Assessment of Consumer Perception in Kota Bharu, Kelantan towards Restaurant Hygiene

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A thesis submitted in the fulfilment of the requirements for the degree of Bachelor of Applied Science (Product Development Technology) with Honours

Faculty of Agro Based Industry

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DECLARATION

I hereby declare that the work embodied in this report is the result of the original research and has not been submitted for a higher degree to any universities or institutions.

_____

Student

Name:

Date:

I certify that the report of this final year project entitled "**Assessment of Consumer Perception in Kota Bharu, Kelantan towards Restaurant Hygiene**" by **Siti Rahimah Binti Rahman**, matric number **F15A0220** has been examined and all the correction recommended by examiners have been done for the degree of Bachelor of Applied Science (Product Development Technology) with Honours, Faculty of Agro-Based Industry, Universiti Malaysia Kelantan.

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Penilaian Persepsi Pengguna di Kota Bharu, Kelantan ke arah Kebersihan Restoran

ABSTRAK

Perbandaran yang pesat ditambah pula dengan gaya hidup yang sibuk dan kemajuan dalam teknologi telah banyak mengubah cara hidup orang ramai. Ini telah menyebabkan berjuta-juta orang berada jauh dari rumah mereka pada setiap hari, sama ada dengan keperluan atau dengan pilihan yang dibuat telah mengakibatkan mereka makan makanan di restoran dan perniagaan katering. Pengguna menjadi lebih prihatin terhadap kebersihan restoran kerana penyakit bawaan makanan yang berbahaya. Tujuan utama kajian ini adalah untuk mengenalpasti faktor yang mempengaruhi persepsi pengguna terhadap kebersihan restoran. Kajian ini menggunakan kaedah kaji selidik. Soal selidik telah diedarkan kepada 384 responden. Kajian ini dijalankan di Kota Bharu, Kelantan dan sampel responden diambil dengan menggunakan kaedah pensampelan mudah. Kebolehpercayaan soal selidik telah diperiksa dengan menggunakan ujian Cronbach Alpha. Keputusan menunjukkan bahawa nilai Cronbach Alpha adalah boleh diterima. Data telah dianalisis dengan mengguna perisian SPSS. Ujian statistik perihalan digunakan untuk menganalisis profil sosio-demografi responden dan persepsi umum tentang kebersihan restoran. Seterusnya, analisis faktor penerokaan mendedahkan enam faktor asas untuk barangan kebersihan restoran iaitu 'petunjuk fungsi', 'petunjuk humanik', 'petunjuk mekanik', 'dalaman restoran', 'kebersihan tandas', dan 'keterampilan makanan'. Tiga faktor terpenting yang ditemui adalah 'petunjuk fungsi', 'petunjuk humanik', dan 'petunjuk mekanik'. Di sini, fungsional merujuk kepada kualiti teknikal makanan dan perkhidmatan. Humanik menekankan prestasi, tingkah laku, dan kemunculan pekerja, manakala mekanik merujuk kepada suasana dan reka bentuk dan elemen teknikal yang lain. Dengan memahami faktor kebersihan yang mencetuskan pemahaman pengguna apabila menilai kebersihan restoran boleh memberi manfaat kepada pengurus perhotelan yang boleh menggunakan maklumat itu untuk meningkatkan kualiti restoran mereka dan seterusnya memuaskan pengguna mereka.

Kata kunci: Persepsi Pengguna, Penyakit Bawaan Makanan, Faktor Kebersihan, Kebersihan Restoran.

Assessment of Consumer Perception in Kota Bharu, Kelantan towards Restaurant Hygiene

ABSTRACT

Rapid urbanization coupled with busy lifestyle and advancement in technology have greatly changed the way of life of many people. This has caused millions of people away from their homes everyday either by necessity or by choice makes them consumed food at the restaurant and catering business. Consumers become more concern about restaurant hygiene due to the dreadful food borne illness. The main aim of this study was to identify the factors affecting consumer perception on restaurant hygiene. This study used survey method. Questionnaire had been distributed to 384 respondents. This study was carried out within Kota Bharu, Kelantan and the respondent was sampled using convenience sampling method. The reliability of questionnaire was checked using Cronbach's Alpha test. Results showed that the Cronbach's Alpha value was acceptable. Data had been analysed using SPSS software. Descriptive stastistical tests were used to analyse the socio-demographic profile of respondents and general perceptions of restaurant hygiene. Next, exploratory factor analysis revealed six underlying factors for the restaurant hygiene items which were 'functional clues', 'humanic clues', 'mechanic clues', 'interior of restaurant', 'restroom personal hygiene', and 'food outlook'. The three most important factors found were 'functional clues', 'humanic clues', and 'mechanic clues'. Here, functional refers to the technical quality of the food and service. Humanic emphasised on the performance, behaviour, and appearance of the employees, while mechanic dealed with the ambience and other design and technical elements. Understanding on hygiene factor that triggered the consumer to perceive when evaluating the restaurant hygiene can be beneficial to food marketers who can use the information to increase their restaurant's quality and to satisfy their consumers.

Keywords: Consumer Perception, Food borne Illness, Hygiene Factors, Restaurant Hygiene.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Life of many people have greatly changed due to rapid urbanization, added with busy lifestyle and advancement in technology (Emmanuel and Solomon, 2015). These changes made millions of people away from their homes everyday either by necessity or by choice (Vangvanitchyakorn, 2000), thus make them to consume food at the restaurant and catering business. The competitive environment among restaurant industry makes them to be more creative, flexible, and responsive (Tung, 2003). Consumers have lots of options to choose as the number of establishment increases. Therefore, restaurateurs should be more aware to the changes of consumer attitudes and behaviour so that they are not only to gain new consumers, but also to retain their present consumers.

Food safety is becoming important in today's food industry, especially in the food service sector, as the risk related to food had increased the consumer concerned. The studies by Boo, Ghiselli, and Almanza (2000), and Dulen (1999) found that mostly people are more concerned on food safety rather than the fat or sodium content in food. Specifically, the major food safety concern when consumers dine out was food hygiene (Ungku Fatimah, 2007). Park, Almanza, Miao, Sydnor, and Jang (2016) stated that in

United States, there are about 48 million people who got sick and 128,000 of them were hospitalized. Also 3,000 people passed away each year from the diseases caused by cross contamination of bacteria or virus, known as food borne illnesses.

When it comes to food preparation, proper and hygienic food handling is very important and must be applied. World Health Organization (WHO) stated that Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. The diseases may spread easily without washing hands and kitchen tools. The washing of hand in a proper way is not as easy as wet, soap the hand and get rid all the dirts, but it is more complicated than that. The most basic yet effective hand washing method in preventing the disease is the seven steps hand washing which includes rubbing all parts of the hand accordingly. Since cross-contamination is the major cause of food poisoning in which the bacteria can move from one food item to other food, it is crucial for individual to be aware of how bacteria spreads so it can be prevented.

Consumer perception on food hygiene is one of the main factors that lead to restaurant choice. Market and Opinion Research International (MORI) in 2004 stated that about 84% of consumers had been answered to a questionnaire survey conducted by Kimberley Clark Professional, that they would not repeat order from the same food service if the food served was unhygienic that can lead to food borne illness, although the food quality itself is fresh and price is reasonable. Another survey conducted by Food Standards Agency (FSA) in 2005 in United Kingdom reported that about 56% of interviewed consumers were concerned more about catering outlets hygiene. Generally, the cleanliness of the food premises was the main concern from the customer views followed by staff or kitchen hygiene of that premise. The different concerned issues raised by several consumers included the issues about cross contamination, and also the food standard. The consumers who are lack in trust to food businesses on hygiene

standards can be found through the study. As indicated in the press release by FSA in 2001, half of the restaurants and catering establishments that were inspected by Environmental Health Officers (EHOs) broke food safety laws (Worsfold, 2006).

1.2 Problem Statement

One of the major public health problems among residents in Malaysia, and other developing countries is food borne illness. Optimum temperature and condition are the growing factors for most bacteria (Abdul-Mutalib, Syafinaz, Sakai, & Shirai, 2015). According to the study of Meftahuddin (2002), Kelantan was recorded as one of the states having high incidence rates in food poisoning and typhoid fever cases between years 1996 to 1997.

The numbers of people eating out in Malaysia had increased consequence to lifestyle change as urbanization in countries accordingly changed. People who spend their money on meals outside were basically expecting to have a good quality of food with an acceptable food hygiene level (Tung, 2003; Sienny & Serli, 2010). It was crucial for the food marketers to know the reasons of customer buying behaviour by producing and serving hygienic food to satisfy the customer while improving the health of consumer. Therefore, this study was conducted to analyse socio-demographic segmentation and general perception of restaurant hygiene. Besides, this study seeks to identify which factors affecting consumer perception of restaurant hygiene. The measured factors were functional, mechanic, and humanic.

1.3 Hypothesis

H_0: Socio-demographic segmentation and general perception of restaurant hygiene do not have effect on determining consumer perception towards restaurant hygiene.

H_1: Socio-demographic segmentation and general perception of restaurant hygiene have effect on determining consumer perception towards restaurant hygiene.

H_0: Functional hygiene factors do not have effect on the consumer evaluation process on restaurant quality.

H_1: Functional hygiene factors have effect on the consumer evaluation process on restaurant quality.

H_0: Mechanic hygiene factors do not have effect on the consumer evaluation process on restaurant quality.

H_1: Mechanic hygiene factors have effect on the consumer evaluation process on restaurant quality.

H_0: Humanic hygiene factors do not have effect on the consumer evaluation process on restaurant quality.

H_1: Humanic hygiene factors have effect on the consumer evaluation process on restaurant quality.

1.4 Objectives

1. To analyse socio-demographic segmentation and general perception of restaurant hygiene.
2. To identify the factors when consumers perceive as important when they evaluate hygiene of a restaurant.

1.5 Scope of Study

This study focuses on perception of consumer towards restaurant hygiene. To be specific, cleanliness is the main part under hygiene that was studied thoroughly in the research. Based on the objectives stated, socio-demographic segmentation and general perception of restaurant hygiene was analysed in order to determine consumer perception towards restaurant hygiene. Besides, the most important restaurant hygiene factors were identified based on consumers' evaluation. Three hygiene factors of restaurant were considered in this study were functional, mechanic, and humanic factors. Functional refers to the technical quality of the food and service. Humanic emphasised on the performance, behavior, and appearance of the employees, while mechanic deal with the ambience and other design and technical elements.

A survey was conducted by using questionnaire to identify which factors of restaurant perceived as important when consumers evaluate a restaurant's hygiene. This study was carried out in Kota Bharu, Kelantan since it is the capital city of that state which has the highest number of food premises. The target samples were from high schoolers up to 66 years old, and the total number of respondent targeted were 384. The number of sample size was based on Table 3.1 in which according to the population of

Kota Bharu, 384 sample sizes must be used so that the obtained result was valid. The data obtained from the survey was analysed by using appropriate statistical methods.

1.6 Significance of Study

The main reason this study was conducted was due to the fact that the number of people dining out had increased significantly over the years. This was contributed by the change of lifestyles and urbanization in the country, and in return the expectation to have good quality of food with an acceptable food hygiene level which can prevent food poisoning also increases (Tung, 2003; Sienny & Serli, 2010). It is crucial for the food marketers to know the customer buying behaviour so that they can do improvements to satisfy the customer's need. Apart from that, money expenses spent for taking care of health due to food borne illness can be saved by practicing good hygiene practices among food handlers, and consumers of the food premises.

1.7 Limitation of Study

The limitation in this study was the geographical segmentation of study. To be detailed, this study only considered restaurants' consumer in Kota Bharu, Kelantan. Besides, the finding of this study was emphasised on the consumer perception towards restaurant hygiene. Therefore, there would be no comparisons about restaurants hygiene between the districts in Kelantan. Lastly, this study was fully self-funded and thus, it would be difficult to conduct a random sampling method due to cost and long period of time to reach the specific respondent.

CHAPTER 2

LITERATURE REVIEW

2.1 Concepts of Consumer Perception

Solomon and Stuart (2000) defined that perception is the process by which people select, organize, and interpret information from the outside world. Basically, the data received is in the sensations structure, in which sensation describes what happens when a person's senses are initially exposed to the external stimulus of a product. The relationship of consumer sensory receptors with a product or service experienced can be identified through sight, sound, smell, taste and texture (Jitu, n.d.). The sensations received will be interpreted by the people based on their past experiences (Tangjitnop & Srisuwattanasakul, 2013). In other words, perception is the first impression that individual draws on the selected items, and then the information obtained is interpreted in order to form a meaningful picture of the world (Quratulain & Karachi, 2012). For example, Starbucks almost relates its entire sensory brand senses of marketing which are senses of hear, smell, and taste. Hear the sounds of background music, including smell the aroma of the grinded fresh coffee in the unique store design are the things the customer may experience through after entering the Starbucks coffee shop, also the taste of hot or cold coffee and food products can be enjoyed in-store at quaint cafe tables (Jitu, n.d.).

The process of perception is very important to the marketers because it is difficult enough for them by putting a lot of efforts in promoting the product or service provided to make the consumers to notice their advertisements. Although consumers notice about that, still there is no guarantee that the consumers will perceive the product or service as marketers want. Therefore, the whole processes including exposure, perceptual selection and interpretation need some care from the marketers to make sure the product or service provided can fulfill the demand from the customer so that the incomes can be generated (Tangjitnop & Srisuwattanasakul, 2013).

2.2 Consumer Perception Theory

The theory of consumer perception strives to describe about behavioural of consumer by analyzing motivations of consumer for buying or not buying particular items. Three items in behavioural of consumer that is related to the consumer perception theory which are self perception, price perception, and benefit perception to quality of life. This theory was applied by the marketers in order to determine on how the consumers perceive their products, also in marketing development and strategies of advertising which planned to keep the current consumers and at the same time to attract the new ones (Jitu, n.d.). However, only self and benefit perception will be explained in this literature review part as price perception is not related to this study (refer 2.2.1 and 2.2.2).

2.2.1 Self Perception

Self perception explains on how an understanding of the motivations is developed by individuals behind their own behaviour self perception theory is made. The values and motivations that drive for buying behaviour is related to consumers self perception. The ways the self perception shaped the consumer buying behaviour is addressed by a study done by researchers at the University of Massachusetts at Amherst. The question on issues such as whether consumers believed their buying decisions had a real effect on impact of environmental was considered in the study. The researchers concluded that consumers' self perception is a driving factor on socially conscious purchase and consumption practices. The consumer, who making a buying decision and the one, who did not make it hold similar views on socially conscious tended to place more weight on issues such as environmental impact (Jitu, n.d.).

In short, self perception theory describes the process in which the people develop their lacking initial attitudes or emotional responses by observing their own behaviour and coming to conclusions as to what attitudes must have driven that behaviour (David, 2015).

2.2.2 Benefit Perception

"It's good, and it's good for you" is a phrase in which most of consumers already familiar with due to it is frequently linked to food advertising. In order to determine the factors affected consumer perception on nutritional value of food, researchers from Marquette University, Louisiana State University, and University of Arkansas had conducted a survey regarding to matter. As a result, the researchers found that

consumers tend to reject general, unsupported claims of enhanced nutrition, especially concerning high nutritional value for food that is traditionally viewed as unhealthy (Essay, 2016). The researchers also theorized that consumers would demonstrate a trend toward applying more scrutiny to nutrition claims and would demand more specific information about the food they purchase.

2.3 Eating Out Behaviour

In 2015, the sales of food and drink from the industry of restaurant in United States have reached about 745.61 billion U.S dollars. The number of people visiting the restaurant increased rapidly during warm weather over another, where it was reported that almost 19 million includes foreigners visited a full service restaurant, while a quick service restaurant was visited by more than 49 million people in 2016 during spring season. In contrast to Malaysia, the number of people eating out is low as the women tend to cook meals for the household, and the eating at home, and this was the traditional practice was among Malaysian both during the working days and the weekends. However, the pattern of eating has changed over the years due to transformation of social urbanization. The new pattern of eating among Malaysian was observed by Noraziah and Norihan (2003), Maznah (2003), and Zainuddin (2004). Ali and Abdullah (2012) stated that Noraziah and Norihan (2003), Maznah (2003), and Zainuddin (2004) found that the eating behaviour can be identified and categorized in terms of place of eating, time of eating, food types, and the eateries themselves.

2.4 Customer Satisfaction

Customer satisfaction is defined by Tahir, Waggett, and Hoffman as a customer's perspective based on expectation and then subsequent post purchase experience. In fact, it was an evaluation of a products or services provided by the company on its level of quality either the quality of products or services fulfills the customer expectation or else exceeds the expectation. Customer satisfaction is a key factor in contribution to the success of a company. This is because customer satisfaction plays an important role in generation of profit to the company. The positive side from customer satisfaction cannot be denied as the customer loyalty which tends to repeat buying the same things over other products comes from the satisfaction of the customer towards the products or services provided. In a highly competitive market, customer satisfaction is indeed, a crucial key that builds strong and long-term relationships between the consumers and the firm (Jashireh, Slambolchi, & Mobarakabadi, 2016). Therefore, the companies being more concerned in measuring the satisfaction of customer towards their products or services in achieving successful organization.

Customer satisfaction or happiness of customer on using a certain products or experiencing the services provided by the company gives an impact towards the customer behavioural intentions. From previous studies by the researchers, customer satisfaction proves that it has positive effects on indicators of behavioural intention, such as repetition on purchasing, retention, word of mouth behaviour, loyalty on the same brands, and profitability (Jashireh, Slambolchi, & Mobarakabadi, 2016). Customer satisfaction is not limited since an equally impressive result also being found in healthcare research, in which Williams (1994) stated that patients who are satisfied are more likely to comply with medical treatment regimens, meanwhile Baker (1990) noted

that satisfied patients are more likely to utilize services in the future. Jashireh, Slambolchi, and Mobarakabadi (2016) considered satisfaction evaluation on consumer perception towards product and service offering to be a “global evaluation”. Global evaluations of service experiences have been described by researchers as a cognitive evaluation of the sum total of satisfactions with the individual elements or attributes of all the products and services that make up the experience (Jashireh, Slambolchi, & Mobarakabadi, 2016).

2.5 Service Quality

Service is defined as any intangible act or performance that one party offers to another that does not result in the ownership of anything (Kotler & Keller, 2009). Need for services are employed in a company. This is one of the ways for the company to approach the customer to promote products, especially for those new developed companies. Solomon (2009) explained that the things that consumer who always looks for in product offering is a quality. In other words, quality can be defined as the valuable characteristic and features of a product or service which is important to customer satisfying.

The management and marketing service quality used to extend the evaluation of consumer perception on service or product either it meets or exceeds the requirement from the consumer or not. Therefore, good service quality helps in maintaining loyal customer while poor service quality can lead the consumer to choose other products with better quality over the offered products. Service quality is defined as the differences between customer expectations and perception of service (Agbor, 2011). Service quality measurement is a good way in analysing the satisfaction of consumer.

SERVQUAL model which is developed by Parasuraman et al. (1985) is one of the most useful tools in measuring the factors of service quality. It is used to assess consumer perception regarding the important criteria of service quality. Firstly, Parasuraman et al. (1985) used SERVQUAL model to identify ten factors, later the factors were reduced into five which were tangibility, reliability, responsiveness, assurance, and empathy. Tangibility dimension engaged with physical facilities, equipment, and appearance of personnel. Reliability dimension related to ability to perform the promised service dependably and accurately. Responsiveness dimension is willingness to help consumers and provides prompt service. Assurance dimension is knowledge and courtesy of employees and their ability to inspire trust and confidence. Empathy dimension is caring individualized attention the firm provides to its consumers (Agbor, 2011).

Becker (1999) stated that SERVQUAL model has been widely applied in a variety of services. However, there is an issue about the model, in which it is not suitable for identifying the critical characteristics in certain business such as hospitality industry (Seung, 2012). Researchers discussed that SERVQUAL model must not be applied to specific industry setting because the results obtained from the measurement of five factors is not relevant (Saleh & Ryan, 1991; Babakus & Boller, 1992). Misunderstanding between the researchers lead to the development of instrument: LODGSERV and DINESERV that can be used to measure the quality service of hospitality industry.

2.6 Service Quality and Customer Satisfaction in the Restaurant

The number of people eating out for every day has been reaching into millions. Hall (1977) noted that "eating out" person has their own demands and tastes which surely differ to each other according to several factors. The development of variety restaurant services from the food stalls on the street into the luxurious restaurants which provide satisfaction surrounding area is due the different preferences in consumer. The development of the restaurant is to provide meals to the customer who are the travelers, workers, schoolchildren and also to the people who love to dine out (Vangvanitchyakorn, 2000). The variety of restaurant cuisines gives more options to the consumer to choose and select the best one regarding to their preferences. However, mostly consumer tends to select the restaurant with a good quality service and clean surrounding. Therefore, the restaurant services compete to each other by improving the condition and surrounding of the restaurant in order to satisfy the consumer (Seung, 2012).

Becker (1999) stated that the component in the competitive strategy includes providing quality to a product or service. From the previous service quality and customer satisfaction studies by the researchers, they found that the food quality, human service, physical environment, cleanliness, convenient location, speedy service, and reasonable price and value factors help in raising the level of customer satisfaction towards restaurant service (Seung, 2012).

Functional factor, mechanic factor, and humanic factor were suggested by Wall and Berry (2007) in measuring the service quality of a restaurant since these factors help the consumer to evaluate the restaurant accordingly. A functional factor is the technical quality of the food itself and the accuracy or efficiency of the service. A

mechanic factor indicates nonhuman elements in the service environment consisting of the ambience and other design including equipment, facility layout, lighting, and color. A humanic factor covers the performance, behaviour, and appearance of the employees (Wall & Berry, 2007).

2.7 Hygiene

World Health Organization (WHO) stated that hygiene is related to health. Hygiene is important in preserving health to the people and preventing the diseases from occuring. A good personal hygiene practice is a key factor in preventing the diseases from spread, thus maintaining healthy body. Lifestyle behaviour plays an important for a person taking care and practicing personal hygiene. Examples of daily routine which can contribute to good hygienic practices include bathing, washing hand before eating, and washing the clothes. The accumulation of germs and pathogenic bacteria can be reduced and prevented through good personal hygiene practices.

2.7.1 Cleanliness in Restaurant

Cleanliness is a crucial aspect in food industry especially the restaurant which is responsible in serving the meals to the consumers. The issues of the cleanliness of the restaurant have been rising accordingly with food safety either from the consumer views or marketers. This is due to the increasing numbers of people eating out since they well contributed in evaluating the restaurant cleanliness. According to the Center for Science in the Public Interest (2008), dining out or having food away from home contributes

half percent to the food borne illnesses. Basically, improper of food handling among the workers resulted in food borne illness.

When a consumer getting disease from the food in which they consumed from the restaurant services, then the owner of the restaurant must be responsible towards their customer. A good way in preventing the disease from occurring or affecting the consumers is by providing hygienic food and also making sure that a safe and clean place surrounding always priority before the food is serving to the consumer. The Food Code has been developed as a guideline for the food service industry so that the problems regarding to food borne illness can be reduced.

The most dangerous problem regarding to restaurant cleanliness that introduced by Center for Disease Control [CDC] and researchers is temperature holding. It is important for the people who involved in food serving to know because the growth of bacteria in a food can be controlled by adjusting the temperature to suitable condition. If it is handled improperly, then the bacteria can affect the consumer and food handlers' health status. Therefore, it is crucial to handle the temperature accordingly so that many pathogens can be prevented from multiplying to the levels that can cause food borne illness. Todd et al. (2007) reported that 20% that leading to food borne illness is improper hand washing. The most basic yet effective hand washing technique is seven steps hand wash which helps in reducing the germs on the hands. This is because the millions of germs on hand are the main contribution in spreading the viruses and pathogens (Seung, 2012).

Brewer and Rojas (2008) conducted a study in order to investigate the customer attitude towards food safety issues. From the study, the result showed that 47% of the consumers responded that they considered eating safe very significant. 42.6% of the total respondents believed food from a restaurant was the most likely source of food

borne illness. The study of Brewer and Rojas (2008) also found that 59% of consumers were concerned about inspections of restaurant cleanliness. To be specific, food safety and cleanliness left a doubt to restaurant customer, so restaurant services should have efforts to satisfy the customer demand about healthy lifestyle.

Table 2.1 shows items that are related to the restaurant cleanliness which have been used by Wall and Berry (2007) to measure service quality in the restaurant. These items are classified into three categories which are functional, mechanic and humanic clues.

Table 2.1: Factors of Cleanliness Restaurant by Wall and Berry (2007).

Types of Service Clue	**Items**
Functional	**Food**
	-Freshness
	-Presentation
	-Healthy menu options
	-Temperature of food
	Exterior of restaurant
	-Garden and driveway
	-Building exterior
	-Parking lot
	-Age of building
	-Neighborhood of restaurant
	Restroom appearance
	-Dirty or soiled sink
	-Dirty floor
	-Dirty, cracked wall, and ceiling tiles
	-Trash in toilets
	-Odor in restroom

Table 2.1 (Continued): Factors of Cleanliness Restaurant by Wall and Berry (2007).

Types of Service Clue	Items
Mechanic	**Interior of restaurant**
	-Seat cushions
	-Carpet and floors
	-Windows
	-Furniture
	-Bar/lounge
	-Windowsills
	Restroom personal hygiene
	-No toilet paper
	-No soap
	-No hot water
	-No paper towels/drying device
	Dining room personal health
	-Place ware and eating utensils (plates, forks, etc.)
	-Glassware
	-Table cloth and napkins
Humanic	**Server's appearance**
	-Hair style
	-Uniform
	-Hand and Nails
	-Accessories
	Server's behaviour
	-Bare-hand contact with food
	-Improper handle glassware and dishes
	-Eating/ drinking
	-Smoking
	-Sickness (coughing, sneezing, runny nose, etc.)
	-Multitasking employee

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The main aim of this study was to investigate the consumer perception of restaurant hygiene. Socio-demographic segmentation, general perception of restaurant hygiene, and restaurant factors that greatly impact consumer perception have been identified. Functional, mechanic, and humanic factors were the independent variables considered in this study. The research design and methods employed in this study were discussed comprehensively in this chapter.

In this chapter, research methodology was separated into research design, sampling method, data collection methods, research instrument development, measurement and scaling, data processing and data analysis. Statistical Package for the Social Sciences (SPSS) software has been used to analyse the collected data. The purpose of research methodology was to ensure that the correct procedures were used so that the best outcomes can be obtained at the end of the study.

3.2 Research Design

Quantitative research design has been used to collect data and to examine the hypothesis in order to achieve research objective. Creswell (2003) described quantitative research employ strategies of inquiry such as experimental and surveys, and collect data on predetermined instruments that yield into statistical data (Williams, 2007). There are four types of quantitative research designs including descriptive, correlational, quasi-experimental and experimental. Center for Innovation in Research and Teaching (CIRT) stated that the differences between the four types of quantitative research designs primarily relates to the degree the researcher designs for control of the variables in the experiment. Therefore, the relationship between independent variables and dependent variables could be determined and examined for further research.

Descriptive research is used to describe about the phenomena attributes through observation or through discovery of correlation between two or more phenomenon (Shuttleworth, 2008). There were three main types of descriptive method: observational method, case-study method, and survey method. Survey method was the one that has been used in this study. According to Hale (2011), participants or respondents would answer questions administered through interviews or questionnaires in survey method research, then the responses given would be described and analysed by the researchers.

3.3 Sampling Method

Convenience sampling method was employed where a questionnaires was distributed to respondents directly. Convenience sampling is affordable, easy and the subjects are readily available (Etikan, Musa, & Alkassim, 2016). This sampling method enables researchers to gain a large number of questionnaires in which the participants' responses are quickly and economically. The targeted respondents were the consumers of the restaurant, or any respondents who has experiences in dining at the restaurant. Permission from the restaurant owner was obtained before the distribution of questionnaire to the participants in the restaurant to avoid misunderstanding from the owner's perspective.

3.4 Population and Sample

In 2018, population of people in Kota Bharu are 314, 946 people. This study has been conducted in Kota Bharu due to high number of population compared to other districts in Kelantan. According to the population on Kota Bharu, questionnaires have been distributed to the 384 respondents (see Table 3.1). The target population for this study was male and female who were around the youth age which was from high schoolers up to 66 years old. The survey questionnaires were distributed to all races in Kota Bharu including Malay, Chinese, Indian, and others. The respondents must be the consumers from restaurants in Kota Bharu, or else had experiences in dining out at Kota Bharu's restaurant.

3.4.1 Sample Size

In this study, 384 respondents were chosen as the sample size. According to Kline (2005), the minimum rate of sample size is less than 100. The medium number of sample size is in between 100 to 200, while the maximum rate of sample size is more than 200. Small samples may lead to inaccurate results, therefore the higher the number of respondent, the more accurate the data obtained. Gathering large data is not easy to conduct because it involves high number of respondents so tolerance of participant must be considered as well. Besides, high amount of money is needed for costs of transportation and printing if large data is considered. Moreover, to gather large data, time is consuming.

Population size needs to be determined first in order to get the sample size. A number of rules of thumb were proposed by Roscoe (1975) for determining the ideal sample size. Sample sizes larger than 30 and less than 500 were appropriate for most researches (Sekaran, 2003). Krejcie and Morgan (1970) produced a table to determine sample size based on work done by the National Education Association. The process of choosing the sample size would be easier by referring to the sampling size table given by Krejcie and Morgan (1970) (see Table 3.1).

Table 3.1: Sample Size Determining from a Given Population by Krejcie and Morgan (1970).

N - n	**N - n**	**N - n**	**N - n**	**N – n**
10 -10	100 - 80	280 - 162	800 - 260	2800 – 338
15 - 14	110 - 86	290 - 165	850 - 265	3000 – 341
20 - 19	120 - 92	300 - 169	900 - 269	3500 – 346
25 - 24	130 - 97	320 - 175	950 - 274	4000 - 351
30 - 28	140 - 103	340 - 181	1000 - 278	4500 - 354
35 - 32	150 - 108	360 - 186	1100 - 285	5000 - 357
40 - 36	160 - 113	380 - 191	1200 - 291	6000 - 361
45 - 40	170 - 118	400 - 196	1300 - 297	7000 - 364
50 - 44	180 - 123	420 - 201	1400 - 302	8000 - 367
55 - 48	190 - 127	440 - 205	1500 - 306	9000 - 368
60 - 52	200 - 132	460 - 210	1600 - 310	10000 - 370
65 - 56	210 - 136	480 - 241	1700 - 313	15000 - 375
70 - 59	220 - 140	500 - 217	1800 - 317	20000 - 377
75 - 63	230 - 144	550 - 226	1900 - 320	30000 - 379
80 - 66	240 - 148	600 - 234	2000 - 322	40000 - 380
85 - 70	250 - 152	650 - 242	2200 - 327	50000 - 381
90 - 73	260 - 155	700 - 248	2400 - 331	75000 - 382
95 - 76	270 - 159	750 - 254	2600 - 335	1000000 - 384

*Note: N = Population Size and n = Sample Size

3.5 Data Collection Method

To conduct a research, there are different methods used to gather information. Two types of data sources: primary data and secondary data were used in this study. Primary data refers to the first hand data which gathered by the researcher himself. This data can be collected from surveys, observations, experiments, questionnaire, or personal interview methods. Primary data was considered as new information since the

data obtained were from distribution of questionnaires to the restaurant consumers to evaluate the importance of hygiene on restaurant quality. Cost of collecting primary data is more expensive compared to secondary data due to a higher value of cost for a considerable amount of questionnaires, resources needed for the field visits, and a higher amount of the time value.

Secondary data is the data that has already been obtained and compiled by other parties (Awang, 2013). Secondary source interprets, analyses, explains, reviews, or describes a primary source. Literature review in this study was categorized as secondary data which was used to support the argument because the data was already exist. Secondary sources can be obtained through newspaper, journal or magazine articles, encyclopedias and histories. Secondary data is important since it provides information regarding the case study and it can be used as references for future work.

3.6 Research Instrument Development

The questionnaires were divided into three sections. The first section was the questions regarding consumers' demographic information. Second part was the questions about consumer's general perception of restaurant hygiene. This section had used a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree. The third section comprised the questions regarding to restaurant hygiene factor: functional, mechanic, and humanic. This part measured the importance of each item when evaluating restaurant hygiene. A five-point Likert scale also being used in third section from 1 = strongly disagree to 5 = strongly agree.

3.7 Procedure for Data Analysis

The data obtained from the survey were recorded into SPSS software for further analysis. The statistical tests that were considered in this study were described comprehensively in section 3.7.1 to section 3.7.3.

3.7.1 Reliability Test

In order to determine the reliability of the questionnaire, Cronbach's alpha test was used in this study to validate the questionnaire before the actual questionnaire was distributed. The acceptable values of alpha were in range of 0.70 to 0.95. Poor interrelated between items or low numbers of questions will lead to low value of alpha (Tavakol & Dennick, 2011). Table 3.2 provides the Cronbach's Alpha test by Sekaran and Bougie (2010).

Table 3.2: The Cronbach's Alpha Test by Sekaran and Bougie (2010).

Cronbach's Alpha (α)	**Internal Consistency**
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

3.7.2 Descriptive Statistical Test

Descriptive statistics are used to describe the basic features of the data by providing simple summaries about sample and the measures in a meaningful ways. In this study, descriptive statistics were used to describe demographic information of respondents and general perception of restaurant hygiene.

3.7.3 Factor Analysis

Factor analysis was a statistical data reduction and analysis technique that strives to explain correlations among multiple outcomes as the result of one or more underlying explanations, or factors (Hall, 2017). Unexplained factors which influence the co-variation among multiple observations can be discovered through factor analysis. In this study, in order to reduce thirty eight restaurants hygiene items into different factors, factor analysis was conducted.

3.8 Summary

This survey was conducted by using convenience sampling method where 384 respondents were selected randomly in Kota Bharu, Malaysia. Questionnaires had been validated by using Cronbach's Alpha test, descriptive statistical test, and factor analysis was used to analyse the data.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter was devoted to discuss the results obtained in a detailed manner using methods described in the Chapter 3. The purpose of the study was conducted to analyse socio-demographic segmentation and general perception of restaurant hygiene. This study also seeks to identify which factors of restaurant; for example functional, mechanic or humanic which consumers perceive as important when they evaluate hygiene of a restaurant. A questionnare was used to collect the data. Findings were analysed through SPSS and each of the finding was discussed individually. The analysis conducted including internal reliability test, descriptive analysis, and exploratory factor analysis.

4.2 Internal Reliability Test

Reliability is a measure of the internal consistency of a set of scale items (Yaacob, 2013). This study used Cronbach's alpha test to validate the questionnaires. The Cronbach's alpha of 0.6 or higher for a component reflects the measuring items under that particular component provides a reliable measure of internal consistency (Awang, 2012). The purpose of validity is to determine whether the survey measured what it is intended to measure or in other words, validity analysis is used to assess the accuracy of what researchers intend to measure (Seung, 2012). Therefore, this test was applied to check the reliability of both two parts of the questionnaire which were general perception and items of restaurant before they were distributed to 384 targeted respondents. The result of reliability test was shown in Table 4.1.

Table 4.1: The Reliability Test Results Calculated using SPSS.

Item	Cronbach's Alpha	Number of Items
General perception of hygienic restaurant	0.748	9
Restaurant hygiene items	0.947	38

Cronbach's alpha can take values between 0 and 1. The closer the value of Cronbach's alpha to 1, the more reliable the scale of the variable. In general, most researchers agree 0.7 is acceptable (Sekaran & Bougie, 2010; Tavakol & Dennick, 2011). Based on reliability test in Table 4.1, restaurant hygiene items recorded the highest level of Cronbach's alpha which was 0.947 followed by general perception of hygienic restaurant which was 0.748. Since the results showed that both items exceed 0.7 values, therefore both were found to be reliable for these questionnaires.

4.3 Descriptive Analysis

4.3.1 Socio-Demographic Profile of Respondents

Demographic profile was asked in Part 1 of the survey questionnaire. There were total of a six questions asked in order to collect the data based on respondent's demographic profiles. This section asked about the gender, age, ethnic group, status, occupation, and frequency of dined out.

Table 4.2: Respondent Gender.

Gender	Frequency (n=384)	(%)
Male	107	27.9
Female	277	72.1

Table 4.2 represents the number of male and female respondents participated in this study. Out of 384 respondents, 277 female and 107 male respondents were involved in the survey. The percentages were 72.1% and 27.9%, respectively.

Table 4.3: Respondent Age Group.

Age	Frequency (n=384)	(%)
13-21 years	150	39.1
22-30 years	183	47.7
31-39 years	35	9.1
40-48 years	10	2.6
49-57 years	4	1.0
58-66 years	2	0.5

Table 4.3 shows the demographic information of the respondents according to age group, and the respondents' sampled fall into six age groups. In this study, the respondents aged below 13 years and above 66 years were not covered. The age group (22 to 30 years) had the highest number of respondents which was a total of 183 respondents that constituted 47.7% of the samples, whereas the age group of (58 to 66 years) had the least number of respondents which was 2 respondents. The second highest age group was dominated by (13 to 21 years) which had 150 respondents that constituted of 39.1%.

Table 4.4: Respondent Ethnicity.

Ethnicity	**Frequency (n=384)**	**(%)**
Malay	375	97.7
Chinese	3	0.8
Indian	3	0.8
Others	3	0.8

Table 4.4 illustrates the ethnicity information of the respondents who had taken part in this study. Since the survey was conducted mainly in Kota Bharu, Kelantan, the majority of the respondents were dominated by Malay with 375 respondents (97.7%). Meanwhile, the rest of the ethnic groups were Chinese, Indian, and other ethnic group. Other ethnic group had the lowest number of respondents, i.e. 3 respondents (0.8%). The others ethnic comprised Bugis, Dusun, and Indonesia.

Table 4.5: Respondent Marital Status.

Status	Frequency (n=384)	(%)
Single	319	83.1
Married	62	16.1
Divorced	3	0.8
Others	0	0.0

Table 4.5 displays the marital status of the respondents. There were four groups of marital status which including single, married, divorced, and others status. The demographic analysis showed that the single status was having the highest respondents with 319 (83.1%), and followed by married status with 62 respondents (16.1%). Divorced status was far lower than that of the single and married statuses. Only 3 respondents (0.8%) were having divorced status. Lastly, no data were recorded for other status.

Table 4.6: Respondent Occupation.

Occupation	Frequency (n=384)	(%)
Students	261	68.0
Employed	98	25.5
Unemployed	24	6.3
Others	1	0.3

Table 4.6 represents the occupational information of the respondents who had answered the questionnaires. The highest occupational category was students with 261 respondents (68.0%). This was because the majority of respondents who were available and willingly to answer the survey were students. The second highest occupational

category was the employed category with 98 respondents (25.5%). The rest categories were unemployed with 24 respondents (6.3%) and other category which was a pensioner with only 1 respondent (0.3%).

Table 4.7: Respondent Dined Out Frequency.

Dined Out Frequency	**Frequency (n=384)**	**(%)**
0-2 times per week	154	40.1
3-5 times per week	119	31.0
6-8 times per week	57	14.8
9 times and above per week	54	14.1

The frequencies of dining out per week by the respondents were tabulated in Table 4.7. Majority of the respondents with 154 respondents (40.1%) had dined out for 0 to 2 times per week, followed by 119 respondents (31.0%) who had dined out for 3 to 5 times per week. Meanwhile, the rest of the respondents which were 57 out of the 384 respondents (14.8%) dined out for 6 to 8 times per week, and 54 respondents (14.1%) dined out for 9 times and above per week, respectively.

4.3.2 General Perception of Restaurant Hygiene

General perception of restaurant hygiene was asked in part 2 of the questionnaires that consisted of 9 items in order to identify the perception of consumers when evaluating restaurant hygiene as general. The results were shown in Table 4.8.

Table 4.8: Summary of General Perception of Restaurant Hygiene.

No.	Items	Description	Frequency (n=384)	(%)
1.	The hygiene of restaurant is important to me when deciding where to eat.	Strongly disagree	1	0.3
		Disagree	1	0.3
		Neutral	10	2.6
		Agree	59	15.4
		Strongly agree	313	81.5
2.	I have chosen not to eat in a restaurant based on functional factor (eg: food, exterior of restaurant, and restroom appearance) problems.	Strongly disagree	6	1.6
		Disagree	10	2.6
		Neutral	74	19.3
		Agree	141	36.7
		Strongly agree	153	39.8
3.	I have chosen not to eat in a restaurant based on mechanic factor (eg: interior of restaurant, restroom personal hygiene, dining room personal health) problems.	Strongly disagree	6	1.6
		Disagree	17	4.4
		Neutral	59	15.4
		Agree	128	33.3
		Strongly agree	174	45.3
4.	I have chosen not to eat in a restaurant based on humanic factor (eg: server's appearance and server's behaviour) problems.	Strongly disagree	7	1.8
		Disagree	17	4.4
		Neutral	72	18.8
		Agree	133	34.6
		Strongly agree	155	40.4
5.	Hygienic restaurant is important for me to decide whether I will return to a restaurant or not.	Strongly disagree	5	1.3
		Disagree	2	0.5
		Neutral	16	4.2
		Agree	83	21.6
		Strongly agree	278	72.4

Table 4.8 (Continued): Summary of General Perception of Restaurant Hygiene.

No.	Items	Description	Frequency (n=384)	(%)
6.	The hygiene of restaurant is important to me when evaluating overall restaurant quality.	Strongly disagree	2	0.5
		Disagree	3	0.8
		Neutral	16	4.2
		Agree	108	28.1
		Strongly agree	255	66.4
7.	I have high expectations of hygiene for high class restaurants.	Strongly disagree	4	1.0
		Disagree	13	3.4
		Neutral	55	14.3
		Agree	86	22.4
		Strongly agree	226	58.9
8.	A hygienic restaurant will increase my overall level of satisfaction.	Strongly disagree	3	0.8
		Disagree	3	0.8
		Neutral	32	8.3
		Agree	104	27.1
		Strongly agree	242	63.0
9.	I tend to complain to restaurant employees if I perceive that the restaurant is dirty.	Strongly disagree	15	3.9
		Disagree	37	9.6
		Neutral	143	37.2
		Agree	105	27.3
		Strongly agree	84	21.9

For the first statement, “the hygiene of restaurant is important to me when deciding where to eat”, results found out that the majority of respondents, 313 out of 384 respondents (81.5%) strongly agreed to the statement. Meanwhile, there was only 1 (0.3%) respondent, who strongly disagreed and another 1 (0.3%) respondent disagreed to the statement. For the second statement, about 77% of respondents agreed or strongly agreed that restaurants’ functional factor plays an important role when choosing a

restaurant. If the foods, exterior of restaurant, and restroom appearance have hygienic problems, the respondents tend to not eat in that particular restaurant. However, about 4% of respondents whether strongly disagreed or disagreed to that statement. In other words, the respondents choose to eat at the restaurant, even that particular restaurant having a problem to taking care of the hygiene of food, exterior of restaurant, and restroom appearance.

For the third statement, about 78% of the respondents chose not to eat at the restaurant, if that particular restaurant has problems with the mechanic factor. Mechanic factor of restaurant comprises interior of restaurant, restroom personal hygiene such as toilet, and dining room personal health. However, there were 23 respondents (6%) strongly disagreed and disagreed to the statement, implying that the respondents still eat at the particular restaurant even though the mechanic factor was not satisfied. For the fourth statement, results showed that majority of the respondents which were 155 respondents (40.4%) strongly agreed that the respondents choose not to eat at the restaurant if that particular restaurant having humanic problems regarding the appearance and behaviour of the servers, followed by 133 respondents (34.6%) who agreed to the statement.

For the fifth statement, a total of 94% of the respondents strongly agreed and agreed that hygienic restaurant was an important factor in a consumers' decision about whether to return or not to the restaurant in the future. Meanwhile, minority of the respondents which were merely about 2% was strongly disagreed or disagreed on the statement of return decision to that particular restaurant. As for the next statement, results showed that the hygiene of restaurant is an important factor to consumers when evaluating the overall restaurant quality. Majority of the respondents (94.5%) strongly agreed or agreed to the statement.

The next statement is regarding the spending cost of a restaurant and expectations of restaurant hygiene. Concerning restaurants that are more expensive, majority of the respondents responded that they have higher expectations towards restaurant hygiene. Results showed that more than half of the respondents which were 226 respondents (58.9%) strongly agreed, followed by 86 respondents (22.4%) agreed with the statement. As for overall level of satisfaction, the respondents answered that hygienic restaurant increases the level of satisfaction when dining out. From Table 4.8, most of the respondents which were 242 respondents strongly agreed and 104 respondents agreed that hygienic restaurant increased their overall level of satisfaction.

The last statement was about complaints. Much of the respondents which were 143 respondents (37.2%) chose to be neutral, meaning that the respondents neither agreed nor disagreed in order to make complain to the restaurant employees if the restaurant was dirty. Meanwhile, the second highest response given by the 105 respondents (27.3%) was they agreed to make complaint, followed by 84 respondents (21.9%) which were strongly agreed that they tend to complain to restaurant employees if they perceive that the restaurant is dirty. As the overall results indicated, restaurant hygiene was found to be an important factor in consumers' restaurant quality evaluations, future purchasing decisions and overall level of satisfaction. However, it was found that even though respondents answered that they perceive restaurant hygiene to be a significant factor for their dining experience, they tend not to lodge complaints when they recognize that a restaurant's level of hygiene does not meet their standards.

4.4 Analysis and Ranking of Restaurant Hygiene Items

As part of the analysis, the Cronbach's alpha is 0.947, indicating that the five-point Likert scale used is reliable at 0.05 significant level (Yap, Abdul-rahman, Wang, & Skitmore, 2018). Table 4.9 shows mean score and ranking of important restaurant hygiene items considered when the consumer evaluating restaurant hygiene.

From Table 4.9, all 37 items obtained mean scores above 3.000 except for one item which was 'uniform of employee' with mean value of 2.7552 indicating that the respondents ranked this item lowly. Thus, this item was discarded for further analysis. 'Freshness of food' had the highest mean value of 4.5859 and listed on the top of overall ranked of items. Then, followed by 'restaurant furniture', 'seat cushions', and 'neighborhood of restaurant' items which has had exceeded mean value of 4.3000. 'Glassware in dining room' and 'no hot water in restroom' were tied with a mean value of 3.8568. If two or more items have the same mean value, the one with the lower standard deviation is considered to be more important (Wang & Yuan, 2011), resulting in 'glassware in dining room' being ranked 19th while 'no hot water in restroom' is ranked 20th.

Table 4.9: Mean Score and Ranking of Important Restaurant Hygiene Items.

Overall ranking	Restaurant hygiene items	Mean	Standard deviation
1	Freshness of food	4.5859	.71749
2	Restaurant furniture	4.3255	1.11752
3	Seat cushions	4.3125	1.07000
4	Neighborhood of restaurant	4.3099	1.14043
5	Dirty floor	4.2578	1.14426
6	No paper towels or drying device in restroom	4.1953	.88556
7	Food contact surface (plates, glassware)	4.1927	.87575
8	Restaurant window sills	4.1875	.88282
9	Food presentation	4.1849	.86395
10	Unprotected food	4.0651	1.34550
11	Carpet and floors	4.0625	.98620
12	Accessories wearing by the employee	4.0547	.89363
13	Dirty or soiled sink in restroom	4.0417	1.37806
14	Temperature of food	3.9792	1.40294
15	Restaurant parking lot	3.9740	1.37655
16	Bare-hand of server contact with food	3.9349	.99263
17	Eating or drinking behaviour of the server	3.9323	.97520
18	Age of restaurant building	3.8672	1.29089
19	Glassware in dining room	3.8568	.96020
20	No hot water in restroom	3.8568	.97638
21	Table cloth and napkins	3.8464	1.06442
22	Windows	3.8333	.93291
23	Building exterior	3.7995	1.34374
24	No soap in restroom	3.7943	1.00488
25	Bar or lounge	3.7891	1.10294
26	Placeware and eating utensils	3.7734	.93005

Table 4.9 (Continued): Mean Score and Ranking of Important Restaurant Hygiene Items.

Overall ranking	Restaurant hygiene items	Mean	Standard deviation
27	Hair style of server	3.7474	1.06511
28	Dirty, cracked wall, and ceiling tiles	3.7422	1.33782
29	Multi tasking employee	3.7344	1.03327
30	Improper handling of glassware and dishes	3.6901	1.01442
31	No toilet paper in restroom	3.6589	1.06977
32	The server is having sickness	3.6484	.99021
33	Odour in restroom	3.6432	1.30486
34	Trash in toilets	3.5729	1.19393
35	The employee is smoking	3.5677	1.03242
36	Garden and driveway of restaurant	3.5599	1.22274
37	Hand and nails of food server	3.2760	1.09442
38	Uniform of employee	2.7552	1.11363

4.5 Exploratory Factor Analysis

Factor analysis is a data reduction and summarisation technique, it is often used to examine the relationship between a large number of significantly correlated variables and reduce these variables to a manageable level for appropriate interpretation (Doloi, 2008). Factor analysis was conducted in order to explore the new factors of 37 significant restaurant hygiene items.

To ensure suitability of the survey data, the Kaiser-Meyer-Olkin (KMO) test and the Bartlett's Test of Sphericity are conducted (Field, 2013). KMO is a statistic that shows the proportion of variance in variables that may be caused by underlying factors. Meanwhile, Bartlett's test of sphericity tests the hypothesis that correlation matrix is an

identity matrix, which would indicate that variables are unrelated and therefore unsuitable for structure detection. The measure of sampling adequacy by KMO was 0.940 (Table 4.10). This KMO value of 0.940 was excellent since it exceeded the recommended value of 0.6 by Kaiser (1974). Table 4.10 indicates that the Bartlett's Test of Sphericity was significant (Chi-square = 8256.041, p-value < 0.000). The significance level indicates that the correlation matrix is not an identity matrix and that the restaurant hygiene items are sufficiently inter-correlated. In fact, this test is used to compare the observed correlation matrix to the identity matrix. Thus, both tests stipulate the aptness of the variables for factor analysis. These two measures which are KMO value closes to 1.0 and the Bartlett's test significance value closes to 0.0 suggest that the data is appropriate to proceed with its reduction procedure (Awang, 2012).

Table 4.10: KMO and Bartlett's Test of Sphericity.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.940
Bartlett's Test of Sphericity	Approx. Chi-Square	8256.041
	df	666
	Sig.	.000

Both of eigenvalues and the percentage of variance approaches are used to determine the number of factors (Yap et al., 2018). The principal component analysis (PCA) extracted six components with eigenvalues greater than 1.0. The scree plot from Figure 4.1 reveals that the graph is almost flat from the sixth component, indicating that each successive component accounts for decreasing amounts of the total variance. The scree plot suggests that it is appropriate to retain six factors of variables as suggested by Yaacob (2013). Varimax orthogonal rotation of PCA was used to interpret these factors. The six factors account for 60.6% of the total variance explained, which is more than

the 60% needed for adequate construct validity (Ye, Jin, Xia, & Skitmore, 2014). It is also worthwhile to note that the proportion of total variance explained tended to decreases as the total number of items factored increased (Yap et al., 2018). Out of the 37 variables, 31 were extracted under the six components with factor loadings of greater than 0.50, indicating the variables are practically significant (Hair, Black, Babin, & Anderson, 2010). Table 4.11 summarises the final rotated component matrix. Commonalities of variables were generally good at over 0.50 for most variables. Yap et al., (2018) stated that the label of the component can be assigned based on those variables with higher factor loadings or based on the whole set of variables representing the variables.

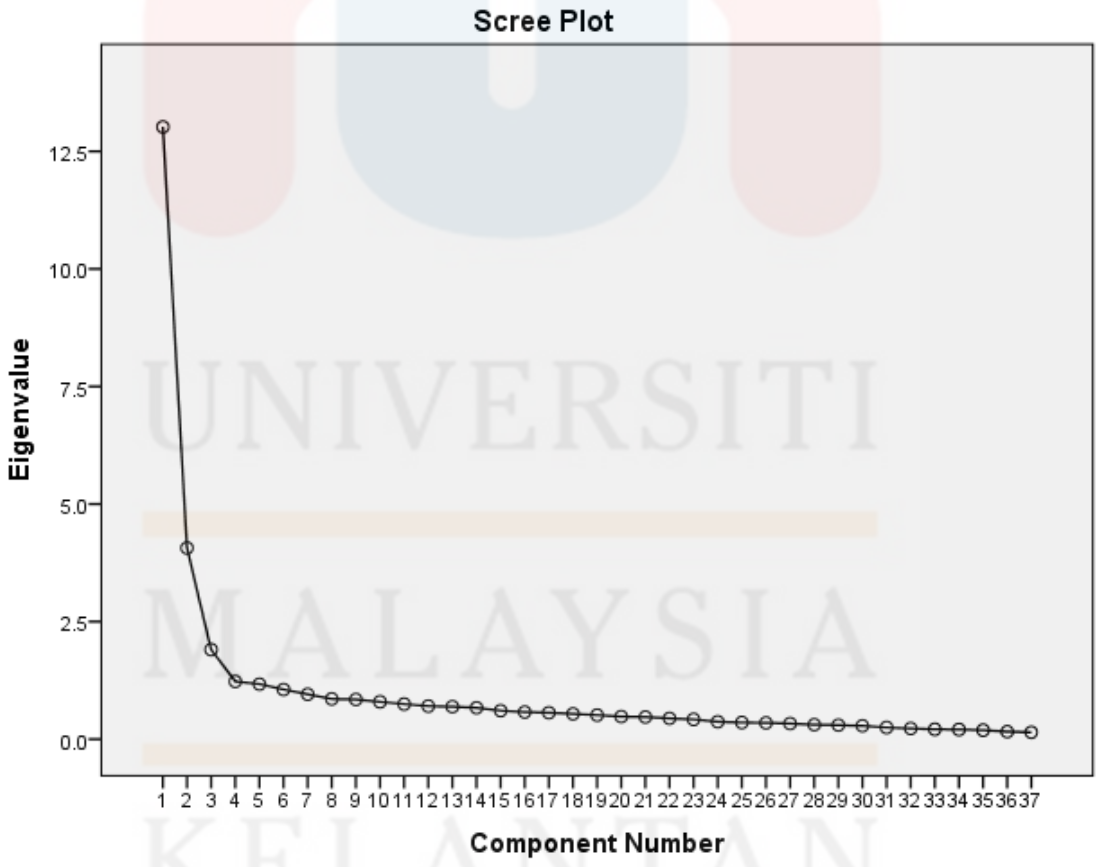

Figure 4.1: Scree Plot for 37 Restaurant Hygiene Items.

4.6 Discussion of Factor Analysis Results

Table 4.11: Summarized Factor Analysis of Restaurant Hygiene Items.

	Factor Loadings	Eigenvalue	Variance explained (%)
Factor 1: Functional clues		13.021	35.2
Unprotected food	.870		
Dirty or soiled sink in restroom	.863		
Parking lot	.852		
Dirty, cracked wall, and ceiling tiles of restroom	.834		
Building exterior	.815		
Age of building	.803		
Temperature of food	.771		
Garden and driveway	.674		
Neighborhood	.657		
Restroom odour	.575		
Dirty floor of restroom	.572		
Trash in toilets	.509		
Factor 2: Humanic clues		4.066	10.9
Multi tasking employee	.650		
Sickness employee (coughing, sneezing, etc)	.643		
Bare-hand contact with food	.629		
Hair style of server	.543		
Smoking	.542		
Hand and nails	.512		
Factor 3: Mechanic clues		1.905	5.1
Windows	.711		
Bar or lounge	.646		
Placeware and eating utensils (plates, etc)	.639		
Table cloth and napkins	.568		

Table 4.11 (Continued): Summarized Factor Analysis of Restaurant Hygiene Items.

	Factor Loadings	Eigenvalue	Variance explained (%)
Factor 4: Interior of restaurant		1.227	3.3
Furniture	.673		
Windowsills	.669		
Carpet and floors	.575		
Seat cushions	.550		
Factor 5: Restroom personal hygiene		1.172	3.2
No soap	.798		
No paper towels/ drying device	.554		
No toilet paper	.509		
Factor 6: Food outlook		1.056	2.9
Freshness	.730		
Presentation	.534		
Cumulative variance explained			60.6

4.6.1 Factor 1: Functional Clues

The items which fall under factor 1 are mostly related to the technical quality of the food and service. Hence, factor 1 was renamed as "functional clues". Factor 1 accounted for 35.2% of the total variance explained. Many studies (Bentancor et al. 2007; Alli 2004; Becker 2003) stated an establishment shall not be located nearby to the place which clearly brings a threat to food safety or suitability. Specifically, establishments shall be located away from environmentally polluted areas and industrial activities which pose a serious threat to contamination of food, areas subject to flooding unless sufficient safeguards are provided, areas prone to infestations of pests, and areas from which waste, either solid or liquid, cannot be removed effectively (Djéni, Kouamé,

Traoré, Nevry, & Dje, 2014). Thus, it is imperative that the parking lot, garden and driveway, and environment of neighborhood of the restaurant to be fully considered before a restaurant are built to reduce health problems regarding food borne illness among consumer.

Besides of hand washing, cross-contamination, basic knowledge of pathogens of importance in food safety, personal hygiene and general food handling practices, Onyeneho and Hedberg (2013) mentioned that temperature control also contributes to food safety issues concerns. Thus, it is important for the food server to know the right temperature for the right food for retaining the food shelf life accordingly.

According to Klara (2004), if the restroom is clean and functioning, it can have a positive impact on the consumers' perception of the restaurant. Besides, a study by Scarcelli (2007) found that respondents had both chosen not to eat at, as well as not to return to, an establishment in response to a visit to the restroom. Similar to other studies, Barber and Scarcelli (2009) reported that restrooms were important factor when assessing the cleanliness of an eating establishment. Thus, it is important to maintain the hygiene of restroom to satisfied many consumers.

4.6.2 Factor 2: Humanic Clues

The items which fall under factor 2 are mostly related to the performance, behaviour, and appearance of the employees. Hence, factor 2 was renamed as "humanic clues". Factor 2 accounted for 10.9% of the total variance explained. Poor and faulty food handling practices have been identified as the leading cause of the majority of food borne illness (Clayton, Griffith, Price, & Peters, 2002). Some of poor hygiene practices exhibited at work includes lack of provision of medication by establishment and

irregular use of sanitizers were identified by Ifeadike, Ironkwe, & Adogu (2014). A study by Andy et al. (2015) revealed that most (81.5%) food vendors claim that they had never been trained on food handling and preparation. This becomes a serious issue among food marketers as poor food handling can inflate the risk of food borne illness.

Djéni et al., (2014) reported that most of food handlers (90%), although there are opportunities, they never washed their hands, 52% of them wore jewelry during the production process and some of them continued to handle foods despite they had skin lesions. These jewelry and skin lesions may contribute to microbial and chemical contamination of food. The study by Lee et al. (2017) reported that Salmonella was detected on the hands of about half of the participated food handlers. This study raises public health concerns, as most of the food handlers were not wearing gloves during food handling, as observed during their study. This situation could eventually increase the risk of food poisoning. To lesser the problems arise due to improper handling among food marketers and the restaurant employee, special training should be provided by the food establishment.

4.6.3 Factor 3: Mechanic Clues

The items which fall under factor 3 are mostly related to the ambience and other design and technical element of restaurant. Hence, factor 3 was renamed as “mechanic clues”. Factor 3 accounted for 5.1% of the total variance explained. Improper handling when cleaning the windows, bar or lounge, placeware, and table cloth and napkin leads to contribution of transfering pathogenic bacteria to food item and cause illnesses. The factors that influenced the contamination of bacteria to food items are not limited to improper handling, but also temperature during storage, composition of gases, humidity,

interaction between microorganisms and the food, as well as between microorganisms contaminate the food (Hamad, 2012). After all, as consumers, we can always avoid getting food borne illness by choosing the right food and the right place to dine (Abdul-Mutalib et al., 2015).

The mechanic clues in the service environment assist consumers in understanding the service. Mechanic clues stimulate consumers' service perceptions because these clues are part of the experience (Wall & Berry, 2007). Consumers' perceptions of service quality are individual assessments of a service experience, and customers' expectations are the values against which such service experiences are judged (Garg, 2015).

4.6.4 Factor 4: Interior of Restaurant

The items which fall under factor 4 are mostly related to the interior of restaurant, thus it was named after it. Factor 4 accounted for 3.3% of the total variance explained. All items have factors loading above 0.5 indicates that the items are practically significant. A study by Park et al. (2016) reported that four dimensions which including the dining room of restaurant considered the most important dimensions in terms of consumer perceptions about sanitation conditions in full-service restaurants. Besides, Park et al. (2016) highlighted that the exterior of the restaurant is not as important to consumers as compared to the interior factors. Contrary to this study, exterior of the restaurant which falls under functional clues was found out to be the most important element as this factor has the highest total variance explained (35.2%) compared to interior of restaurant (3.3%).

4.6.5 Factor 5: Restroom Personal Hygiene

The items which fall under factor 5 are mostly related to the restroom of restaurant. Hence, factor 5 was renamed as “restroom personal hygiene”. Factor 5 accounted for 3.2% of the total variance explained. In general, the highest number of pathogen was at restroom area. Therefore, the facilities for personnel of any food industries should be adequate, while drying device and paper towel should be provided. This is to reduce the potential of cross-contamination among consumers and employee. Ifeadike, Ironkwe, and Adogu (2014) stated that the number of respondents who used soap for washing their hands before and after handling raw materials like meat and poultry were less than 0.33%, while the rest of the respondents did not wash hands according to good hygienic practices.

4.6.6 Factor 6: Food Outlook

Both items (food freshness and presentation) which fall under the last factor are related to the food. These items are emphasised on the outlook of food. Hence, factor 6 was renamed as “food outlook”. Factor 6 accounted for 2.9% of the total variance explained. Dulen (1999) stated that food, atmospherics, and service quality are the key elements that will increase the appealing of a meal experience. Food is the primary purpose when consumers visit a restaurant, thus, the food sanitation factor is an essential factor affecting diners’ perceptions (Park et al., 2016).

4.6.7 Summary

Factor analysis was conducted in this study to explore factors regarding the restaurant hygiene items. From Table 4.11, the factor analysis results indicated that there were six factors for the restaurant hygiene items which were functional clues, humanic clues, mechanic clues, interior of restaurant, restroom personal hygiene, and food outlook. The three most important factors found were ‘functional clues’, ‘humanic clues’, and ‘mechanic clues’. These three factors had accounted for more than 50% of the total variance explained. Here, functional refers to the technical quality of the food and service. Humanic emphasised on the performance, behavior, and appearance of the employees, while mechanic deals with the ambience and other design and technical elements.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In conclusion, restaurant hygiene was found to be an important element in consumers' restaurant quality evaluations, future purchasing decisions and overall level of satisfaction. Besides, consumer perception of restaurant hygiene were found to constitute six factors includes functional clues, humanic clues, mechanic clues, interior of restaurant, restroom personal hygiene, and food outlook. The three most important factors found were 'functional clues', 'humanic clues', and 'mechanic clues'. Functional refers to the technical quality of the food and service. Humanic emphasises on the performance, behavior, and appearance of the employees, while mechanic deals with the ambience and other design and technical elements.

The findings gained from this study can help the food marketers to improve the level of restaurant hygiene in order to gained consumer satisfaction by managing diverse factors of a restaurant. For those food marketers who seek to expand their business to international level, this study is helpful in providing the needed information.

5.2 Recommendations

Future research could be done on identifying what are the important attributes for evaluating the restaurant hygiene by consumers. This study has only analysed descriptive statistical analysis on socio-demographic profile of respondent and general perception of restaurant hygiene. Therefore, it is suggested that future researches can be performed using other statistical method, for example regression or ANOVA to analyse the significant of the study.

Apart from that, future research can also compare the perception respondent in terms of different cuisines of restaurant. Lastly, survey on different districts of Kelantan can be conducted to see how different places of culture affect the attitudes and behaviour of the respondents regarding to the restaurant hygiene aspects.

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APPENDIX A

Table A.1: Response Rate of Questionnaire.

Case Processing Summary

		N	%
Cases	Valid	384	100.0
	Excluded[a]	0	.0
	Total	384	100.0

a. Listwise deletion based on all variables in the procedure.

Table A.2: Cronbach's Alpha Test for General Perception of Restaurant Hygiene.

Reliability Statistics

Cronbach's Alpha	N of Items
.748	9

Table A.3: Cronbach's Alpha Test for Restaurant Hygiene Items.

Reliability Statistics

Cronbach's Alpha	N of Items
.947	38

Table A.4: Frequency Table of the Demographic Profile.

Statistics

		Gender	Age	Ethnicity	Other ethnicity	Status	Other status	Occupation	Other occupation	Dined out frequency
N	Valid	384	384	384	384	384	384	384	384	384
	Missing	0	0	0	0	0	0	0	0	0

Table A.5: Descriptive for Gender of Respondent.

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	107	27.9	27.9	27.9
	Female	277	72.1	72.1	100.0
	Total	384	100.0	100.0	

Table A.6: Descriptive for Age of Respondent.

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13-21 years old	150	39.1	39.1	39.1
	22-30 years old	183	47.7	47.7	86.7
	31-39 years old	35	9.1	9.1	95.8
	40-48 years old	10	2.6	2.6	98.4
	49-57 years old	4	1.0	1.0	99.5
	58-66 years old	2	.5	.5	100.0
	Total	384	100.0	100.0	

Table A.7: Descriptive for Ethnicity of Respondent.

Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	375	97.7	97.7	97.7
	Chinese	3	.8	.8	98.4
	Indian	3	.8	.8	99.2
	Other	3	.8	.8	100.0
	Total	384	100.0	100.0	

Table A.8: Descriptive for Other Ethnicity of Respondent.

Other Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		381	99.2	99.2	99.2
	bugis	1	.3	.3	99.5
	dusun	1	.3	.3	99.7
	indonesia	1	.3	.3	100.0
	Total	384	100.0	100.0	

Table A.9: Descriptive for Status of Respondent.

Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	319	83.1	83.1	83.1
	Married	62	16.1	16.1	99.2
	Divorced	3	.8	.8	100.0
	Total	384	100.0	100.0	

Table A.10: Descriptive for Other Status of Respondent.

Other Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	384	100.0	100.0	100.0

Table A.11: Descriptive for Occupation of Respondent.

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	261	68.0	68.0	68.0
	Employed	97	25.3	25.3	93.2
	Unemployed	24	6.3	6.3	99.5
	Other	2	.5	.5	100.0
	Total	384	100.0	100.0	

Table A.12: Descriptive for Other Occupation of Respondent.

Other Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		383	99.7	99.7	99.7
	pensioner	1	.3	.3	100.0
	Total	384	100.0	100.0	

Table A.13: Descriptive for Dined Out Frequency of Respondent.

Dined Out Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-2 times per week	154	40.1	40.1	40.1
	3-5 times per week	119	31.0	31.0	71.1
	6-8 times per week	57	14.8	14.8	85.9
	9 and above times per week	54	14.1	14.1	100.0
	Total	384	100.0	100.0	

Table A.14: Descriptive for General Perception of Restaurant Hygiene.

Statistics

I tend to complain to restaurant employees if I perceive that the restaurant is dirty.	384	0
A hygienic restaurant will increase my overall level of satisfaction.	384	0
I have high expectations of hygiene for high class restaurants.	384	0
The hygiene of restaurant is important to me when evaluating overall restaurant quality.	384	0
Hygienic restaurant is important for me to decide whether I will return to a restaurant or not.	384	0
I have chosen not to eat in a restaurant based on humanic factor (eg: server's appearance and server's behaviour) problems.	384	0
I have chosen not to eat in a restaurant based on mechanic factor (eg: interior of restaurant, restroom personal hygiene, dining	384	0
I have chosen not to eat in a restaurant based on functional factor (eg: food, exterior of restaurant, and restroom	384	0
The hygiene of restaurant is important to me when deciding where to eat.	384	0
	N	Valid
		Missing

Table A.15: Descriptive for General Perception of Restaurant Hygiene (Statement 1).

The hygiene of restaurant is important to me when deciding where to eat.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Disagree	1	.3	.3	.5
	Neutral	10	2.6	2.6	3.1
	Agree	59	15.4	15.4	18.5
	Strongly Agree	313	81.5	81.5	100.0
	Total	384	100.0	100.0	

Table A.16: Descriptive for General Perception of Restaurant Hygiene (Statement 2).

I have chosen not to eat in a restaurant based on functional factor (eg: food, exterior of restaurant, and restroom appearance) problems.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.6	1.6	1.6
	Disagree	10	2.6	2.6	4.2
	Neutral	74	19.3	19.3	23.4
	Agree	141	36.7	36.7	60.2
	Strongly Agree	153	39.8	39.8	100.0
	Total	384	100.0	100.0	

Table A.17: Descriptive for General Perception of Restaurant Hygiene (Statement 3).

I have chosen not to eat in a restaurant based on mechanic factor (eg: interior of restaurant, restroom personal hygiene, dining room personal health) problems.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.6	1.6	1.6
	Disagree	17	4.4	4.4	6.0
	Neutral	59	15.4	15.4	21.4
	Agree	128	33.3	33.3	54.7
	Strongly Agree	174	45.3	45.3	100.0
	Total	384	100.0	100.0	

Table A.18: Descriptive for General Perception of Restaurant Hygiene (Statement 4).

I have chosen not to eat in a restaurant based on humanic factor (eg: server's appearance and server's behaviour) problems.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	1.8	1.8	1.8
	Disagree	17	4.4	4.4	6.3
	Neutral	72	18.8	18.8	25.0
	Agree	133	34.6	34.6	59.6
	Strongly Agree	155	40.4	40.4	100.0
	Total	384	100.0	100.0	

Table A.19: Descriptive for General Perception of Restaurant Hygiene (Statement 5).

Hygienic restaurant is important for me to decide whether I will return to a restaurant or not.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.3	1.3	1.3
	Disagree	2	.5	.5	1.8
	Neutral	16	4.2	4.2	6.0
	Agree	83	21.6	21.6	27.6
	Strongly Agree	278	72.4	72.4	100.0
	Total	384	100.0	100.0	

Table A.20: Descriptive for General Perception of Restaurant Hygiene (Statement 6).

The hygiene of restaurant is important to me when evaluating overall restaurant quality.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.5	.5	.5
	Disagree	3	.8	.8	1.3
	Neutral	16	4.2	4.2	5.5
	Agree	108	28.1	28.1	33.6
	Strongly Agree	255	66.4	66.4	100.0
	Total	384	100.0	100.0	

Table A.21: Descriptive for General Perception of Restaurant Hygiene (Statement 7).

I have high expectations of hygiene for high class restaurants.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.0	1.0	1.0
	Disagree	13	3.4	3.4	4.4
	Neutral	55	14.3	14.3	18.8
	Agree	86	22.4	22.4	41.1
	Strongly Agree	226	58.9	58.9	100.0
	Total	384	100.0	100.0	

Table A.22: Descriptive for General Perception of Restaurant Hygiene (Statement 8).

A hygienic restaurant will increase my overall level of satisfaction.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.8	.8	.8
	Disagree	3	.8	.8	1.6
	Neutral	32	8.3	8.3	9.9
	Agree	104	27.1	27.1	37.0
	Strongly Agree	242	63.0	63.0	100.0
	Total	384	100.0	100.0	

Table A.23: Descriptive for General Perception of Restaurant Hygiene (Statement 9).

I tend to complain to restaurant employees if I perceive that the restaurant is dirty.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	3.9	3.9	3.9
	Disagree	37	9.6	9.6	13.5
	Neutral	143	37.2	37.2	50.8
	Agree	105	27.3	27.3	78.1
	Strongly Agree	84	21.9	21.9	100.0
	Total	384	100.0	100.0	

Table A.24: Total Variance Explained from Factor Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.021	35.191	35.191	13.021	35.191	35.191	7.678	20.750	20.750
2	4.066	10.990	46.181	4.066	10.990	46.181	4.277	11.559	32.309
3	1.905	5.149	51.330	1.905	5.149	51.330	3.292	8.898	41.207
4	1.227	3.317	54.647	1.227	3.317	54.647	3.184	8.605	49.813
5	1.172	3.166	57.813	1.172	3.166	57.813	2.457	6.641	56.454
6	1.056	2.855	60.669	1.056	2.855	60.669	1.559	4.214	60.669
7	.954	2.577	63.246						
8	.857	2.315	65.561						
9	.844	2.280	67.841						
10	.794	2.146	69.988						
11	.746	2.016	72.004						
12	.703	1.899	73.903						
13	.690	1.865	75.768						
14	.669	1.808	77.576						
15	.607	1.640	79.216						
16	.577	1.560	80.776						
17	.563	1.521	82.296						
18	.539	1.457	83.753						
19	.512	1.384	85.138						
20	.480	1.297	86.434						
21	.470	1.272	87.706						
22	.443	1.198	88.903						
23	.421	1.138	90.041						
24	.371	1.003	91.044						
25	.354	.957	92.001						
26	.346	.934	92.936						
27	.332	.897	93.833						
28	.308	.832	94.665						
29	.300	.810	95.475						
30	.284	.767	96.242						
31	.249	.674	96.915						
32	.227	.612	97.528						
33	.211	.571	98.099						
34	.206	.557	98.656						
35	.191	.517	99.173						
36	.159	.431	99.603						
37	.147	.397	100.000						

Extraction Method: Principal Component Analysis.

Table A.25: Component Matrix from Factor Analysis.

Component Matrix[a]

	Component					
	1	2	3	4	5	6
RH33	.750					
RH23	.747	-.404				
RH25	.728	-.412				
RH24	.724	-.462				
RH18	.712					
RH12	.685					
RH27	.670	-.572				
RH35	.669	-.566				
RH22	.655	-.448				
RH32	.638					
RH31	.637					
RH30	.637	-.612				
RH29	.633					
RH13	.629					
RH17	.620					
RH38	.610					
RH15	.604					
RH28	.600					
RH26	.599					
RH20	.599			.437		
RH11	.590					
RH36	.589					
RH37	.582					
RH9	.575		.497			
RH3	.554					
RH4	.547					
RH5	.540		.458			
RH10	.515					
RH2	.500	.430				
RH6	.497					
RH16	.477	.431				
RH8	.447					
RH34	.445					
RH21	.452	.452				
RH19	.478			.629		
RH14	.415				.436	
RH1						.481

Extraction Method: Principal Component Analysis.
a. 6 components extracted.

Table A.26: Rotated Component Matrix from Factor Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
RH27	.870					
RH30	.863					
RH35	.852					
RH24	.834					
RH23	.815					
RH25	.803					
RH22	.771					
RH33	.674					
RH38	.657					
RH18	.575					
RH12	.572			.561		
RH28	.509	.507				
RH37		.650				
RH36		.643				
RH34		.629				
RH31		.543				
RH26		.542				
RH16		.512			.428	
RH14		.474				
RH32		.474				
RH29		.438				
RH4			.711			
RH6			.646			
RH2			.639			
RH3			.568			
RH15			.474			
RH11			.434			
RH9	.414			.673		
RH10				.669		
RH13				.575		
RH5				.550		
RH17				.472		
RH19					.798	
RH20					.554	
RH21					.509	
RH1						.730
RH8						.534

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 22 iterations.

Table A.27: Component Transformation Matrix from Factor Analysis.

Component Transformation Matrix

Component	1	2	3	4	5	6
1	.645	.448	.376	.371	.293	.139
2	-.737	.431	.381	.086	.257	.231
3	-.120	-.529	.200	.732	-.240	.270
4	-.052	-.282	-.411	.167	.848	.032
5	.023	.344	-.615	.100	-.228	.664
6	.155	-.370	.354	-.530	.138	.642

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

APPENDIX B

Questionnaire B.1: English Version

UNIVERSITY MALAYSIA KELANTAN

FACULTY OF AGRO BASED INDUSTRY

(FIAT)

RESEARCH TITLE:

ASSESSMENT OF CONSUMERS' PERCEPTION IN KOTA BHARU, KELANTAN TOWARDS RESTAURANT HYGIENE

This research is conducted to fulfill the requirement for the award of degree in bachelors of Applied Science in Technology of Product Development.

The purpose of this survey is to identify the most important factor of restaurant that affects the consumers' perception in evaluating the hygiene of a restaurant. Please answer the following questions by referring to your dining experiences at restaurants. Your feedback is highly appreciated. The identity of respondents will remain anonymous and confidential.

Part 1: Demographic information

Please tick (/) ONLY one box for each of the questions below.

1. Gender

   ☐ Male ☐ Female

2. Age: …….years

3. Ethnic Group

   ☐ Malay ☐ Indian

   ☐ Chinese ☐ Others: …….

4. Status

   ☐ Single ☐ Divorced

   ☐ Married ☐ Others: ……..

5. Occupation

   ☐ Students ☐ Unemployed

   ☐ Employed ☐ Others: ……

6. Frequency of dined out

   ☐ 0-2 times per week ☐ 6-8 times per week

   ☐ 3-5 times per week ☐ 9 times and above per week

Part 2: General perceptions of hygienic restaurant

Please indicate how you feel about with the following issues (please tick (/) ONLY one box).

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

1.	The hygiene of restaurant is important to me when deciding where to eat.	1	2	3	4	5
2.	I have chosen not to eat in a restaurant based on functional factor (eg: food, exterior of restaurant, and restroom appearance) problems.	1	2	3	4	5
3.	I have chosen not to eat in a restaurant based on mechanic factor (eg: interior of restaurant, restroom personal hygiene, dining room personal health) problems.	1	2	3	4	5
4.	I have chosen not to eat in a restaurant based on humanic factor (eg: server's appearance and server's behaviour) problems.	1	2	3	4	5
5.	Hygienic restaurant is important for me to decide whether I will return to a restaurant or not.	1	2	3	4	5
6.	The hygiene of restaurant is important to me when evaluating overall restaurant quality.	1	2	3	4	5
7.	I have high expectations of hygiene for high class restaurants.	1	2	3	4	5
8.	A hygienic restaurant will increase my overall level of satisfaction.	1	2	3	4	5
9.	I tend to complain to restaurant employees if I perceive that the restaurant is dirty.	1	2	3	4	5

Part 3: Restaurant hygiene items

Please indicate how important you consider these items to be when you evaluate restaurant hygiene. I would like to assess how strongly you agree or disagree with every item provided below.

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

	When I evaluate the restaurant hygiene, I always consider items below so that my consideration can prevent me from getting any food borne illness which comes from the contamination of the items with the germs.					
1.	Freshness of food	1	2	3	4	5
2.	Placeware and eating utensils (plates, forks, etc.) in dining room	1	2	3	4	5
3.	Table cloth and napkins	1	2	3	4	5
4.	Windows	1	2	3	4	5
5.	Seat cushions	1	2	3	4	5
6.	Bar or lounge	1	2	3	4	5
7.	Uniform of employee	1	2	3	4	5
8.	Food presentation	1	2	3	4	5
9.	Restaurant furniture	1	2	3	4	5
10.	Restaurant window sills	1	2	3	4	5
11.	No hot water in restroom	1	2	3	4	5
12.	Dirty floor	1	2	3	4	5
13.	Carpet and floors	1	2	3	4	5
14.	Accessories (ring, bangle, etc) wearing by the employee	1	2	3	4	5
15.	Glassware in dining room	1	2	3	4	5
16.	Hand and nails of food server	1	2	3	4	5
17.	Food contact surface (plates, glassware)	1	2	3	4	5
18.	Odour in restroom	1	2	3	4	5
19.	No soap in restroom	1	2	3	4	5

Continued questions:

	When I evaluate the restaurant hygiene, I always consider items below so that my consideration can prevent me from getting any food borne illness which comes from the contamination of the items with the germs.					
20.	No paper towels or drying device in restroom	1	2	3	4	5
21.	No toilet paper in restroom	1	2	3	4	5
22.	Temperature of food	1	2	3	4	5
23.	Building exterior	1	2	3	4	5
24.	Dirty, cracked wall, and ceiling tiles	1	2	3	4	5
25.	Age of restaurant building	1	2	3	4	5
26.	The employee is smoking	1	2	3	4	5
27.	Unprotected food (e.g., uncovered condiments on the table)	1	2	3	4	5
28.	Trash in toilets	1	2	3	4	5
29.	Eating or drinking behaviour of the server	1	2	3	4	5
30.	Dirty or soiled sink in restroom	1	2	3	4	5
31.	Hair style of server	1	2	3	4	5
32.	Improper handling of glassware and dishes	1	2	3	4	5
33.	Garden and driveway of restaurant	1	2	3	4	5
34.	Bare-hand of the restaurant server contact with food	1	2	3	4	5
35.	Restaurant parking lot	1	2	3	4	5
36.	The server is having sickness (coughing, sneezing, runny nose, etc.)	1	2	3	4	5
37.	Multi tasking employee	1	2	3	4	5
38.	Neighborhood of restaurant	1	2	3	4	5

QUESTIONNAIRE B.2: Versi Bahasa Melayu

UNIVERSITI MALAYSIA KELANTAN

FAKULTI INDUSTRI ASAS TANI

(FIAT)

TAJUK KAJIAN:

ASSESSMENT OF CONSUMERS' PERCEPTION IN KOTA BHARU, KELANTAN TOWARDS RESTAURANT HYGIENE

Soal selidik ini dijalankan untuk memenuhi keperluan untuk penganugerahan ijazah Sarjana Muda (Dengan Kepujian) Sains Gunaan Teknologi Pembangunan Produk. Tujuan kajian ini adalah untuk mengenal pasti faktor yang paling penting restoran yang mempengaruhi persepsi pengguna dalam menilai kebersihan restoran. Sila jawab soalan berikut dengan merujuk kepada pengalaman makan anda di restoran. Maklum balas anda sangat dihargai. Identiti responden akan kekal tanpa nama dan sulit.

Bahagian 1: Maklumat demografi

Sila tandakan (/) satu kotak SAHAJA bagi setiap soalan di bawah.

1. Jantina

   ☐ Lelaki ☐ Perempuan

2. Umur: ……..... tahun

3. Kumpulan Etnik

   ☐ Melayu ☐ India

   ☐ Cina ☐ Lain-lain: ……..

4. Taraf Perkahwinan

   ☐ Bujang ☐ Bercerai

   ☐ Berkahwin ☐ Lain-lain: ……

5. Pekerjaan

   ☐ Pelajar ☐ Tidak bekerja

   ☐ Bekerja ☐ Lain-lain: ……

6. Kekerapan makan luar

   ☐ 0-2 kali seminggu ☐ 6-8 kali seminggu

   ☐ 3-5 kali seminggu ☐ 9 kali dan ke atas seminggu

Bahagian 2: Persepsi umum kebersihan restoran

Sila nyatakan bagaimana perasaan anda dengan isu-isu berikut (sila tandakan (/) satu kotak SAHAJA).

1	2	3	4	5
Sangat Tidak Bersetuju	Tidak Bersetuju	Neutral	Bersetuju	Sangat Bersetuju

1.	Kebersihan restoran penting bagi saya apabila membuat keputusan untuk makan.	1	2	3	4	5
2.	Saya memilih untuk tidak makan di restoran berdasarkan masalah-masalah faktor fungsional (contohnya: makanan, luar restoran, dan penampilan tandas).	1	2	3	4	5
3.	Saya memilih untuk tidak makan di restoran berdasarkan masalah-masalah faktor mekanik (contohnya: dalaman restoran, kebersihan tandas peribadi, ruang makan kesihatan peribadi).	1	2	3	4	5
4.	Saya memilih untuk tidak makan di restoran berdasarkan masalah-masalah faktor manusia (misalnya: penampilan pelayan dan tingkah laku pelayan).	1	2	3	4	5
5.	Kebersihan restoran penting bagi saya untuk memutuskan sama ada saya akan kembali ke restoran atau tidak.	1	2	3	4	5
6.	Kebersihan restoran adalah penting untuk saya menilai kualiti keseluruhan restoran.	1	2	3	4	5
7.	Saya mempunyai jangkaan kebersihan yang tinggi untuk restoran bertaraf tinggi.	1	2	3	4	5
8.	Restoran yang bersih akan meningkatkan tahap kepuasan keseluruhan saya.	1	2	3	4	5
9.	Saya cenderung mengadu kepada pekerja restoran jika saya melihat restoran itu kotor.	1	2	3	4	5

Bahagian 3: Item-item kebersihan restoran

Sila nyatakan betapa pentingnya anda pertimbangkan item-item ini apabila anda menilai kebersihan restoran. Saya ingin menilai seberapa banyak anda bersetuju atau tidak bersetuju dengan setiap item yang disediakan di bawah.

1	2	3	4	5
Sangat Tidak Bersetuju	Tidak Bersetuju	Neutral	Bersetuju	Sangat Bersetuju

	Apabila saya menilai kebersihan restoran, saya sentiasa mempertimbang perkara-perkara di bawah supaya pertimbangan saya dapat menghalang saya daripada mendapat penyakit makanan yang berasal dari pencemaran item dengan kuman.					
1.	Kesegaran makanan	1	2	3	4	5
2.	Peralatan memasak dan makan (pinggan, garpu, dll) di ruang makan	1	2	3	4	5
3.	Napkin dan tuala meja	1	2	3	4	5
4.	Tingkap	1	2	3	4	5
5.	Kusyen tempat duduk	1	2	3	4	5
6.	Bar atau lounge	1	2	3	4	5
7.	Pakaian seragam pekerja	1	2	3	4	5
8.	Sajian makanan	1	2	3	4	5
9.	Perabot restoran	1	2	3	4	5
10.	Tingkap tetingkap restoran	1	2	3	4	5
11.	Tiada air panas di tandas	1	2	3	4	5
12.	Lantai kotor	1	2	3	4	5
13.	Permaidani dan lantai	1	2	3	4	5
14.	Pekerja memakai aksesori (cincin, gelang, dll)	1	2	3	4	5
15.	Barangan kaca di ruang makan	1	2	3	4	5
16.	Tangan dan kuku pelayan	1	2	3	4	5
17.	Permukaan sentuhan makanan (pinggan, gelas)	1	2	3	4	5
18.	Bau dalam tandas	1	2	3	4	5

Sambungan soalan:

	Apabila saya menilai kebersihan restoran, saya sentiasa mempertimbang perkara-perkara di bawah supaya pertimbangan saya dapat menghalang saya daripada mendapat penyakit makanan yang berasal dari pencemaran item dengan kuman.					
19.	Tiada sabun dalam tandas	1	2	3	4	5
20.	Tiada tuala kertas atau peranti pengeringan di tandas	1	2	3	4	5
21.	Tiada tisu dalam tandas	1	2	3	4	5
22.	Suhu makanan	1	2	3	4	5
23.	Luaran bangunan	1	2	3	4	5
24.	Dinding dan jubin siling kotor serta retak	1	2	3	4	5
25.	Usia bangunan restoran	1	2	3	4	5
26.	Pekerja merokok	1	2	3	4	5
27.	Makanan terdedah	1	2	3	4	5
28.	Sampah dalam tandas	1	2	3	4	5
29.	Tingkah laku makan atau minum pelayan	1	2	3	4	5
30.	Sinki kotor atau tersumbat dalam tandas	1	2	3	4	5
31.	Gaya rambut pelayan	1	2	3	4	5
32.	Pengendalian barangan kaca dan piring yang tidak betul	1	2	3	4	5
33.	Taman dan jalan masuk restoran	1	2	3	4	5
34.	Pelayan restoran sediakan makanan tanpa memakai sarung tangan	1	2	3	4	5
35.	Tempat letak kereta	1	2	3	4	5
36.	Pelayan tidak sihat (batuk, bersin, selsema, dll)	1	2	3	4	5
37.	Pekerja pelbagai tugas	1	2	3	4	5
38.	Kejiranan restoran	1	2	3	4	5