve the food according to what has been ordered?	4.0891	0.79858
4	Will the fast-food restaurant serve food with large portion than what has been ordered?	3.2475	1.19939

The scale for the intention of the employee at fast food restaurant in Kota Bharu to turnover is derived from the table above by adding the means and standard deviations for the five components. The measuring items' averages ranges from 3.25 to 4.22, and their standard deviations were between 1.079 and 1.199.

4.5.2 Variable no 2

Table 4.5.2: Descriptive for Consumer Behavior

No	Item for variable no 2	Mean	Standard deviation
1	Does the customer finish all the food ordered at the fast-food restaurant including vegetable, fruit and soup seasonings.	3.3366	1.23103
2	Will customers order food based on its appearance rather than hunger.	4.2277	0.86753
3	Is it possible that a customer ordered food they wouldn't eat because they failed to read the detailed of the menu?	3.8614	1.05507

The scale for the intention of the employee at fast food restaurant in Kota Bharu to turnover is derived from the table above by adding the means and standard deviations for the five components. The measuring items' averages ranges from 3.33 to 4.23, and their standard deviations were between 0.867 and 1.231.

4.5.3 Variable no 3

Table 4.5.2: n Descriptive for Awareness of Food Waste

No	Item for variable no 3	Mean	Standard deviation
1	Will food waste be thrown into the trash or collected for composting purposes?	3.7921	1.02921
2	Restaurants provide consumers with information regarding food waste awareness.	3.4257	1.13942
3	Are the customers present aware of the negative consequences of food waste?	3.5050	1.08838

The scale for the intention of the employee at fast food restaurant in Kota Bharu to turnover is derived from the table above by adding the means and standard deviations for the five components. The measuring items' averages ranges from 3.42 to 3.79, and their standard deviations were between 1.029 and 1.139.

4.5.4 Variable no 4

Table 4.5.4: Descriptive for Food Waste in Fast Food Restaurant

No	Item for variable no 4	Mean	Standard deviation
1	Do customers often waste food when eating fast food restaurants.	4.1683	0.88103
2	When customer dine at fast food restaurants, did they usually order food that is too much for them.	4.0990	0.85162
3	Do customers know about awareness about the effects of food waste practices.	3.5941	1.16384
4	Customers will take left uneaten food home.	3.6436	1.14149
5	Customers throw food that can still be eaten into the trash bin that has been prepared.	3.7624	1.08404
6	Often materials or finished products are discarded because they have expired or are damaged.	4.1089	0.90144
7	The size of fast-food portion offered by the restaurant to the customer is suitable to be served in one meal portion for one person to eat.	3.9802	0.84548
8	The importance of a fast-food restaurant offering a variety of menu items at reasonable prices to customers	4.3267	0.73389
9	The importance of a fast-food restaurant offering a variety of menu items at reasonable prices to customers	4.1089	0.82069
10	Should a restaurant have a system to manage food waste?	4.2673	0.89025

The scale for the intention of the employee at fast food restaurant in Kota Bharu to turnover is derived from the table above by adding the means and standard deviations for the five components. The measuring items' averages ranges from 3.59 to 4.33, and their standard deviations were between 0.734 and 1.164.

4.6 PEARSON CORRELATION ANALYSIS

One of the essential statistical methods for determining the linear relationship between two numerical variables is the Pearson correlation test. This study has two sections: the independent variables, which are three factors of over preparing, consumer behavior and awareness of food waste, and the dependent variable, which measures intention to the food waste in fast food restaurant around Kota Bharu, Kelantan. The Pearson Correlation is being utilized to provide a more precise measurement with the aim of determining whether the correlation coefficient is significant.

Table 4.6 Show the coefficient range, r

Coefficient range, r	Strength of association
0.91 to 1.0 / -0.91 to -1.0	Very strong
0.71 to 0.90 / -0.71 to -0.90	High
0.51 to 0.70 / -0.51 to -0.70	Moderate
0.31 to 0.50 / -0.31 to -0.50	Small but define relationship/weak
0.01 to 0.30 / -0.01 to -0.30	Slight, Almost negligible

Source: Mukaka (2012

4.6.1 Correlation between independent variable 1 and dependent variable (H1)

Table 4.6.1 Correlation between independent variable 1 and dependent variable (H1)

Correlations			
		Over Preparing	Food Waste in Fast Food Restaurant
Over Preparing	Pearson Correlation	1	.640**
	Sig. (2-tailed)		.000
	N	303	303
Food Waste in Fast Food Restaurant	Pearson Correlation	.640**	1
	Sig. (2-tailed)	.000	
	N	303	303
**. Correlation is significant at the 0.01 level (2-tailed).			

According to table 4.6.1, the correlation between over preparing and food waste in fast food restaurants is acceptable.

4.6.2 Correlation between independent variable 2 and dependent variable (H2)

Table 4.6.2: Correlation between independent variable 2 and dependent variable (H2)

Correlations			
		Consumer Behaviour	Food Waste in Fast Food Restaurant
Consumer Behaviour	Pearson Correlation	1	.554**
	Sig. (2-tailed)		.000
	N	303	303
Food Waste in Fast Food Restaurant	Pearson Correlation	.554**	1
	Sig. (2-tailed)	.000	
	N	303	303
**. Correlation is significant at the 0.01 level (2-tailed).			

According to table 4.6.2, the correlation between consumer behavior and food waste in fast food restaurants is acceptable.

4.6.3 Correlation between independent variable 3 and dependent variable (H3)

Table 4.6.3: Correlation between independent variable 3 and dependent variable (H3)

Correlations			
		Awareness of Food Waste	Food Waste in Fast Food Restaurant
Awareness of Food Waste	Pearson Correlation	1	.588**
	Sig. (2-tailed)		.000
	N	303	303
Food Waste in Fast Food Restaurant	Pearson Correlation	.588**	1
	Sig. (2-tailed)	.000	
	N	303	303
**. Correlation is significant at the 0.01 level (2-tailed).			

According to table 4.6.3, the correlation between awareness of food waste and food waste in fast food restaurants is acceptable. In conclusion, the correlation of the three variable is <0.01, so the hypothesis of this research was accepted.

4.7 CHAPTER SUMMARY

In this chapter, the demographic profile of the respondents was presented. The initially proposed three hypotheses are supported in three distinct methods. The following chapter will cover the findings, their implications, and the conclusion.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

This chapter will examine the findings recapitulation, limitations, and future research recommendations, followed by a study-wide conclusion.

5.2 RECAPITULATION OF THE FINDINGS

The study was carried out to ascertain the association between significant relationships between over-preparation and food waste in fast food businesses. The purpose of this study is to learn about the relationship between consumer behavior that promotes food waste in fast food restaurants and to analyses the important relationship between fast food awareness and food waste in fast food restaurants in Kota Bharu, Kelantan. In this example, primary data was collected via a series of questionnaires to solicit comments from respondents.

The dependent variable in this study was food waste in fast food waste at Kota Bharu, Kelantan. Whereas, for independent variable which consists of over preparing, consumer behavior and awareness of food waste at fast food restaurant.

The table presented the results of the reliability analysis for the research variables. The table reveals that Over Preparing is 0.708, Consumer behavior is 0.722, Awareness of Food Waste is 0.806, and Food Waste in Fast Food Restaurant is 0.874 (Dependent Variable) .Overall, there is

agreement and strong agreement among the majority of respondents on their motivation to avoid or reduce food waste. According to a study done by Bucio et al. (2020) fast food restaurants create a significant quantity of food waste because of issues such as overproduction, misleading portioning, and client plate waste, In addition, all of the independent variable items— Over Preparing is 0.708, Consumer behavior is 0.722, Awareness of Food Waste is 0.806—were acceptable because the score result was over 0.70. On average, young consumers tend to be aware and think about the fast-food waste they generate. The dependent variable, Food waste at fast food restaurant, has a value of 0.874, indicating that the variables employed were appropriate and accurate in measuring this variable.

The sampling frame of this study was the influence toward employee of fast food restaurant among Kota Bharu, Kelantan. in this study, the researcher employed the green table. The medium impact size general practice has been used, and it has produced a sizable number of respondents. According to Green's (1991) table, the study requires at least 76 participants to reach a medium effect size of 0.15 if the number of predictors is equal to 3. This study has two sections: the independent variables, which are three factors of over preparing, consumer behavior and awareness of food waste, and the dependent variable, which measures intention to the food waste in fast food restaurant around Kota Bharu, Kelantan. The Pearson Correlation is being utilized to provide a more precise measurement with the aim of determining whether the correlation coefficient is significant.

5.2.1 Research Question 1 : What is relationship between over preparing is associated with food waste infast food restaurants.

According to Filimonau and de Coteau (2019) It might be challenging to estimate how much food is wasted in the industry that provides food services. Food can be lost or squandered along the food value chain during purchase, storage, preparation, mealtime, and clean-up (plate scraps) (Betz et al.,2015). Fast food restaurants frequently priorities speed and efficiency, which

leads to an overproduction of food to match high demand. This might result in extra food going purchased and eventually going to waste. Based on the analysis done, it was found the strength of the relationship between over preparing is associated with food waste infast food restaurants is high positive (r=0.640, n=303, p<0.001).The finding revealed there was a positive and significant relationship between over preparing is associated with food waste in fast food restaurants.

5.2.2 Research Question 2: What is relationship between consumer behavior that encourages food wastein fast food restaurants.

According to the findings of this study, the strength of the association between consumer behavior that encourages food waste in fast food restaurants is moderate. (r=0.554 , n=303, p<0.001) . Food waste at fast food restaurants is acceptable, according to the correlation between consumer behavior and food waste. Restaurant food waste has been highlighted as a major factor of consumer behavior (Martin-Rios et al., 2018; Papargyropoulou et al., 2016; Wang et al., 2017). Customers ordering more food than they can eat (Papargyropoulou et al., 2016) and leaving food on the plate (Aamir et al., 2018; Bharucha, 2018) are two major causes of food waste. Food waste reduction can be improved by gaining a full understanding of consumer food waste behavior in restaurants.

5.2.3 Research Question 3 : What is relationship between awareness of fast food toward food waste infast food restaurant.

In this study, the result indicated that the strength of awareness of fast food toward food waste in fast food restaurant. ($r=0.588$, $n=303$, $p<0.001$) . According to table 4.6.3, the correlation between awareness of food waste and food waste in fast food restaurants is acceptable. According to research Fagerström (2018) also analyses the impact of fast-food corporations in increasing awareness and taking action against food waste. Fast food chains, according to the author, may apply sustainable practices such as composting food wastes, optimizing manufacturing processes, and collaborating with food recovery organizations. Fast food businesses may raise awareness and encourage responsible consumption by aggressively promoting these programs and transparently discussing their efforts with consumers. In conclusion, the correlation of the three variable is <0.01, so the hypothesis of this research was accepted.

5.3 FINDING AND DISCUSSION

The research of this study about food waste in fast food restaurant at Kota Bharu, Kelantan . This research the relationship between factors affecting food waste, over-preparing, consumer behaviour and awareness of food waste at fast food restaurants in Kota Bharu, Kelantan. As a result, the study's target group consists of all employees who work at fast food restaurants. This are done in order to make the study more relevant to its targeted users. Our type of data collection is quantitative. To collect data, we need a lot of time and effort for us to reach the target number of respondents.

To conclude this discussion hopefully, information will be gathered more effectively in the future by researchers. Be required to have patience when addressing the numerous justifications given by replies. Some respondents refused to participate and complete this survey. Moreover, suggestions for future research or recommendations are best collected in a qualitative format since you may meet face-to-face and gather data easily. This can also help responders grasp the topics and concepts that are being presented.

5.4 LIMITATION

Throughout the examination, a valuable and concrete approach of concluding a study was encountered. Certain flaws, however, cannot be prevented if the discovery process is completed without interruption. As a first constraint, any respondents lacked comprehension of the questionnaire. The questionnaire was then clarified by the investigators. A few flaws should be noted for potential researchers who may use this analysis as a guide. Not all of the information acquired in this study will be applicable in the future.

The limitation was related to the sample size used. The researcher used a green table in this investigation. The common practise of medium impact size was adopted, resulting in a modest number of respondents in the study. To achieve statistical significance in the study, researchers must use a high sample size. Researchers using quantitative studies can determine sample size by using specific calculation procedures that take into account the sampling error, significance level, and confidence level, and we typically use a sampling error of 5%, (significance level ()-.05), and a confidence level (level of confidence) of 95%.

Furthermore, none of the responders completed the questionnaire. Respondents were unwilling to express their thoughts or views about food waste in fast food businesses. They are concerned about the researcher disclosing information to third parties. Because there are so many con artists these days. Finally, the researcher encountered challenges in obtaining the appropriate respondents, mainly fast food restaurant employees or ex-employees. It is challenging for researchers to obtain accurate sample results. A few of respondents provided complete responses, while others found it difficult to complete the questionnaire.

5.5 RECOMMENDATION

5.5.1 Theoretical Recommendation for Future Research

This study looks at the factors that influence food waste in fast food restaurants in Kota Bharu, Kelantan. The variable is excessive preparation linked with food waste, customer behavior that promotes food waste, fast food knowledge of food waste in fast food restaurants is considerably associated and has a highly positive connection relationship, according to this study. Fast food restaurant managers should analyses this research and focus on these determinant variables, as a tip. Because of our country's increasing waste, the conclusions of this study may assist restaurants and customers. This is due to the waste generated by fast food restaurants in the Kota Bharu area. Kelantan is growing more popular.

5.5.2 Practical Recommendation for Future Research

In addition, for practical recommendations, the researcher suggests that all authorities involved need to take note and find initiatives to reduce the waste that occurs in every fast food restaurant in the Kota Bharu area of Kelantan. By holding several awareness campaigns to reduce food waste. Next is that the restaurant management also needs to take action on the problems that occur so that the waste of food waste can be reduced from the current time. In addition, customers also have the right to reduce the problem by buying food in a way that is not excessive so as not to waste.

5.6 CONCLUSION

This research looks on the factors that influence food waste in fast food restaurants in Kota Bharu, Kelantan. Excessive preparation linked with food waste, consumer behavior that increases food waste, and fast food knowledge of food waste in fast food restaurants are the three independent factors in this study. As indicated in Chapter 3, 300 respondents, namely fast food restaurant employees and former fast food restaurant employees, completed the questionnaire.

In addition, in Chapter 4, there is an examination of the questionnaire results. The results were interpreted using descriptive analysis and Pearson correlation. The final results showed that all of the independent variables were significantly related to the dependent variable.

Finally, in Chapter 5, the study gives a summary of data analysis outcomes. All hypotheses were approved in total. In addition, the study's shortcomings and some ideas for further research are presented.

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