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**DETERMINANT FACTORS THAT INFLUENCES  
HALAL FOOD STANDARD PRACTICES: A CASE  
STUDY OF CAFETERIA'S OPERATORS AT  
UNIVERSITI UTARA MALAYSIA (UUM)**



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**MASTER OF SCIENCES (MANAGEMENT)  
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JUNE 2016**

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MALAYSIA (UUM)**



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**Thesis submitted to  
School of Business Management  
Universiti Utara Malaysia,  
in Partial Fulfilment of the Requirement for the  
Master of Sciences (Management)**

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## ABSTRACT

As a Muslim, it is compulsory to find halal food. This is because food is the main sources for spiritual and physical formation as a human. Thus products or foods that are produced in line with halal prescriptions are readily acceptable by Muslim consumers as well as consumers from other religions. For a Muslim consumer, halal foods and drinks means that the products have met the requirements laid down by the *Syariah* law whereas for a non-Muslim consumer, it represents the symbol of hygiene, quality and safety product when produced strictly under the Malaysian Standard of Halal Food (MS1500:2009). To ensure the food is halal and meet the standard made by Jakim, there are several factors that need to be emphasized. The study was carried out at cafeteria's operators at UUM Sintok. There are three factors that are believed to influences the standard of halal food in UUM, which are trustworthiness (Status Halal), food safety and personal and societal behaviour. This study is a quantitative research by using a questionnaire that involves the study sample consisted of 103 respondents. The methodology used in this research is statistical analysis descriptive and inferential that involves the use of frequencies and percentages for analysing the demographics of respondents, independent t-test samples, the test of one-way ANOVA, Pearson correlation analysis and multiple regression analysis. Overall, the findings based on the analysis of Multiple regression analysis test found that food safety and trustworthiness (Halal Status) are the most influences that effect the MS1500:2009.

**Key word:** Halal Food, Halal Food Standard (MS1500:2009), Trustworthiness (Halal Status), Food safety, Personal and Societal Behaviour

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## ABSTRAK

Sebagai seorang islam, mencari sumber makanan yang halal sangat dituntut dalam islam. Hal ini kerana makanan merupakan sumber utama pembentukkan rohani dan jasmani seseorang manusia itu. Oleh itu produk atau makanan yang dihasilkan sejajar dengan preskripsi halal sedia diterima oleh pengguna Islam dan juga pengguna daripada agama-agama lain. Bagi pengguna Muslim, makanan dan minuman yang halal bermakna bahawa produk tersebut telah memenuhi keperluan yang ditetapkan oleh undang-undang Syariah manakala bagi pengguna yang bukan Islam, ia mewakili simbol kebersihan, kualiti dan keselamatan produk apabila dihasilkan sepenuhnya di bawah jaminan Standard Malaysia Makanan Halal (MS1500:2009. Untuk memastikan makanan itu halal dan memenuhi piawaian yang telah ditetapkan oleh pihak Jakim, terdapat beberapa faktor yang perlu diberi penekanan. Kajian ini telah dijalankan keatas pengusaha kafeteria di UUM. Terdapat tiga faktor yang dipercayai mempengaruhi standard makanan halal di UUM, antaranya amanah (Status Halal), keselamatan makanan dan tingkah laku peribadi dan masyarakat. Kajian ini merupakan kajian jenis kuantitatif dengan menggunakan soal selidik yang melibatkan sampel kajian terdiri daripada 103 responden. Metodologi kajian yang digunakan dalam kajian ini adalah kaedah analisis statistik deskriptif dan inferensi yang melibatkan penggunaan kekerapan dan peratusan bagi menganalisis demografi responden, ujian sampel t-bebas, ujian hubungan satu hala ANOVA, analisis kolerasi Pearson dan analisis regrasi berganda. Keseluruhan hasil dapatan kajian berdasarkan analisis ujian Analisi Regresi Linear Berganda mendapati keselamatan makanan dan amanah (Status Halal) telah mempengaruhi Standard Malaysia Makanan Halal (MS1500:2009).

**Kata kunci:** Makanan Halal, MS1500:2009, Amanah (Status Halal), Keselamatan Makanan, Tingkah laku Peribadi dan Masyarakat

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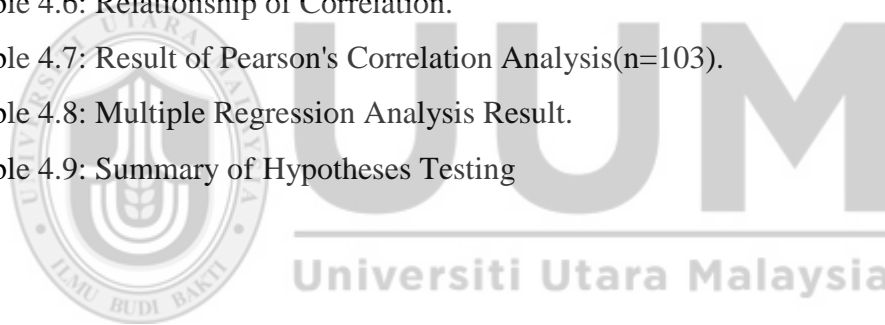
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## LIST OF ABBREVIATIONS

HACCP	Hazard Analysis, Critical control Points
ISO	International Organisation for Standardisation
GHP	Good Hygiene Practices
GMP	Good Manufacturing Practice
MS1500:2009	Malaysian Standard for <i>Halal</i> Food-Production, Preparation, and Storage
NRAEF	National Restaurant Association Educational Foundation
QA	Quality Assurance
QMS	Quality Management System
UUM	Universiti Utara Malaysia
SPSS	Statistical Package for Social Science



## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

This is a study on the relationship between determinant factors of MS15002009: trustworthiness (*Halal* status), food safety at personal and societal behaviour at cafeteria's operators in UUM. It is intended to examine which factor or component will have an impact on the standard of MS1500:2009.

All Muslims must ensure that whatever they eat, practice and buying are compliant to *syariah* because it gives them a sense of safety. Therefore, the industry in *halal* food is very important to Muslims around the world. The *halal* industry also gives many contributions to the growth of the economic and also to the development of society. The *halal* concept refers to the way of manufacturing goods and services that are accordance to the Islamic law or *syariah*. Therefore, the *halal* food industry is very important for Muslims in order for them to ensure that the foods they eat every day are compliant with *syariah*.

*Halal* is a unique Islamic concept. Based from Shafie and Othman (2006), the concept of *halal* is not just for food only but also an integral to the Islamic way of life. Besides that, the Islamic rules and manners also reflect the Islamic ideas and values by overseeing the individual Muslims (Al-Harran and Low, 2008). According to Chang (2006), the certification of *halal* as a benchmark for quality, hygiene, and safety. Moreover, it also follows the *Syariah* (Islamic law).

Malaysia is one of the countries that implemented the *halal* standard throughout the country. Moreover, Malaysia also has been seen as an advanced Islamic country with modest in business incentives. Therefore, this result has been considered as a foundation for the progress of global *halal* food industries.

According to Mohd Yusoff (2004), the *halal* concept also includes the quality and hygiene. This *halal* concept does not focus only on food and drink, but also in all other matters in our life. Nevertheless, the *halal* concept is also very important to other non-food products such as in the financial and pharmaceutical products. According to Shafie & Othman (2006), Muslims nowadays demand *halal* products are being qualified in order to increase their sureness level to use and consumes the products.

Al-Harran & Low (2008) stated that, although Muslims consumers are alike with any other consumers, yet they demand the quality and healthy products. Besides that, they also demand that the products or foods must comply with the *Syariah* requirements. According to Dube *et al.*, 1994, all the Muslim customers are also the same with other customers when eating in a restaurant. Therefore, all the restaurant owners want their customers' satisfaction strongly influenced by the food quality.

Food industries have their own quality system not only manufacturing and production sector. The Quality Assurance (QA) Systems available for food industry such as Good Manufacturing Practice (GMP), Hazard Analysis, Critical control Points (HACCP) and International Organisation for Standardisation (ISO) standard (Gabriela, *et all* 2005). In this research will explain about the quality system that suitable for food industry at Cafeteria at UUM.



As in Universiti Utara Malaysia (UUM), competition among food stalls and cafeterias increase resulted from the implementation of food court styles cafeteria to replace the solely owned restaurants in the campus. To improve customer satisfaction, cafeteria operators must understand the *halal* awareness and hygiene factors and also the behaviour to influences the customer satisfaction. Thus, improvement in cafeteria quality will be beneficial for the student and staff whose daily meals are closely related to these food services provider.

A Muslim is seen as a symbol of trust towards his or her religion when he or she follow all the Islamic dietary laws. Riaz & Chaudry (2004) have stated that the concept of *halal* and *haram* is always revolving around the life of a Muslim. Based on the Islamic dietary laws; *halal*, *haram* and *syubha* are the three main categories of food for Muslims. Based on the Islamic dietary laws as found in the *Quran*, *hadith* and in the *fiqh* (jurisprudence) of the Muslim jurists, *halal* is a term describing foods that are legalized for Muslims to consume. *Haram* foods are forbidden for Muslims, while *syubha* foods are unsure. Thus, *syubha* foods should be evaded.

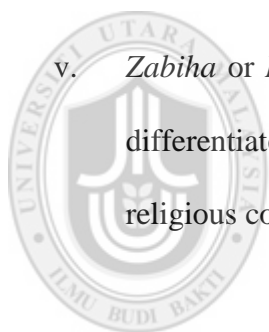
*Hadith* by Bukhari and Muslim that was narrated by Abu Abdullah An-Nu'man, our Prophet Muhammad (SAW) said:

*"Halal (lawful) is clear and haram (prohibited) is clear; in between these two are certain things which are suspect or syubha or mushbooh".*

Therefore, people who leave the *syubha*, is blameless towards his or her religion and their ethics. The *hadith* further explains: "Anyone who gets involved in any of these suspected items may fall into the unlawful and prohibited.

Riaz and Chaudry (2004) states that, there are five major terms that are used to describe the acceptability of food:

- i. *Halal* refers to "permissible and lawful".
- ii. *Haram* refers to "prohibited or forbidden".
- iii. *Syubha* is something "questionable or doubtful".
- iv. *Makrooh* usually related to "someone's dislike" for a product or not obviously *haram*.
- v. *Zabiha* or *Dhabiha* as a term used by Muslims in the United States to differentiate meat that has been slaughtered by Muslims or without religious connotation.



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## 1.2 Problem Statement

According to Rozin, Fischler, Imada, *et al.*, (1999), food is an important source of physical well-being and as a foundation of worry, preference and anxiety. Most of the students at UUM will buy the food at the cafeteria. As a student, they need a healthy food that can help them have a healthy lifestyle. As a result, food provider needs to have the MS1500:2009 in their cafeteria. One of the criteria is to make sure that the foods produced are *halal* and safe to consume. In order for the food providers to achieve the MS1500:2009, there are several factors need to be evaluated.

Nowadays, the theory of *halal* does not be limited to the meaning the "food is pork free". However, it should cover the forms of emulsifiers and other food contents such as gelatine, glycerine, enzymes and also additives or seasoning such as stabilizers, flavourings, colourings, breadcrumbs and monosodium glutamate (MSG) (Mohd Aliff & *et all*, 2015). These will help the food that has been improved or added by unsure materials or enzymes into the *halal* products.

Besides that, the *halal* issues in the slaughtering of poultry and meat produce in a manner inconsistent with the rites of Islam and food ingredients intermixed with non-*halal* materials. According to (Zakaria, 2008) it is difficult to verify the *halalness* of food or other groceries especially when they come pre-packaged or processed. For instance, it is difficult to trace a chicken that has not been slaughtered appropriately when it has already cut into pieces. Hence, the chicken is forbidden for the Muslims for consumption.

Moreover, the food provider must make sure that the raw materials they used to have the *halal* logo that provided by JAKIM requirement. This is because some of the raw materials they choose used the fake or unauthorised *halal* logo. The researcher conducted several interviews with the food provider by asking them about how they get their raw materials. Some of the food providers buy the raw materials from Thailand because the price of the raw materials is cheaper than Malaysia. For example, sausages from Thailand cost about RM10.00 for 20 pieces but Ayamas brand product from Malaysia cost RM6.00 for 6 pieces. Besides that, the product from Thailand also has a variety of flavours and some of these flavours are not available in Malaysia's market. At the same time, *halal* logistics are important in guaranteeing that the *halal*

truthfulness of the supply chain which is mean from raw materials until food will be served to the customer.

Another issue in *halal* is the authenticity issue in food ingredients and food products. Authentication is defined as a process in which a food is confirmed as compliant to its label description derivatives where it is cheaper and easy to obtain. The main issue is whether the *halal* product has been combined or mixed with other similar materials such as pork. However, the safety of food for Muslim consumption remains in doubt. Besides that, *halal* issues that arisen are including improper hygienic practice at processing premises can give impact on food safety (Mohd Aliff & *et all*, 2015). Food safety issue is a famous issue in Malaysia. The issues that always arise are about the unsafe food handling and spreading of infectious foodborne illness, ensure food preparation, food poisoning occurs at education institutions, has been discussed by the public more often. The researcher conducted several interviews with students who are the customers at the cafeteria. From the interviews, the customers sometimes found "strange objects" such as flies, ants, maggots, hair, and the rubber band inside the foods. Besides that, they also complained about the freshness of foods that cafeteria serve to the customers. The cafeteria workers sometimes just reheat yesterday's foods, so that they can sell it again on tomorrow.

However, the limited knowledge of food producer in *halal* food and fail to understand than the *halal* food is prepared in unsafe and unhygienic condition, the food is not *halal* to eat (Mohd Aliff & *et all*, 2015). Lastly, personal and societal behaviour also becomes a factor that influences the *halal* food standard practices in UUM cafeteria. The researcher also conducted an interviews with some of the workers by asking them

why they do not cover their head during preparing the food. Some of their workers' states that head is not important to cover. Due to lack of knowledge and not enough information about benefits of the *halal* process, they are not practicing it in their daily lives. The religion belief, attitude and also behaviour of the food provider can make sure that the food is *halal* and safe to eat. UUM's cafeteria do not have any certificates in Quality Management System (QMS).

### 1.3 Research Objectives

The objective of this study is to identify whether there have the relationships between the dependent variable and independent variable. The objectives of the study are as follow:



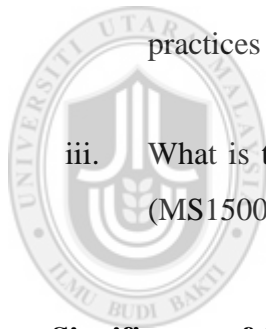
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- i. To explore the determinant factors that influences *halal* food standard practices (MS1500:2009).
- ii. To investigate the relationship between factors and *halal* food standard practices (MS1500:2009).
- iii. To identify the most influenced factors of *halal* food standard practices (MS1500:2009) in cafeteria operator at UUM.

## 1.4 Research Questions

The researcher has created three research questions that can be used as a parameter in directing this study. The purpose of the research question is to investigate the relationship between dependent variable to independent variables whether there are "significant relationships" between the dependent variable and independent variable or not. This study attempt to answer the following question:

- i. What are determinant factors that influences *halal* food standard practices (MS1500:2009)?
- ii. Is there any relationship between factors and *halal* food standard practices MS1500:2009?
- iii. What is the most influenced factors of *halal* food standard practices (MS1500:2009) in cafeteria operator at UUM?



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## 1.5 Significance of the Study

Research is a very important for the organization, researcher and also for the customers. A good research can be a general guide to the organization, customers and future researcher.

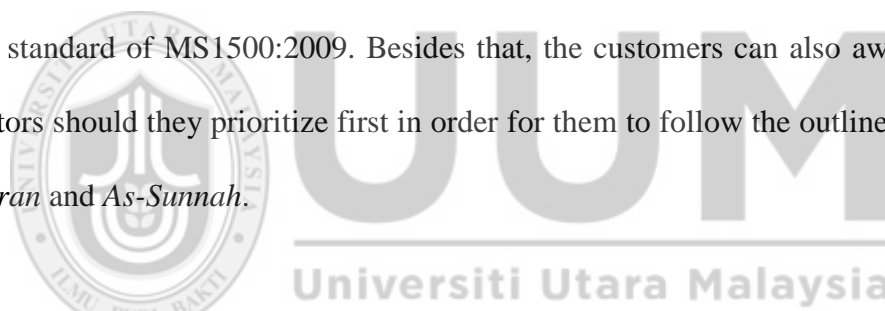
### 1.5.1 To the Cafeteria's Operators

This study is important in order for the cafeteria's operators to know which factors of MS1500:2009 is the most significant and must be focused on to provide the MS1500:2009 at their cafeteria. Cafeteria's operators should recognize the level of

trustworthiness in order to make sure the *halal* status. Besides that, the food safety is also an important factor that may have an effect on MS1500:2009 because most of the students are eating at the cafeteria inside the UUM. Moreover, profitability also the important factor for cafeteria's operators should give full concentration towards MS1500:2009 because it will help cafeteria's operators to improve the services provided and automatically can increase the profit.

### **1.5.2 To the Customers**

This study can benefit to the customers as guidance for them to choose the cafeteria that provides the MS1500:2009. The cafeteria can take suitable actions for achieving the standard of MS1500:2009. Besides that, the customers can also aware to which factors should they prioritize first in order for them to follow the outline as in the *Al-Quran* and *As-Sunnah*.



### **1.5.3 To the Future Researchers**

This research is very helpful for the next researcher. The future researcher can use this research as a parameter in command to classify which factor that influence *halal* food standard. They can use any other factor that influences *halal* food standard practices at other places and also refer this research as additional information

## **1.6 Scope of the Study**

The study focuses on determine the factors that influences the halal food standard practices at cafeteria's operators inside Universiti Utara Malaysia (UUM) Sintok,

Kedah. The population for this research are 140 including owners of cafeteria and also their workers. This study is correlational study using survey method and individual as unit analysis. The workers from cafeteria inside UUM are considered as the element of unit analysis.

This research can give benefits to all cafeteria's operators, customers and also to the individual because halal food is important to all Muslim. Food is important to all human for developing a healthy lifestyle and also a healthy mind. Most of the customers are student so that they need a healthy, hygienic and also halal to eat.

## **1.7 Definition of Key Term**

### **1.7.1 Halal Food Standard Practices (MS1500:2009)**

"As a practical guidance for the food industry on the preparation and handling of *halal* food (including nutrient supplements) and to serve as a basic requirement for *halal* food product and food trade or business in Malaysia".

(Jabatan Standard Malaysia, 2009)

### **1.7.2 Halal**

"Is the lawful, permitted, pure, wholesomeness and recommended by the Islamic law".

(Shafie & Othaman, 2006)

### **1.7.3 Food Safety**

"Food safety is a scientific discipline describing handling, preparation, and storage of food in ways that prevent foodborne illness. This includes a number



of routines that should be followed to avoid potentially severe health hazards."

(Wikipedia, 2015)

#### **1.7.4 Personal and Societal Behaviour**

"Social perception and behaviour is a term in social psychology that defines an individual's ability to create an impression or judgment of other individuals or social groups."

(Wisegeek, 2015)

### **1.8 Organization of the Thesis**

This research consists of the five chapters of the full research paper. The chapters are the introduction, literature review, research methodology, result and finding and lastly, discussion, recommendation and conclusion.

Chapter one, the introduction is the first chapter of writing this paper. It highlights the overview of the research titles and elaborates the title in more details. Meanwhile, the literature review is the second chapter of this paper. Studies of previous researchers, which are related to the present studies are gathered and explained the possibility and appropriateness to carry this research. This secondary source also builds the foundation for the future present studies.

The next chapter is the research methodology for this study. Research framework, research design, sampling design, instruments design and data analysis are presented in this chapter. It is the heart of the research where all procedures getting the research

correctly are highlighted and explained based on valid citations in order to obtain true and reliable findings.

The next chapter is chapter 4 will highlight the discussion of the result. This chapter will analyse the result of the study. Lastly, chapter 5 is about conclusion and recommendation. The purpose of this research to wrap up the all about this study and recommendation will give the suggestion for improving the study and for the future researcher.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

A literature review can be referring to records of the relevant previous studies quoting the author's name and the year of the study (Sekaran, 2009).

#### 2.2 Background of the university

Universiti Utara Malaysia (UUM) is established on 16th February 1984. This campus was built on an area of 1061 hectares at Sintok, located about 48 km from Alor Setar and 10 km from Changlun. UUM provide for their student's sufficient accommodation. Currently, UUM has fifteen Student Residential Halls (SRH), which are all together can provide accommodations for 21000 students. The name of SRHs after Malaysian companies such as Tradewinds SME Bank, Proton, Bank Rakyat, EON, Bank Muamalat, MISC, Maybank, BSN, Sime Darby, MAS, TNB, Petronas, TM and Yayasan Al-bukhary. Every Student Residential Halls (SRH) has its own cafeteria excluding the Maybank SRH. Meanwhile, the Tradewinds and BSN SRH has its own cafeteria but it is not operated.

Each of the residential halls has equipped facilities such as the rooms, cafeteria, shops, sports facilities and a recreation centre. It is also prepared for postgraduate students that have family members to rent houses near to UUM. They guaranteed for the

undergraduate student a place in the residential halls. Though the lodging for postgraduate students will be provided by "first come, first, serve" basis.

### 2.3 Islamic Food Practices

Food is one of a basic need to a mankind. *Halal* food is an Islamic dietary code that should be followed by all Muslims. Therefore, it creates a high demand for *halal* foods and products. This is because all Muslims over the world have increasing awareness to eating food that follows the Islamic requirements. For a non-Muslim consumer, Islamic dietary requirement will represent the symbol of safety, quality and hygiene product (Ahmad Rafiki, 2014).

Besides that, different religions and racial have different ways of eating. Apart from these beliefs, the custom and tradition which they inherited from their ancestors, environment and also states may influence their way of living especially perception, eating habits and attitudes towards food.

Muslims must follow what is outlined in the *Al-Quran* from Allah to Muhammad (SAW) in order to be a good follower. Inside *Al-Quran*, our Prophet Muhammad (SAW) said:

*“What Allah made permissible in His Book is lawful (halal) and what He has forbidden (haram), and what He deliberately did not mention is forgiven. You should accept this privilege which Allah bestowed on you for He is never forgetful. The Prophet (pbuh) then recited, And your Lord is never forgetful.”*

*(Maryam, 19:64)*

Besides that, *Al-Hadith* also highlights the importance to follow the guidelines states in *Syariah* (Islamic law). *Hadith* narrated by Al-Miqdam our Prophet Muhammad (SAW) said:

*“Nobody has ever eaten a better meal than which one has earned by working with one’s own hands. The Prophet of Allah, Daud, used to eat from the earnings of his manual labour.”*

(Stork, 2004)

Based from Riaz and Chaudry (2004), Muslim rotates about the theory of *halal* and *haram*. Islam permits food that is ‘wholesome’ in the states that:

*“O mankind! Eat of what is permissible and good on earth and do not follow the footsteps of Satan, truly he is an open adversary to you.”*

(Al-Baqarah, 2:168)



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In addition, the Islamic law is important in the slaughtering, processing and serving of any food and drink to make sure that follow the *Syariah*. For Muslims, the animals to be slaughtered must from *halal* species (Mohamed Nasir and Pereira, 2008).

### **2.3.1 The *Halal* Slaughter**

The slaughter of animal need to be done with *niyyah* (intention) and the purposes of slaughtering is only for Allah. Furthermore, the animals that will be slaughtered must be in *halal* categories and be alive at the time of the slaughter. In addition, the animals

also must be healthy and accepted by the capable authority (Department of Standards Malaysia, 2009).

Before start the slaughtering process, the phrase "Bismillahir Rahmanir Rahim (In the name of Allah, Most Gracious, Most Merciful)" has to be appealed directly. Besides that, the slaughtering tools, lines, and utensils must be suitable the *halal* standard. The slaughter process should be performing by using the sharp device but it cannot be used teeth, nail or bone. The slaughtering process should be performing once and in the "sawing action". During the slaughtering process, it is allowable for the slaughtering knife or blade not raised off from the animal (Department of Standards Malaysia, 2009).

If the correct measures are undertaken, the Islamic method of slaughter is the least painful. A well-trained Muslim supervisor who is in authority to guarantee that the animals are appropriately slaughtered permitting to *Syariah* to make sure that meat becomes *halal* (Department of Standards Malaysia, 2009).

### **2.3.2 Storage, Display and Preparation**

According to Mohd (2004), all stages in the processes food, the materials, tools, equipment, and ingredients used must be free from *najs*, has been in contact with *najs* materials or mixed with any *najs* material. There are three types of *najs* such as "*najs al-mughallazah*" (severe), "*najs al-mutawassitah*" (medium) and "*najs mukhaffah*" (light). "*Najs al-mughallazah*" can only be washed and purity through "*dibagh*". According to *Syariah* law, *dibagh* is the washing method that required seven times

including water mixed with soil. The soil must be free from *najs*, contaminations and not "*musta'mal*" soil and the water used must be natural (*mutlaq*) (Jabatan Standards Malaysia, 2009).

According to Mohd Yusoff (2004) during preparing the *halal* food, all the products, and ingredients used should be safe and will not dangerous to the health. This is because *halal* guidelines cover all together parts such as distribution, packaging, processing, and preparation. Therefore, according to the *Syariah* requirements, if any tools found to be polluted with non- *halal* materials must be washed.

Food handling, storage, and preparation can be referring as zones of "critical concern" for cooking premises. This is because it will influence the food safety (Manning, 2007). Al- Harran & Low (2008) states that, the theory of *halal* covers everything materials to finish the food.

Based on the research made by Mohamed Nasir and Pereira (2008), food pollution is an important and subtle issue for Muslim. This is because Muslim prefer to visit the *halal* restaurant to protect them from unlawful food. *Halal* food should not interact or be closeness to the non- *halal* products during preparation, processing and storage.

### **2.3.3 Hygiene and Sanitation**

The places for preparing and selling finish product should be hygienic and free of animals likes rats, lizards, cockroaches, infestation or flies and small insects. The workers have to be healthy, wearing suitable cloth and also cover the heads to evade the pollution. The tools, utensils and also washroom facilities should be washed frequently to make sure it's clean. During manufacturing and processing of food, the

proper cleaning must be done to avoid potential sources of pollution. The food producer can prevent the potential sources of impurity by doing cleaning and sanitizing the cooking areas and also the utensils. (Riaz & Chaudry, 2004).

To have resulted in wholesome food, clean, healthful and nice working condition, the food producer should have proper food hygiene's practices (Amjadi and Hussain, 2005). Their workers who involve in cooking the food should apply cleaning and healthy practices. Amjadi and Hussain introduced four issues in an effective hygienic system which are food, facilities, people and also vermin. This system can be monitored through regulations and standard in *halal* food practices.

## **2.4 Halal Food Standard Practices (MS1500:2009)**

### **2.4.1 Quality in Islam**

Malaysian Standard is a part of quality management system. Different people and organizations defined quality in different ways. Quality management is normally related to meeting the customer's expectations at a reasonable time. Most of the organization will spend much money to make sure their organization achieves excellent quality results.

In Islam, quality has been emphasized a long time ago by *Al-Quran* and *Hadith*.

*“He sends down from the sky, rain, and valleys flow according to their capacity, and the torrent carries rising foam. And from that [ore] which they heat in the fire, desiring adornments and utensils, is foam like it. Thus Allah*



*presents [the example of] truth and falsehood. As for the foam, it vanishes, [being] cast off; but as for that which benefits the people, it remains on the earth. Thus does Allah present examples.”*

*(Al-Ra'd, 13:17)*

*“You, O community of Muhammad (s), are the best community brought forth, manifested, to men, according to God’s knowledge, enjoining decency, and forbidding indecency, and believing in God. Had the People of the Scripture believed, it, their belief, would have been better for them; some of them are believers, may God be pleased with him and his companions; but most of them, the disbelievers, are wicked.”*

*(ali-Imran, 3:110)*

*“Truly those who believe and perform righteous deeds — indeed We do not leave the reward of those of good deeds to go to waste (this [last] sentence is the predicate of the [previous] inna’lladhina, ‘truly those who’, and in it an overt identification [of the recipients of the reward] has replaced the [would-be] pronominalisation, in other words, it is ‘their reward’ [which shall not be left to go to waste], and We will reward them with what it [the reward of good-doers] comprises).”*

*(al-Kahfi, 18:30)*

A hadith by Rasulullah S.A.W narrated by Imam al-Bayhaqi:

*“Verily, Allah loves those who, when doing something, he does it with the best. He loves the act and also loves a person who does it.”*

The above *verses* and *hadith* have clearly shown that Allah emphasized the importance of giving the best quality in any matter. Moreover, Allah has created men as the best creature to obey Him.

#### **2.4.2 MS1500:2009**

MS 1500:2009 (Malaysian Standard for *Halal* Food-Production, Preparation, and Storage) was established in August 2004 and is well established as a mark of a quality system worldwide. According to Prime Minister Dato Seri Najib, Malaysia has in place *halal* standards of international recognition which food producers must use to create advantages and to position themselves in the globalize world of *halal* (Bernama, 2006).

MS 1500:2009 obviously describing the clear guidelines and government's commitment to *halal* food. The standard was established in the agreement between ISO policies and being accepted by globally *halal* certification in another country. At Muslim nation, MS1500:2009 is the first *halal* standard to be established (Mukhtar, S., 2009).

All the process of preparing and handling of *halal* food has been introducing in Malaysia Standard (MS1500:2009) starting from the choosing the raw materials until the distribution and marketing activities (Samori, Ishak & Kassan, 2014). In brief, the meaning of *halal* and its dimension covered by MS1500:2009 can be tabulated as in Figure 2.1 (Mohd Rizuan,2015).

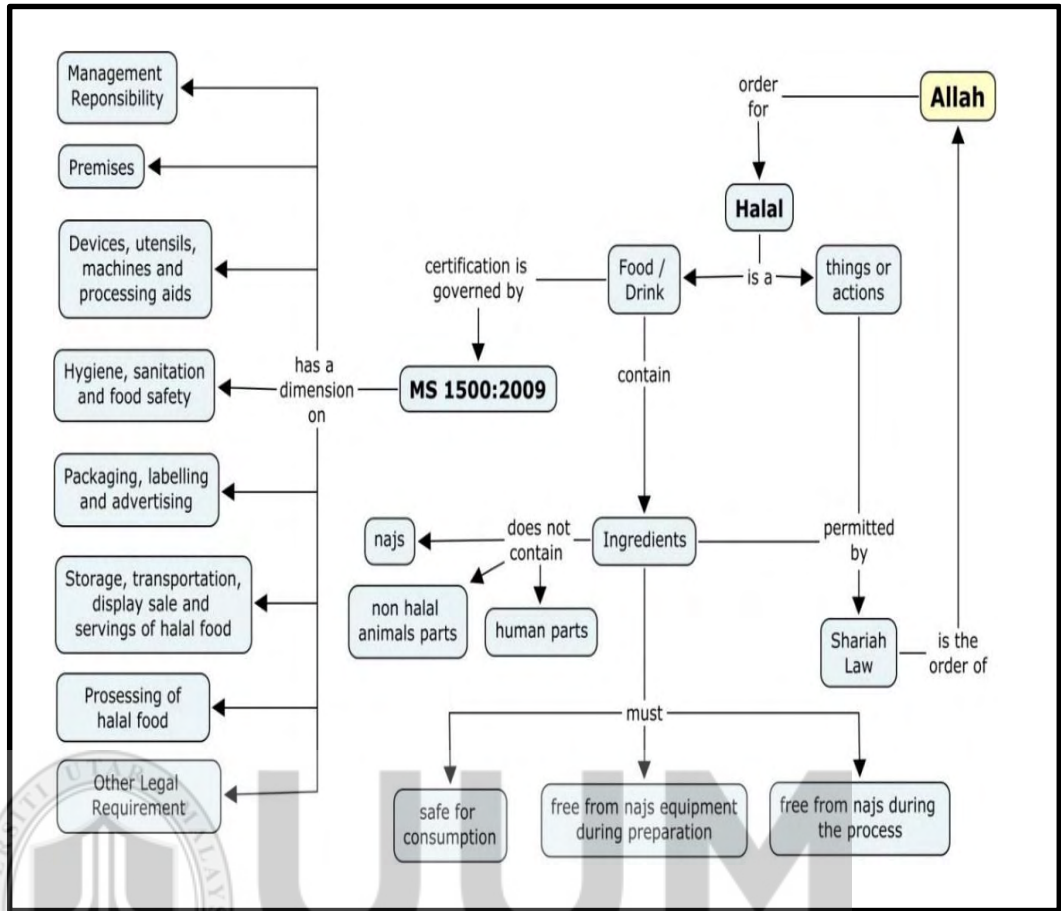


Figure 2.1:  
***The Meaning of Halal and Dimension Covered by MS1500:2009.***  
 Sources: Mohd Rizuan (2015)

The Malaysian Standard MS 1500:2009 is the "wholesomeness" theory of *halal* food that are protecting in the *Syariah* law. Good food needs to fulfil the requirement for such as safety, hygiene, and sanitation. *Halal* products are getting universal gratitude to become the standard for safety and quality assurances. All Muslim consumer and consumer from another religion willing to accept the goods that are produces with the *halal* certification (Zurina Bistari, 2004).

Table 2.1 below shows the scope and *halal* processing of MS1500:2009 (Mohd Rizuan, 2015).

Table 2.1:

***The Scope and Halal Processing MS1500:2009.***

<b>Dimension</b>	<b>Scope</b>	<b>Requirement on the use of resources effectively and avoid wastage</b>
Management responsibility	<i>Halal</i> Muslim officers	To ensure that have sufficient resources (facility, financial, infrastructure and manpower) for implement the <i>halal</i> practices system.
Premises	Building layout	Have suitable process flow, effective hygiene and safety practices and good employee flow.
Equipment	Cleanliness	Devices, machines, utensils and process flow chart must be built to help in the cleaning.
Food safety, Hygiene and sanitation	Hygiene and sanitation during food processing	Requirement in the preparation of <i>halal</i> food are hygiene, sanitation and food safety.
Processing of <i>halal</i> food	Processing <i>halal</i> animal and plant	The ingredients of <i>halal</i> food must be safe, non-poisonous, non-intoxicating or non-hazardous to health.
Storage and transportation,	Storage and transportation of the <i>halal</i> product	All <i>halal</i> food must be separated at every stage to prevent them from being mixed or contaminated with things that are non- <i>halal</i> .
Packaging and labelling	Packaging and labelling	Packaging process should be clean and safe. Labelling material used in the product must be <i>halal</i> .
Other requirements	Hygiene and safety	The product must obey with legislation currently in enforce in Malaysia.

*Al-Quran* and the *hadith* laid down the requirement sources of *halal* food, guaranteeing the food is not toxic and safe and give benefit to health (Janis, Z. M., 2004). A competent *halal* certifying body ensures that *halal* certification awarded accurately reflects the *halal* practices implemented by the food producers.

### **2.4.3 Relationship between Halal, Hygienic and Safety Food**

The use of halal ordained from Allah (SWT) must be observed from the wider scope and in many perspectives. The concept of *halal* completely encompasses all aspects of human life as it provides us a better and insightful meaning when it is observed from the quality perspective and the goodness of what we should eat, drinks and use daily. Hence, as a Muslim, food must not be alone in good quality, safety and hygienic but also should be *halal*.

It shows that all food is halal except those that are precisely mentioned in the Al-Quran as Haram. Islam only allowed its follower the lawful (*halal*), hygiene, safe and good foods, drinks and products as stated in the Al-Quran and *Syariah*. Hereafter, the ingesting of halal is not only an obligatory in serving Allah but compliant to halal shows that ingredient and material are not risky to health since Allah permitted only what is good for human existence.

Hygienic, safety and cleanliness are strongly highlighted in Islam via *halal*. It will include every aspect of personal hygiene, clothing, equipment and premise where food is prepared or processes. According to Hayati (2008), the root of *halal* itself is hygienic and health. The main purpose is to make sure that product, foods and drinks people use or take are totally clean and not risky to human health. Therefore, it notes that in

Islam the consumption of halal and using of halal products are compulsory in serving Allah (SWT).

## **2.5 Trustworthiness (Halal Status)**

### **2.5.1 The Concept of Halal**

The term " *halal* " can be defined as the permissible or lawful by Islamic laws. It can be referring to a product or foods consumed by Muslim. Usually, *halal* is the acceptability to do something based on Islamic law and principles such as eat and drink. *halal* is the worldwide term that spread over to all aspects of life (Abdul & Ahmad, 2014).

Moreover, for Muslim to eat an animal, it would indicate that it must be slaughtered in accordance with *Hukum Syariah*. For food stuff, all the stages in preparing, processing or manufacturing by using instruments or ingredients must free from anything contaminated according to *Hukum Syariah* (Wahab, 2004).

In Islam, all foods are well thought-out as *halal* except which are *Haram* such as alcohol, the product contains swine or pork, animals killed without *Bismillah* and animals improperly butcher or dead before butchering. *Haram* also covered blood product, land animals without external ears, carnivorous animals and foods contaminated with intoxicants materials (Riaz & Chaundry, 2004).

Besides *haram*, between *halal* and *haram* are *syubhah*. Eating something which is *syubhah* often can causes no peaceful to our mind and soul and also differing to the

human nature or *fitrah* (L. A. Rahman, 2009). *Syubhah* can be referring to doubt which Muslims are advised to avoid.

### 2.5.2 Concept of Halal in the Quran and Sunnah

In Surah *Al-Baqarah* verses 29 says that Allah (S.W.T) has created all over the world for human survival and provisions in life.

*“It is He who have created all that is in the earth for you”*

*(Al-Baqarah, 2:29)*

*Al-Quran* states that to make something *Halal* or *Haram* is the right of Allah alone. Slightly, as a Muslim should thankfulness to Him (SWT) as indicated in the following verse of the *Al-Quran*:

*“O ye who believe! Eat of the good things wherewith We have provided you, and render thanks to Allah if it is (indeed) He whom ye worship”*

*(Al-Baqarah 2:172)*

Allah has forbidden something because of those things for our own sake as a human being. Therefore, all Muslim must follow Allah’s order on forbidden and non-forbidden things. Islamic laws are universal and generally valid to all peoples, and faiths. Allah directed to the Messengers ordered us to do where He says:

*“O ye Messengers! Eat of the good things, and do right. Lo! I am aware of what ye do”*

*(Al-Mu’minum 23:51)*

The cleanliness is the part of Islam and Allah only permit us to eat *halal* food that covers hygiene and cleanliness in food preparation. This is obviously emphasized in the *verses* of the *Al-Quran* where He says:

*“He hath forbidden you only carrion, and blood, and swine flesh, and that which hath been immolated to (the name of) any other than Allah. But he who is driven by necessity, neither craving nor transgressing, it is no sin for him. Lo! Allah is Forgiving, Merciful”*

*(Al-Baqarah 2:173)*

The above *verses* of the *Al-Quran*, we have been informed what kind of food that Muslims should consume and not to consume. For instance, the reasons for prohibition to eating dead animals and guts are because their rotting process leads to the formation of chemicals which are harmful and dangerous to humans. Products that contain blood also contains dangerous bacteria and toxins that can harmful to human body development and metabolism. There are reliable reasons even emphasized in the *Al-Quran* where Allah (SWT) says:

*“And verily in cattle (too) will ye find an instructive Sign. From what is within their bodies between excretions and blood. We produce, for your drink, milk, pure and agreeable to those who drink it.”*

*(An-Nahl 16:66)*

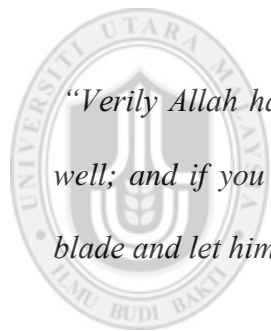
From the above *verses*, Islam only permits a good and healthy food for Muslims to be consumed such as milk are good sources that contain a lot of vitamins and minerals. This provisional is only potential to be derived from *halal* animals when they are alive



such as cows and goats. When cows and goats die, it becomes *Haram* because of the dead animals have many bacteria.

### 2.5.3 Halal Foods or Products in Hadith

The *Hadith* of our Prophet Muhammad (SAW) has addressed the theory of *halal* related all forms of products, foods, and drinks for human consumptions irrespective of nationality, race and skin colour. Our Prophet Muhammad (SAW) teaches human beings the perfect method or technique of slaughtering the animals to become lawful or *halal* for eating. The *Hadith* related to this context was narrated by Abu Ya'la Shahddad ibn Aus, saying:



*“Verily Allah has prescribed proficiency in all things. Thus, if you kill, kill well; and if you slaughter, slaughter well. Let each one of you sharpen his blade and let him spare suffering to the animal he slaughters”*

*(Hadith of Imam Nawawi by Sahih Muslim)*

It cannot be denied that, in Islam provides clear procedures on the process of *halal* food. We as a Muslim must follow all the rules and guidelines especially in terms of slaughtering. Besides that, our Prophet Muhammad (SAW) told us who want to butcher some animals using bamboo. It was narrated by Rafi' bin Khadij said:

*“Use whatever causes blood to flow, and eat the animals if the Name of Allah has been mentioned on slaughtering them...”*

*(see:Sahih Bukhari, Vol.3, Book 44, No. 668).*

The *Hadith* above clearly shows that; Islam concern in *halal* requirements for food processing. The narrated *hadith* mentioned above have obviously explained the guidelines and processes in slaughtering the animals to be lawful for eating by Muslims.

Some of the *hadith* of our Prophet Muhammad (SAW) also addressed those non- *halal* or unlawful foods or products for human consumptions. It has been narrated by Az-Zuri that:

*“Allah’s Messenger forbade the eating of the meat of beasts having fangs”*

*(see: Sahih Bukhari, Vol. 7, Book 7, No 4350).*

According to this *Hadith*, we may have noted that as there are lots of products, foods and drinks which are allowable to eat, drinks and use. Besides that, there are also have foods and drinks that are not allowable for a human to eat like alcohol and pork. We are sometimes get confused on whether certain foods or drinks or products are *halal* or *Haram*. In this situation, the *Hadith* of the Holy Prophet sheds light on this where he said:

*“Halal (lawful) is clear and Haram is clear; in between these two are certain things that are suspected (Shubha). Many people may not know whether those items are Halal or Haram. Whosoever leaves them, he is innocent towards his religion and his conscience. He is, therefore, safe. Anyone who gets involved in any of these suspected items, he may fall into the unlawful and the prohibition. This case is similar to the one who wishes to raise his animals next*

*to a restricted area, he may step into it. Indeed, for every landlord there is a restricted area. Indeed, the restrictions of Allah are the unlawful (Haram)''*

*(see: Sahih Muslim, No: 2996).*

*Halal* foods and drinks as the sources of energy for human beings because it supplies nutrients for the body growth, for movements, work, exercise, replace dead cells and for thinking. Therefore, they are permitted by *Quran* and *Sunnah* for the benefits we can obtain from them, otherwise, they are prohibited if they are not prepared in the right manner, condition and method for consumptions simply because of the harmful effects we may come from using them, eating and drinking the *haram* food (Abdul & Ahmad, 2014).

#### **2.5.4 Halal Certification**

The *Halal* food certification can be referring to the "inspection of food processes in its management practices, preparation, cleaning processing, slaughtering, disinfecting, handling, storing and transportation". The application for *halal* certification must spread over to all phases of processing "from farm to table". The *halal* concept is applied through certification for food products in Malaysia. In Malaysia, Islamic organization issues the document of the *Halal* certificate, which is Malaysia's Department Islamic Development (JAKIM). According to Arif and Ahmad (2011), it is an acute factor in Muslim's consumption decision of whether a product is *Halal*. Nasaruddin, Fuad and Jaswir (2012) stated that only in Malaysia, *Halal* certificate issued by government contrasting with other countries because their certifications are permitted by respective Islamic associations. They further added that in 2004, the introduction of the Malaysian *Halal* Standard MS1500:2004 had fostered the

commitment of Malaysia's government to the foundation of definite and concrete procedures for *halal* compliance. Hopefully, this new *halal* standard will make stronger Malaysian *halal* certification (Muhammad, Isa and Kifli, 2009).

According to Zurina Bistari (2004) *Halal* certification provides several benefits to the consumers. There is consumer self-confidence that lets the consumers have the opportunity to purchase. In the business, help the manufacturers use it as a marketing strategy to secure in the larger market share because the *halal* food is appropriate for both Muslims and non-Muslims. Strict hygiene practices are one of the quality practices for *halal* food. Lastly, for the authority that provides a device to monitor and audit the *halal* food.

By having *Halal* certification, it forces a quality control process to supervise the actual implementation of required production circumstances and guarantees quality standards. The certification of *halal* is very predominant in the hospitality industry because encourages the cafeteria's operators by having information of Muslims' food boundaries, understanding and spiritual practices (Marzuki *et al.*, 2012). There is a demand for *Halal* certification of food products by the Muslim consumers, irrespective of their country of origin. This indicates the necessity of *Halal* -certified food products, as it seems to be a significant factor in the purchase decision of those products.

### **2.5.5 Halal Logo**

The logo determines that the products are *halal* to be used and the logo will display on their product's packaging or display at their places. Salam and Othman (2014) states

that internationally, JAKIM's *halal* logo is the recognized symbols in *halal* society.

The JAKIM provided *halal* logo that can be used to all product are as below:



Figure 2.2:  
***Halal Logo***  
(Source: JAKIM)

The round shape logo contains the word in Arabic “*مليزيا*” and "Malaysia" in Malay. The small five stars to be found in between the Malay and Arabic word. A word *Halal* in Arabic –“*حلال*” is put in the middle of the star and followed a “HALAL” word in Malay. Lastly, the *Halal* Logo consists eight star is to be found in the middle of the round shape.

Rahman *et al.*, (2014) state that the Malaysian's *halal* certification is the only logo in the world that is supported by the government and the logo can be used for all the Muslim in the countries. According to Zakaria, (2008), manufacturers must take the advantage by having *halal* certification and logo, because Malaysian *halal* standards have been acknowledged by worldwide gratitude. Yet, the products that have *halal* logo have more meaningful than those carrying other similar certifications for Muslim customers (Shafie and Othman, 2006).

Consequently, it suggests that *halal* logo is important for Muslims for buying the *halal* products in the market. The *halal* logo and certification of products to make sure that the producers follow the *halal* standards and also give the guarantee to the Muslims that he or she follow the Islamic law.

## 2.6 Food Safety

The concept of *halal* not only covers the *Syariah* requirement but also the covers the concept of safety aspect, hygiene, and sanitation. Because of that, the producer must make sure that the *Halal* food willingly acceptable by consumers who are concerned about food safety, hygiene and healthy life style.

According to University of Maryland Medical Centre defined the food safety as the practices and conditions that reserve the quality of food to avoid infection and contamination. This is because food can be easily impure in many ways. Sometimes, food may be already containing the parasites or bacteria. These microorganisms can easily feast if the food products are not handled properly during the packaging process. Food can be easily contamination if improperly cooking or storing the materials.

Properly storing, handling, and preparing food can reduce the risk of getting foodborne illnesses. Foodborne illness can be easily happening when the food handler has poor food safety practices. The signs of foodborne illnesses are different, but commonly have stomach problems. Foodborne illnesses easily attack young children, pregnant women, older and adults who have weakened the immune system (Dimitrios & Katerina, 2014).

### **2.6.1 Food safety' Knowledge**

Food safety' knowledge among the food handler is important. This is because knowledge is related to up-to-date practices that have the willingness to change present practices if he or she knows that that current practices are hazardous (McIntosh, Christensen, & Acuff, 1994).

According to Zain and Naing (2002) showed that many food handlers having poor safety knowledge. This is because food handlers were had the low level of education, not registered with the local government and also not well trained (Zain & Naing, 2002). Many people do not know the basic rules and guidelines of food hygiene (Sockett, 1995).

As Chatterjee (2005) states that the food manufacturer has the unsafe and inefficient practices because lack in unhygienic practices and lack of knowledge in personnel hygiene. Howes, McEwan, Griffiths, & Harris (1996) conduct a research in the US has recommended that improper food producer practices contributed to almost 97% of foodborne illness in food service sector and homes. The key components in the process of guaranteeing that food handlers are proficient and understand well about the food safety are training, education and safety knowledge (Jacob, 1989).

According to Puziah Hashim (2009), the food handler should have enough knowledge about food hygiene practices because they are able to identify the potential risks, take suitable preventive and corrective actions and guarantee the effective monitoring. Essentially, recall procedures should be established and the appropriate records also must be well maintained.

## 2.6.2 Personal Hygiene

90% of food safety problems can occur if the food handler has poor personal hygiene. Weinstein (1991) showed the statistics that improper hand washing can cause 25% of all foodborne illnesses. According to Puziah Hashim (2009), the food handler must make sure the personal hygiene is carried out. All food handler must provide the medical report. If the food handler is injured she or he are not allowed to enter the food handling area.

Besides that, food handlers must be wearing protective clothing, head covers, and appropriate footwear when to enter the food handling area. Food producer also must avoid smoking, munching, sneezing or coughing and spitting over unprotected food to avoid pollution by bacteria.

Hand washing should always be performing to avoid food contamination after using the restroom, sneezing, coughing, smoking, eating, handling with chemicals substances, and taking out or handling trash (NRAEF, 2004).

Manning & Snider (1993) found that knowledge and attitudes about hygiene and cross contamination support some personal hygiene and handling practices of workers. Besides that, the workers point to frequent and thorough hand washing to be important because it helps to avoid the food contamination.



### 2.6.3 Food Hygiene and safety

Food does not harm to their consumer when it is prepared or eaten is the safe food. In order to guarantee the food is safe to be eaten, the food producers should take basic steps to comply with Good Hygiene Practice (GHP) and Good Manufacturing Practice (GMP) (Puziah Hashim, 2009).

According to Puziah Hashim (2009), food hygiene is vital to be useful by food handler or food producers in order to provide foods that are safe and suitable for consumption. They also need to make sure that consumers are providing with clear and easily understood information about handling and preparation of the food and also labeling or other appropriate means of storage. This will avoid food from impurity from foodborne pathogens.

Food hygiene practices must be applying through the food supply chain from the main production through to final stage for consumption, setting out the important hygienic controls and conditions at each stage of manufacturing. Besides that, consumers should play their role by following applicable instructions and applying suitable food hygiene measures.

There are some main philosophies that are critical to making sure the food hygiene. Firstly, the food producer or food handler should emphasis the process that should be consists of potentially harmful substances does not pollute the food. Secondly, the hygienic practice should decrease the hazards which may adversely affect the safety of foods. Lastly, the food producer ensures suitable and appropriate pest control

system, maintenance and cleaning program, wastes removal and storage and also sanitation systems (Zemichael *et al.*, 2014).

#### **2.6.4 Environmental Sanitation**

Besides that, the food producer must measure that during transportation to avoid contamination from smokes, dust or fluctuation of temperature and humidity. Product or material should be labelled with the identification and product information.

Secondly, the cooking areas must free from potentials sources of food contamination such as areas that are disposed to the pollution. The facilities and equipment should be well designed to make sure the minimum infection, easy to clean and doing maintenance services to avoid the pest infection. The premises would be able to promote hygienic practices and help to reduce infection during the food processing. The facilities for personal hygiene such as wash hand sinks and toilets should be well prepared.

All the workers should be trained and attend the food safety training. This is because the workers know about food hygiene suitable with the operations they are performing. Food hygiene is the core requirement in preparation and production of safe food. Foodborne illnesses and food poisoning can give impact on individual health when eating the unsafe food.

### **2.6.5 Food storage and Temperature**

Other food safety requirements are controlled by length and temperature of processing and storage, cooking, and cooling. This will avoid food from damage and impurity by microbiological, physical, air, steam and water supply.

Mc Swane *et al.* (2004) stated that, to control the food temperature of food cook is important for guaranteeing that food fulfills with food safety regulations. Temperature abuse can cause foodborne illness during food preparing. NRAEF (1999) states that, bacteria can easily growth at the favorable temperature. So that, if the food can be easily contaminated if the temperature is not suitable for the food. McSwane *et al.* (2004) state that, enough time of cooking or reheating time and desired temperatures that help in eliminating the existence of harmful microorganism.

There are several previous studies states that the main factor contributing to the foodborne illness are poor holding in cooking temperature control (Todd, 1997). The growth of certain bacteria cannot be destroying with the heating process when improper holding temperature because some microorganisms cannot be destroyed by heating processes (McSwane *et al.*, 2004). Therefore, the food producer must be responsible for guaranteeing that all food prepared are well prepared.

### **2.7 Personal and Societal behaviour**

Personal and societal behaviour will focus more on the food producer religion and religiosity, attitude and behaviour. Personal and societal perceptions are also important to determine the MS1500:2009 in food industry. Many previous kinds of research have

been conducted about the food producers' attitudes. Most of the researchers show that personal and societal perception are important factors and give impact to *halal* quality practice.

### **2.7.1 Religion and religiosity**

Religion refer to a "system of practices and beliefs by which a group of people understands and replies to what they feel is sacred and supernatural" (Johnstone, 1975). All the religions in the world prohibit and propose good behaviour to follow. Therefore, Islam clearly stated that *halal* product is allowable but for non-*halal* is prohibited for human to eat. Members in the different group of religious, have different purchasing decisions normally the purchase decision will influence by their orientation, knowledge, belief and also religious identity. Consequently, it shows that religion and belief become sources of awareness towards consumption behaviour (Schiffman & Kanuk 1997).

Religious belief or knowledge is the main factor of food avoidance, prohibitions and special rules and regulation with respect to meet what the religion said (Simons, 1994). Religious belief or knowledge is the best criteria to determine the food ingredient because some religions have different some food restrictions, for example, pork is forbidden for Islam, beef and pork are prohibited in Hinduism and Buddhism, only Christianity has no food prohibitions. The amount of people following their certain religions usually pretty substantial even though the dietary laws forced by some religions are strict.

To substantiate this understanding, one would see the theory of human responsiveness has been stressed in the *Al-Quran* and *Sunnah*. *Al-Quran* and *Sunnah* to guide all Muslims to lawful things in life. All Muslim must accept and believe what is *halal* and *haram* is declared through *Al-Quran* orders (Hussaini, 1993). *Hadith* says, in Islam awareness has been given proper and clear thoughtfulness with respect to lawful and the unlawful things as:

*“The Halal is that which Allah has made lawful in His book and the Haram is that which He has forbidden, and that concerning which He is silent, He has permitted as a favour to you”*,

*(See: Ibn Majah, No 3367)*

From this *Hadith*, it can be concluded that human can be aware about what is lawful or unlawful for consumption when he or she refers to *Al-Quran* and *Hadith* because both of these resources had given clear guidance relevant to what is consumable for Muslims. However, the challenge arose in manufactured products that contained hidden information. The solution to this has been addressed through labeling or certification as other sources of awareness about *halal* products by Muslim policy makers and certification bodies in many Islamic countries such as Malaysia.

Abundant empirical evidence supports that "one's religion influences consumer attitude and behaviour in general" (Pettinger, Holdsworth & Gerber, 2004) and "food choices and consumption pattern in particular" (Mennell *et al.*, 1992; Ghadirian and Shatenstein, 1997; Steenkamp *et al.*, 1999; Steptoe *et al.*, 1995; Mullen *et al.*, 2000). Religion also plays a "significant role in many societies of the world pertaining to food

choices" (Musaiger, 1993). (Pettinger, Holdsworth & Gerber, 2004) states that a religion may influence consumer behaviour particularly in food buying and consuming behaviour. Schiffman and Kanuk (1997) also found that religious identity is a "significant factor in buying *Halal* food product". "Muslims have a religious obligation to consume *Halal* foods" (Bonee *et al.*, 2007). In the same way, religiosity is authoritative as a determinant of individual's perception as a *Halal* food consumer (Sitasari, 2008).

### 2.7.2 Attitude

According to Business Dictionary (2015) defined that attitude is a "tendency or a predisposition to respond positively or negatively towards a situation, object, person or ideas". Attitude will responses to challenges, incentives, and rewards and also influence an individual's choice of action. Attitude have four components such as affective (emotions or feeling), conative (inclination for action), cognitive (belief or opinions held consciously), and lastly evaluative (positive or negative response to stimuli or reward). The attitude of food handler towards *halal* and food safety become crucial factor to achieve *halal* quality management.

The attitude of food handler will follow their knowledge and belief regarding a certain product that encouragements individual's target to behave in a certain manner (Xiao *et al.*, 2011). Ajzen (1991) states that "the more favourable the attitude with respect to behaviour, the stronger is the individual's intention to perform the behaviour under consideration".

Next, by having the intention to purchase the *Halal* food the comes from the individual attitude towards *halal* food is developed from their belief (Ajzen, 1991). According to Alam and Sayuti (2011) found that by having a positive attitude have the strong impression on consumer purchase intention and seem to have bigger intending to purchase of *Halal* food (Choo *et al.*, 2004).

Md Mizanur et al (2012) stated that positive attitude will lead to positive behaviour. On the opposing, superficial knowledge leads to a development of negative attitudes and misconception. As a result, it will increase the harmful practice. Many sellers have sufficient knowledge to knowledge of the dangers of contamination, to ensure hygienic handling of food, the clean storage, and preparation of food.

Some previous studies also found a "positive relationship between attitude and consumer purchase intention of *Halal* food products" (Lada *et al.*, 2010). Next research on food buying behaviours of individuals also recognized a "strong positive correlation between individual attitude and purchase intention" (Tarkiainen and Sundqvist, 2011). Lastly, a study by Mukhtar and Butt, (2012) focused on *Halal* food found a "significant relationship between *Halal* food purchase intention and the attitude to purchase it".

### **2.7.3 Behaviour**

Behaviour refers as a response of an individual or group to a person, stimulus, action or environment (Business Dictionary, 2015). Behaviour towards *halal* and food safety practices is also important in achieving the *halal* quality management. Ajzen proposed that attitude will influence the behaviour of an individual. An attitude toward

behaviour can influence positively or negatively the performance of the certain behaviour is. In this research will explain about perceived behavioural control.

Perceived behavioural control refers to opinions of the extent to which the behaviour is measured and manageable. Perceived behavioural control has greater interest than physical control. It also reflects the people's perception of performing the certain behaviour of inquisitiveness (Verbeke and Vackier, 2005).

The ideas of perceived behavioural control are mostly close with the Bandura's (1977) theories of perceived self-efficacy that are concerned with certain actions in the particular situation. According to Liou and Contento, (2001) and Karijin *et al.*, (2007), perceived behavioural control can assess the limits of person's control on his behaviour. The subjective and objective knowledge have two stages even though subjective and objective knowledge there are connected (Alba and Hutchinson, 1987; Brucks, 1985). First stages people do not exactly observe how much or how little they really know the subjective knowledge may over misjudge one's actual product knowledge. Second stages, it will measure the subjective knowledge that can specify self-confidence levels and knowledge levels (Hayat *et all*, 2014).



## CHAPTER 3

### METHODOLOGY

#### 3.1 Introduction

Research methodology is one of the techniques used to conduct a research. There are two types of research methodology that are the quantitative and qualitative method. This research will use the quantitative method. This research method will gather information by using the numerical analysis. This chapter highlights how the research problem was explored, how the participants were selected and the procedure followed to gather the data. The chapter concludes with time frame the completeness of the study.

#### 3.2 Research Framework

In Chapter 2 previously mentioned the literature review on dependent variables and independent variable. The construct of the theoretical framework of dependent variables which is MS1500:2009 from (Mohd Rizuan Abdul Kadir, 2015). Besides that, the literature review discussed about independent variables of trustworthiness (*Halal Status*) by Hayat, M. Awan & et al, (2014), food safety by Zuraini Mohd Nor & et al, (2009) and lastly, personal societal perception by Hayat, M. Awan & et al, (2014). Hence, based on the literature review and theoretical framework, there is a need to examine and discover the link between Halal Food Standard Practices (MS1500:2009), trustworthiness (*Halal Status*), food safety and personal societal behaviour. The conceptual framework as shown in Figure 3.1 will provide the conceptual foundation.

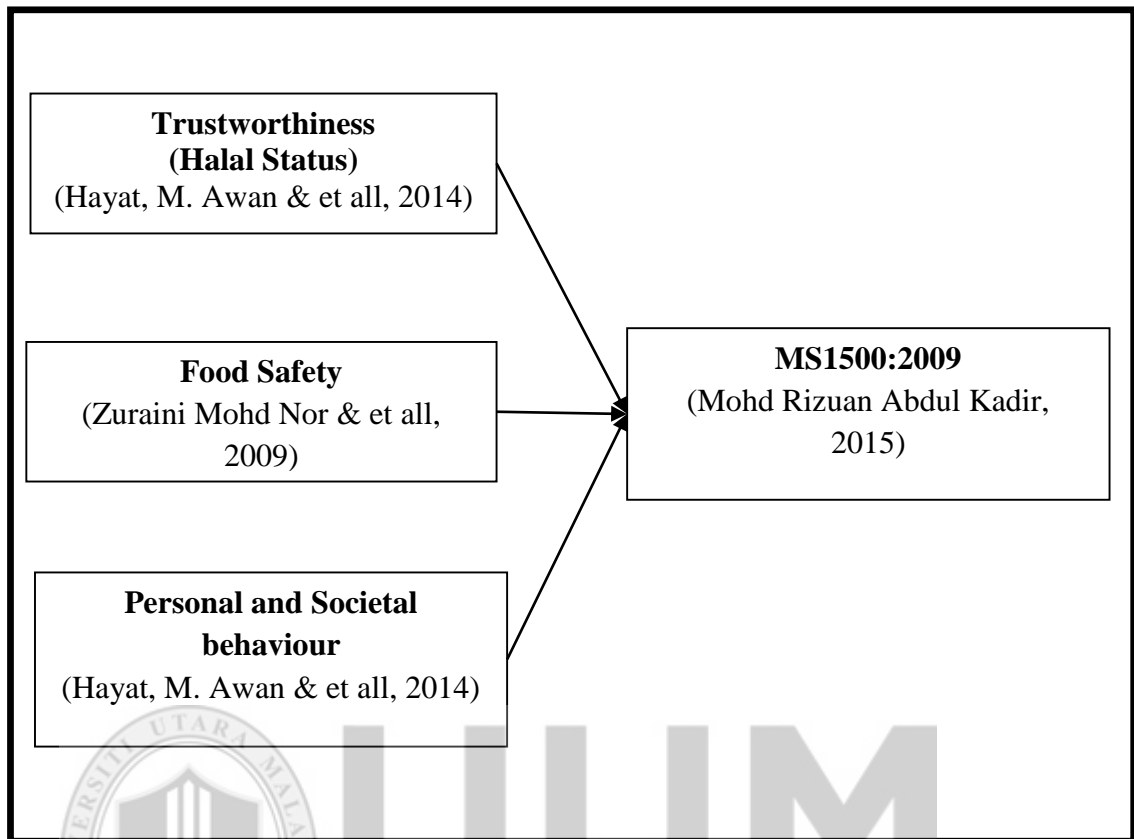
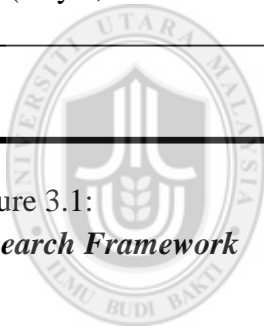


Figure 3.1:  
*Research Framework*



**UUM**  
Universiti Utara Malaysia

### 3.3 Hypothesis

In this study, the researcher would like to study the relationship between independent variable and dependent variable. Therefore, six hypotheses were developed as follows:

H1<sub>0</sub>: There is no significant relationship between trustworthiness and *halal* food standard practices (MS1500:2009).

H1: There is significant relationship between trustworthiness and *halal* food standard practices (MS1500:2009).

H2<sub>0</sub>: There is no significant relationship between the food safety and *halal* food standard practices (MS1500:2009).

H2: There is significant relationship between the food safety and *halal* food standard practices (MS1500:2009).

H3<sub>0</sub>: There is no significant relationship between the personal and societal behaviour and *halal* food standard practices (MS1500:2009).

H3: There is significant relationship between the personal and societal behaviour and *halal* food standard practices (MS1500:2009).

### **3.4 Research Design**

A research design can be referring to the overall approach that researcher chooses to combine the different components of the study in a logical and coherent methods and procedures for collecting and examining the information. The design is to confirm that all information gathered is applicable for solving the research problem. According to Sekaran (2007), research design will examine six basic aspects of research design.

#### **3.4.1 Purpose of the study**

This research was a descriptive study which conducted to study the relationship between determinant factors and halal food standard practices.

#### **3.4.2 Types of Investigation**

This study uses the correlational study as the type of investigation in order to identify the relationship between independent variables and dependent variable. This study also will analyse the relationship between those independent variables with the dependent variables that had been identified in the theoretical framework.

#### **3.4.3 Extent of Researcher Interference**

This study will be conducted in the natural environment with very minimal interference by the researcher which is the normal flow of work. Data will be distributed to the cafeteria's owner and also their workers.

#### **3.4.4 Study Setting**

As the study is a correlational study, the study setting will be on the non-contrived setting. It was called a field study, in which the study will be conducted without the interference of normal work routine.

#### **3.4.5 Unit of Analysis**

The data will be collected from each cafeteria and stall operators and also their workers as an individual data sources as the respondents. 10 workers will be randomly selected from each cafeteria in UUM.

#### **3.4.6 Time Horizon**

Time horizon of the study is cross-sectional studies. In this study, the data are gathered just once. It is because this type of research is done once or called one-shot studies. There is no follow-up will be made upon the completion of answering the research questionnaires.

### **3.5 Measurement and Instruments**

This study will use the questionnaire as a medium to obtain the data needed. Data for this study is collected through a survey questionnaire that was distributed to the cafeteria operators and their workers at UUM cafeteria in Sintok. Elements of the dependent variable are halal food standard practices whereas the independent variables are trustworthiness (*Halal* Status), food safety and as well personal and societal

perception in order to get accurate data for this research. Respondents were asking to rate as their level of agreement on a five–point Likert scale, where 1 represents "strongly disagree" followed by "disagree", "neither agree nor disagree", "agree", and 5 for "strongly agree" as indicate in Table 3.1 below.

Table 3.1:  
***Rating Scales for Variables***

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

The measurement of the variable used in this study was adapted from relevant previous literature with essential changes. The questions have been provided to the respondents in bilingual which is English and Malay. Table 3.2 below show the distribution of variables and measurement of the past research have been used in this study.

Table 3.2:  
***Distribution of Variables and Measurement.***

Variables	Total no. of items	Scales	Sources
<u>Dependent</u>	10	Likert Scale 1 - 5	(Mohd Rizuan Abdul Kadir, 2015)
<u>Independent</u>			
Trustworthiness ( <i>Halal Status</i> )	10		(Kasmarini Baharudin & <i>el all</i> , 2015)
Food safety	12		(Zuraini Mohd Nor & <i>et all</i> , 2009)
Personal and societal behaviour	12	Likert Scale 1 - 5	(Hayat, M. Awan & <i>et all</i> , 2014)
<b>TOTAL</b>	<b>42</b>		

There are five sections in the questionnaire, consisting of Section A: Demographic Segmentation, Section B: Halal Food Standard Practices, Section C: Trustworthiness, Section D: Food Safety and Section E: Personal and Societal Perception.

### **3.5.1 Demographic Segmentation**

In this section consists of six question and will asking about the respondents' demographic data such as their age, gender, religion, ethnicity, citizenship, and training on food safety.

### **3.5.2 Halal Food Standard Practices**

In this research, the item used for Halal Food Standard Practices were adopted from Mohd Rizuan Abdul Kadir, (2015). The questionnaire consists of 10 items to assess the understanding of the respondents about the Halal Food Standard Practices. The researcher used the Likert scales for respondents to rate the measurement item with 1 = strongly disagree and 5 = strongly agree.

### **3.5.3 Trustworthiness (*Halal Status*)**

The measurement for variable trustworthiness (*Halal Status*) was derived from (Kasmarini Baharudin & el all, 2015). The questionnaire consists of 10 items to measure the trust of the respondents about the *Halal* status of a product. The researcher used the Likert scales for respondents to rate the measurement item with 1 = strongly disagree and 5 = strongly agree.

### **3.5.4 Food Safety**

For food safety variable, the measurement was derived from Zuraini Mohd Nor & et all, (2009). The questions consist of 12 items that measure the respondent' understanding about the food safety. The researcher used the Likert scales for respondents to rate the measurement item with 1 = strongly disagree and 5 = strongly agree.

### **3.5.5 Personal and Societal Behaviour**

The researcher derived the questionnaire for personal societal behaviour from Hayat, M. Awan & et all, (2014). The questions consist of 12 items to measures the behaviour and attitude of the respondents. The researcher used the Likert scales for respondents to rate the measurement item with 1 = strongly disagree and 5 = strongly agree.

## **3.6 Population and Sampling**

### **3.6.1 Target Population**

The target population for this study is all cafeterias at UUM Sintok as mention earlier. The total number of the respondent is about 140 including the owner of the cafeteria and stall and also their workers. The researcher assumed that each cafeteria has at least five workers including the owner and each stall at least have two workers including the owner. Table 3.3 below show the number of the population.



Table 3.3:  
*List of Cafeterias at UUM.*

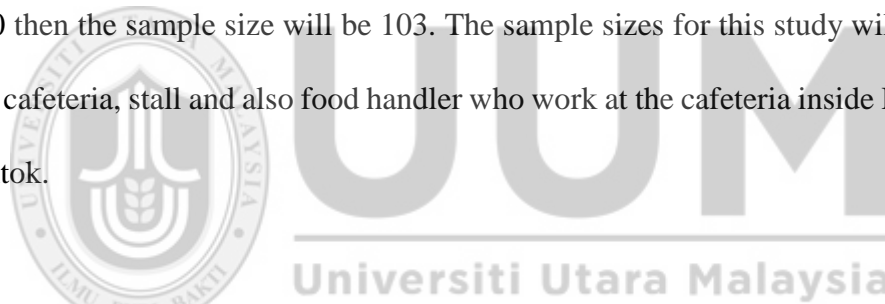
DPP	Cafeteria	Stalls	Workers
Tradewinds	0	0	0
Proton	1	4	1x5=5 4x2=8
TNB	0	7	7x2=14
MAS	1	0	1x5=5
EON	0	9	9x2=18
Petronas	0	6	6x2=12
Sime Darby	1	3	1x5=5 3x2=6
Telekom	1	0	1x5=5
MISC	1	4	1x5=5 4x2=8
BSN	0	0	0
Muamalat	0	9	9x2=18
Yayasan Al-Bukhary	1	0	1x5=5
SME	1	0	1x5=5
Bank rakyat	1	0	1x5=5
Kachi Training Centre	0	8	8x2=16
<b>TOTAL</b>	<b>8</b>	<b>48</b>	<b>140</b>

### **3.6.2 Sampling Procedure**

To answer the research questions through data collection and subsequence analyses, survey method is powerful and useful in finding the answers. If the population is not correctly targeted, they can do more harm than good in the study. Besides that, the survey would be in vain if data are not collected from the right people that can provide the correct answer to solve the problem.

#### **3.6.2.1 Sampling Size**

Based on Umar Sekaran Table to determine the sample size, if the size of population 140 then the sample size will be 103. The sample sizes for this study will focus on to the cafeteria, stall and also food handler who work at the cafeteria inside DPP in UUM Sintok.



#### **3.6.2.2 Sampling Method**

The sampling technique used in this study is probability sampling technique. This is because the elements in the population have any probabilities to be chosen as sample subject. Under the probability sampling technique, the sampling design chosen is Simple Random Sampling since every element in the population has equal chances to be selected as a subject.

### **3.7 Data Collection Procedures**

In this study, the data is collected through two sources which are primary and secondary data.

#### **3.7.1 Primary Data**

The primary data will be collected through structured questionnaire. The data will be collected through personally administered questionnaire because this is the best way to get the full response from respondents in a short period of time. It also helps the respondents if they have any doubtful question might be clarified on the spot. The primary data of this study will be gathered through 140 sets of questionnaires since the number of population is small. The questionnaire will be distributed according to the number of workers at food stall and cafeteria in UUM. This questionnaire contains structured or closed-ended question that is a rating scale or Likert Scale to provide answers for organization. Besides that, the researcher is also obtained through unstructured interview with their cafeteria's owner in order to get information about Halal Food Standard Practices that they are implemented at their cafeteria.

#### **3.7.2 Secondary Data**

This study will use two types of research data, which are internal and external sources. The data available outside the organization which comes from one main source which is from the library is the external secondary data. For this study, the researcher will use the data from UUM's library, internet journals, articles, online publications and

internal data's that are saved by the organizations such as the background of the university.

### **3.8 Data Analysis Technique**

The collected data will be analysed by using Statistical Package for Social Science Program (SPSS) version 23.

### **3.9 Pilot Study**

A pilot study can be referring to a small scale scientific research that gathers data from respondent similar to the respondent that will be used in the actual study. The aim of carrying out the pilot study is to make sure whether the respondents are understanding with the items in the instrument. By performing a pilot study, the reliability of the measuring tools and its acceptability of the study was examined. So that, the potential problems could be recognized and classify before begin the actual study. The procedure of the pilot study is necessary before the process of collecting the actual data. The details gathered was used to improve the instruments or method used where appropriate.

The pilot study was conducted based on 8 respondents who is the student and work part-time at the cafeteria in UUM between 14 March until 18 March 2016. The researcher chooses the student at UUM because to know their perception about the *halal* food. The results of the pilot study will help the researcher in the modified and elimination the questions that are considered to be unclear to the participants.

Essentially, to ensure that the questionnaire is fully understood by the respondents the alterations and improvement will be done on the questionnaire.

### **3.10 Reliability Test**

The reliability is a test of how reliably a measuring instrument measures whatever concept it is measuring. The reliability of the questionnaire has been verified by using Cronbach's Alpha or called Alpha Coefficient to display the internal dependability of the questionnaire. Sekaran (2009) states that the reliability of the questionnaire is better if the value of reliability coefficient closer to 1.00. Commonly, the acceptable alpha coefficient should be more than 0.7 and it is still acceptable if the value of Cronbach Alpha of 0.6 but is poor.

### **3.11 Validity Test**

Validity test is a proof that the technique, process or instrument used to measure a concept does really measure the intended concept (Sekaran, 2009). Validity test help to recognize whether the variables studied in this research are measurable and valid. In this study, the researcher performed face validity and congruent (construct) validity. Face validity will refer the instrument (questionnaire) to the expert in *halal* management practices in order to approve that the items asked were measuring understudied variables. The result obtained from congruent validity test will show how well the use of the measure fit the theories around which the test is designed. For congruent validity, the researcher will depend on the results of factor analysis because congruent validity is performed to identify the discriminant validity and the convergence validity.

### **3.12 Data Screening**

Data screening is the process of ensuring the data is reliable, usable, and valid for testing. Data screening process will focus on Missing value, Outlier Test and Normality test.

#### **3.12.1 Multivariate Outliers Test**

Multivariate Outliers Test can be done to test the extreme or unusual values on a single variable or a combination variable (Meyers, et. al, 2006). To test the multivariate outliers, the researcher evaluates by using Mahalanobis distance values.

#### **3.12.2 Normality Test**

Normality test is referring to the distribution of the data for the variables. Function of the normality test is used to identify whether a data is well-modelled by a normal distribution or not, or to analyse how probable an original random variable is to be normally distributed. The researcher will use histogram test to check the normality. If the histogram looks like bell shape, the data is normal.

### **3.13 Inferential Analysis**

This section will discuss the results of data analysis using inferences analysis. The inferential analysis is to test hypotheses is accepted or rejected in this study. In the inferences analysis will conducted the T-test, ANOVA-one-way, Correlation Pearson analysis and Multiple Regression analysis.

### **3.13.1 T- test Analysis**

According to Utah (2013), the t-test sample analysis refers to one statistical analysis used to see a significant difference for the mean value of the two group or two sets of data to be tested. There are three types of t-test analysis known One sample t-test, Independent Sample t-test and Paired-sample t-test. The t-test sample analysis is used to see the difference between gender and halal food standard practices at cafeteria's operators in UUM. The researchers will use the Independent sample t-test.

### **3.13.2 ANOVA-One -Way Analysis**

ANOVA-One-way test correlation is a statistical technique used for investigate the difference among mean value of the two or more populations. The dependent variable is and interval scale and the independent variable based on the nominal scale because it just groups the respondents into different categories (Awais Bhatti, et. al., 2015). Therefore, when there is one non-metric independent variable with two or more group and one-metric dependent variables, the one-way ANOVA is appropriate method to use.

### **3.13.3 Pearson's Correlation Analysis**

To examine the relationship between independent and dependent variables understudied the Pearson's correlation analysis will be done. Pearson correlation coefficient is used to illustrate the degree of linear relationship between independent and dependent variables. The symbol of a correlation coefficient is "r" and its range is from -1.00 to +1.00. The value of correlation coefficient notifies two items about the

relationship between two variables which are the direction of the relationship and its magnitude. The relationship is statistically significant if the value of r closer to 1.00 (Muchinsky, 1993). Table 3.4 below shows the explanation of the strength of correlation according to Meyer et. al (2006):

Table 3.4:

***Interpretation of strength of Correlation Coefficient.***

<b>Value of Coefficient</b>	<b>Relation between Variables</b>
0.50-1.00	Strong
0.30-0.49	Moderate
0.10-0.29	Weak

The following analysis was conducted in this research to achieve the research

**The research objective 1, which is “to explore the determinant factors that influences halal food standard practices (MS1500:2009)”, can be answered by measuring using Pearson’s Correlation.**

**The research objective 2, which is “to investigate the relationship between factors and halal food standard practices (MS1500:2009)”, can be answered by measuring using Pearson’s Correlation.**

**The research objective 3, which is “to identify the most influenced factors of halal food standard practices (MS1500:2009) in cafeteria operator at UUM”, can be answered by measuring using Multiple Regression Analysis.**



### 3.13.4 Multiple Regression Analysis

The purpose of performing this analysis is to see how much of the variance in the dependent variables that are being affected by the independent variables. The value of R square is used to interpret the data in terms of variance explained of both variables (Gliner *et al.*, 2009). This analysis was also required to achieve the third objective of this study. Multiple regressions analysis was applied to analyse the best factor among the independent variables which are consist trustworthiness (*Halal Status*), food safety, personal and societal perception in influencing the halal food standard practices at cafeteria operator in UUM Sintok.

Besides that, to identify the most influence of independent variables on dependent variables, it can be seen through the significant value provided in the regressions table. If the value is below the significant level of  $p < 0.05$ , it means that the independent variable influences the dependent variable. If the value is above the sign value, it designates that there is no influence between the independent and dependent variables (Gliner *et al.*, 2009). Therefore, the multiple regressions had been implemented in order to determine the factor that has strongest influence of MS1500:2009.

### 3.14 Summary of Test on Hypotheses

Table 3.5 shows the summary of test of hypotheses of this study.

Table 3.5:  
***Statistical Analysis.***

	<b>Hypotheses</b>	<b>Test</b>
H1 <sub>0</sub> :	There is no significant relationship between trustworthiness and <i>halal</i> food standard practices (MS1500:2009).	Multiple Regression
H1:	There is significant relationship between trustworthiness and <i>halal</i> food standard practices (MS1500:2009).	Multiple Regression
H2 <sub>0</sub> :	There is no significant relationship between the food safety and <i>halal</i> food standard practices (MS1500:2009).	Multiple Regression
H2 <sub>0</sub> :	There is significant relationship between the food safety and <i>halal</i> food standard practices (MS1500:2009).	Multiple Regression
H3 <sub>0</sub> :	There is no significant relationship between the personal and societal behaviour and <i>halal</i> food standard practices (MS1500:2009).	Multiple Regression
H3:	There is significant relationship between the personal and societal behaviour and <i>halal</i> food standard practices (MS1500:2009).	Multiple Regression

### **3.15 Conclusion**

This chapter has designated the progress of the research model for this study. The research framework and research hypotheses have been explained following the research methodology and the research design. Different statistical analysis will be used such as data screening, descriptive analysis and inferential analysis to examine the relationship between Dependent variables and Independent variables.



## CHAPTER 4

### RESULTS AND FINDINGS

#### 4.1 Introduction

In this chapter, will present the findings of the study. The results of the study are obtained from by using analytical manner. The first section will be presents the survey responses follow by the demographic analysis such as gender, age, religion, ethnicity, citizenship and training on the food safety. Next section will seek to present the analysis by using several statistic methods such pilot study, linearity analysis, normality analysis, reliability analysis and inferential analysis (Pearson Correlation and Multi-Regression).

These analyses are conducted using the SPSS 23.0. Thus the findings are sequencing in the order of (1) Survey responses, (2) data Screening (Missing value, Outlier and Normality) (3) Pilot study, (4) Descriptive analysis – profiles of respondent and demographic profiles of respondents, (5) Inferential analysis (T-test, ANOVA-One-Way, Pearson's Correlation analysis and Multiple Regression analysis and (6) Testing the hypothesis. Finally, the end of this chapter with the summary of the findings.

#### 4.2 Survey Responses

From 140 set of questionnaires distributed to the respondents, only 103 set were returned. The rate of response is 73.57%. According to Sekaran & Bougie, (2009), the number of returned questionnaire is considered to be at the acceptable.

### **4.3 Data Screening**

Data screening is a process to ensure the data collected is qualified to carry out further analyses and ready for analysis before allowing researchers to subsequent statistical analysis. Matter the most important is to ensure that data shown is can be embraced and valid for theoretical studies.

#### **4.3.1 Missing Value**

Based on the analysis, the results derived from SPSS Version 23.0, the percentage of missing values recorded 0.00% thus confirmed that there are no missing values during the inputting and transferring the data.

#### **4.3.2 Multivariate Outliers Test**

Mahalanobis distance values are referred to test the multivariate outliers. The value of Mahalanobis distance should not exceed 16.27 (Meyers et al, 2006). Based on data findings, the value of Mahalanobis distance are 16.25, therefore multivariate outliers do not been identified. Table 4.1 below shows the table of extreme value.

Table 4.1:  
*Mahalanobis Distance*

			Case Number	Value
Mahalanobis Distance	Highest	1	91	16.25106
		2	14	12.47752
		3	45	11.95188
		4	94	9.63668
		5	96	9.16992
	Lowest	1	90	.03446
		2	102	.12436
		3	98	.12436
		4	73	.13706
		5	75	.19401

### 4.3.3 Normality Test

In normality test, the researcher uses the histogram method for testing the data whether the data are normally distributed or not distributed normally. Distribution of empirical data (Histogram) should be bell-shaped and resembles a normal distribution. Graph 4.1, Graph 4.2, Graphs 4.3 and Graph 4.4 below shows the histograms for all variables used in the study. Each graph shows a histogram like bell and normally distributed.

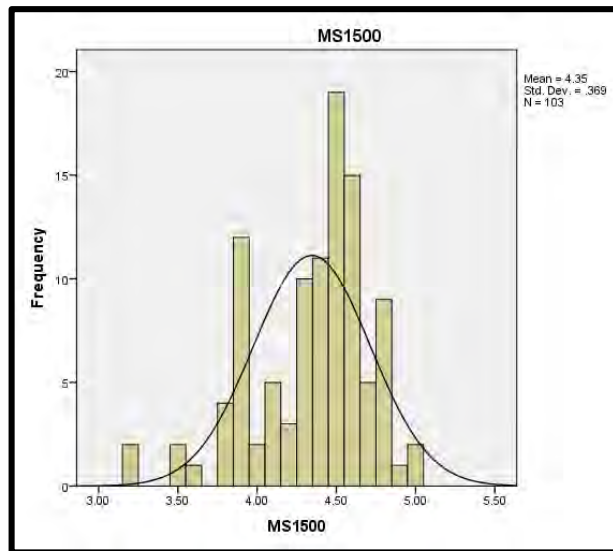


Figure 4.1:  
*Normally Distribution for Dependent Variable (DV).*

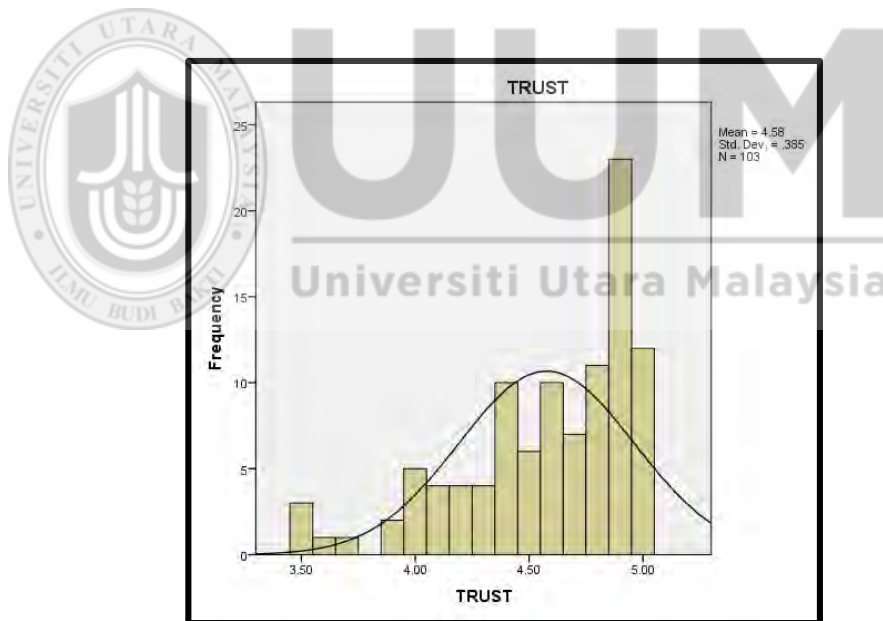


Figure 4.2:  
*Normally Distribution for Trustworthiness (Halal Status) (IV).*

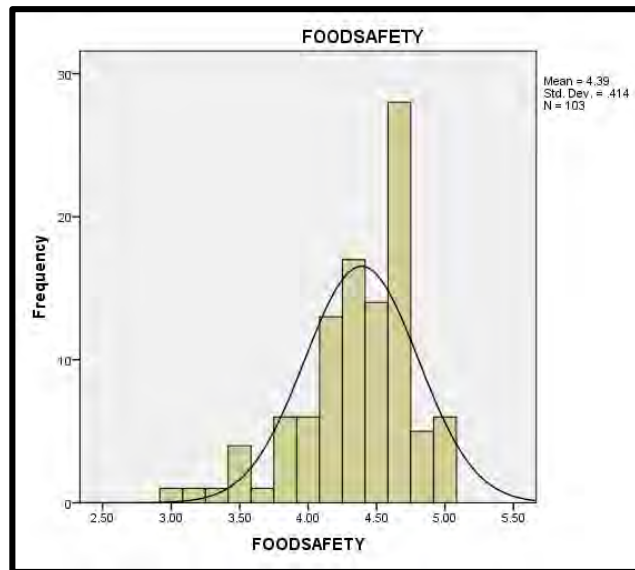


Figure 4.3:  
*Normally Distribution for Food Safety (IV).*

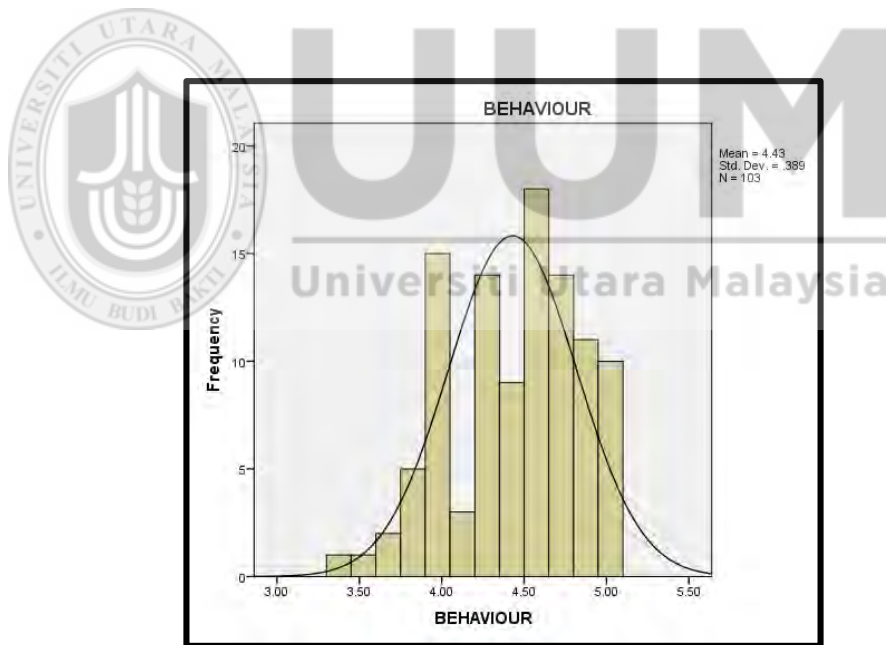


Figure 4.4:  
*Normality Distribution for Personal Social Behaviour(IV).*



#### 4.4 Pilot Study

Pilot study is implemented to study the reliability of the measurement used in this study. According to Sekaran & Bougie, (2009), the value 0.7 of Cronbach Alpha and above is considered as reliable while it is acceptable if the value 0.6 of Cronbach Alpha but is poor. Based on the reliability test for pilot study and actual test all the variables are accepted because the value of Cronbach Alpha above 0.7. Table 4.2 below showed the summarized the values of Cronbach Alpha for each dimension understudied.

Table 4.2:  
*The Cronbach Alpha for Pilot Test.*

Variables	Pilot Test ( <i>n</i> =8)	Actual Test ( <i>n</i> =103)	Result
<b>Section B:</b>			
MS1500:2009	0.768	0.724	Accepted
<b>Section C:</b>			
Trustworthiness ( <i>Halal Status</i> )	0.860	0.840	Accepted
<b>Section D:</b>			
Food Safety	0.941	0.830	Accepted
<b>Section E:</b>			
Personal Societal Behaviour	0.943	0.867	Accepted

#### 4.5 Descriptive Analysis

The data for this study was collected from cafeteria and stall operator and also their workers at UUM Sintok, Kedah.

#### 4.5.1 Respondents Demographic Information

Table 4.3 shows the demographic profiles of the respondents. Majority respondent as shown in Table 4.3 were male (56.3%) as compared to female (43.7%). Besides that, the result also show that the dominant age category involved in this study were between 26-35 years old with a total 103 respondents (36.9%). In addition, the majority of respondents are Islam which is 97.1%. Most of the respondents are Malay which is 74.8% follow by non- Malay by 25.3 %. The result shows that 75.7% of the respondents are Malaysian and 24.3% are non- Malaysian. Lastly, 80.6% of the respondents attend the training in the food safety.

Table 4.3:  
*Respondent Demographic Characteristic*

Num.	Demographic' Characteristic	Frequency	Percentage (%)	
1	<b>Gender</b>	Male	58	56.3
		Female	45	43.7
2	<b>Age</b>	< 25 years' old	26	25.2
		26-35 years' old	38	36.9
		36-45 years' old	28	27.2
		46-55 years' old	9	8.7
		>56 years' old	2	1.9
3	<b>Religion</b>	Islam	100	97.1
		Non-Islam	3	2.9
4	<b>Ethnicity</b>	Malay	77	74.8
		Non- Malay	26	25.2
5	<b>Citizenship</b>	Malaysian	78	75.7
		Non- Malaysian	25	24.3
6	<b>Training on food safety</b>	Yes	83	80.6
		No	20	19.4
<b>TOTAL</b>		<b>103</b>	<b>100</b>	

## 4.6 Inferential Analysis

This section will discuss the results of data analysis using inferences analysis. The inferential analysis is to test hypotheses is accepted or rejected in this study. In the inferences analysis will conducted the T-test, ANOVA-one-way, Correlation Pearson analysis and Multiple Regression analysis.

### 4.6.1 T-Test

Table 4.4:

*T-Test for Differences in Gender Towards MS1500:2009.*

Gender	N	Mean	Std. Deviation	t	Sig- (2-tailed)
Male	58	4.3414	0.37136	-0.132	0.895
Female	45	4.3511	0.37088	-0.132	0.895

From the Table 4.4 above, independent  $t$  test sample shows the hypothesis is rejected because the value of  $p$  is greater than 0.05 ( $p > 0.05$ ). The value of  $p$  for both male and female are 0.895. This means that differences in gender does not have significant relationship with MS1500:2009. The mean scores for both genders are 4.3414 and 4.3511.

#### 4.6.2 ANOVA-One-Way

Table 4.5:

*ANOVA-One-Way for Differences in Age Towards MS1500:2009.*

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	0.061	4	0.015	0.108	0.980
Within Groups	13.855	98	0.141		
Total	<b>13.916</b>	<b>102</b>			

Table 4.5 above shows the test for ANOVA one-way that conducted to test whether the difference of age has significant relationship towards MS1500:2009. The result showed that the hypothesis is rejected because the value of  $p < 0.980$ .

#### 4.6.3 Pearson's Correlation Analysis

Pearson's correlation analysis is the statistical analyses that describe the relationship between two variables that exist naturally in the environment. According to Sekaran and Bougie (2009), Correlation measures three characteristics, which are the the degree of the relationship, the form of the relationship and direction of the relationship. In this study, Pearson's Correlation analysis is done to examine the relationship between dependent and independent variables understudied.

Simple correlation coefficient is an arithmetical measure of the co-variation or relationship between two variables (Zikmund, 2003). The value of correlation coefficient,  $r$ , ranges from the +1.00 to -1.00. Cohen (1988) states that, the value of  $r$  ranging from 0.10 to 0.29 is viewed as indicating low degree of correlation; the value of  $r$  from 0.30 to 0.49 suggests the moderate degree of correlation and value of  $r$  ranging from 0.50 to 1.00 viewed as having high degree of correlation. Below is the simplified table on the correlation coefficient. Table 4.6 below show the correlational analysis result for all variables understudied.

Table 4.6:  
***Relationship of Correlation.***

Value of Coefficient	Relation between Variables
0.5 – 1.00	Strong
0.3 – 0.49	Moderate
0.1 – 0.29	Weak

Table 4.7:  
***Result of Pearson's Correlation Analysis(n=103).***

	Trustworthiness	Food Safety	Behaviour	Quality
Trustworthiness	1			
Food Safety	0.635**	1		
Behaviour	0.364**	0.514**	1	
MS1500:2009	0.532**	0.588**	0.400**	1

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

#### 4.6.3.1 Interpretation Results of Correlation Analysis

Based on the results of Correlation analysis in Table 4.7 above, the interpretation of relationship between independent and dependent variables understudied are as follows:

a) **Relationship between Trustworthiness (*Halal* Status) with Food Safety.**

Table 4.7 above indicated that Trustworthiness is positive and have significant relationship with Food Safety. The correlation coefficient was 0.635\*\* and this indicate that the relationship is strong.

b) **Relationship between Trustworthiness (*Halal* Status) with Personal Societal Behaviour.**

Table 4.7 above indicated that Trustworthiness is positive and have significant relationship with Personal Societal Behaviour. The correlation coefficient was 0.364\*\* and this indicate that the relationship is moderate.

c) **Relationship between Trustworthiness (*Halal* Status) with Halal Food Standard Practices.**

Table 4.7 above indicated that Trustworthiness is positive and have significant relationship with Halal Food Standard Practices. The correlation coefficient was 0.532\*\* and this indicate that the relationship is strong.

**d) Relationship between Food Safety with Personal Societal Behaviour.**

Table 4.7 above indicated that Food Safety is positive and have significant relationship with Personal Societal Behaviour. The correlation coefficient was 0.514\*\* and this indicate that the relationship is strong.

**e) Relationship between Food Safety with Halal Food Standard Practices.**

Table 4.7 above indicated that Food Safety is positive and have significant relationship with Halal Food Standard Practices. The correlation coefficient was 0.588\*\* and this indicate that the relationship is strong.

**f) Relationship between Personal Societal Behaviour with Halal Food Standard Practices.**

Table 4.7 above indicated that Personal Societal Behaviour is positive and have significant relationship with Halal Food Standard Practices. The correlation coefficient was 0.400\*\* and this indicate that the relationship is moderate.

#### **4.6.4 Multiple Regression**

Multiple regression analysis was applied to identify the best factor influencing the MS1500:2009 at cafeteria in UUM Sintok. The independent variables of trustworthiness (*Halal* Status), food safety and personal societal behaviours were tested using multiple regressions to achieve the third objective of this study.

If the value is below than the significant level of  $p < 0.05$ , this indicates that the independent variable influences the dependent variable. Besides that, if the value is above the significant value, it indicates that there is no influence between the independent and dependent variables (Gliner *et al.*, 2009).

Table 4.8:  
**Multiple Regression Analysis Result.**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.290	0.408		3.163	0.002
Trustworthiness	0.248	0.097	0.258	2.557	0.012
Food Safety	0.324	0.098	0.363	3.306	0.001
Behaviour	0.113	0.086	0.119	1.310	0.193
P < 0.05      R = 0.631      R <sup>2</sup> = 0.399      F = 21.874      p = 0.000					

The regression result in Table 4.8 shows that trustworthiness, food safety and personal societal behaviour jointly explain 39.90% of the variance in MS1500:2009. The model proposed is significant at 0.00 level (F=21.874, p=0.000). Besides that, food safety being the most significant variables that MS1500:2009 with ( $\beta = 0.324$ ,  $p \leq 0.05$ ), followed by trustworthiness (*Halal Status*) ( $\beta = 0.248$ ,  $p \leq 0.05$ ), and personal societal behaviour ( $\beta = 0.113$ ,  $p \leq 0.05$ ). The remaining 60.1% variance could be caused by other variables that are not covered in this research.



## 4.7 Hypothesis Testing

Table 4.9:

***Summary of Hypotheses Testing***

Hypotheses	Result
<b>H1<sub>0</sub>:</b> There is no significant relationship between trustworthiness and <i>halal</i> food standard practices (MS1500:2009).	REJECTED
<b>H1<sub>1</sub>:</b> There is significant relationship between trustworthiness and <i>halal</i> food standard practices (MS1500:2009).	SUPPORTED
<b>H2<sub>0</sub>:</b> There is no significant relationship between the food safety and <i>halal</i> food standard practices (MS1500:2009).	REJECTED
<b>H2<sub>0</sub>:</b> There is significant relationship between the food safety and <i>halal</i> food standard practices (MS1500:2009).	SUPPORTED
<b>H3<sub>0</sub>:</b> There is no significant relationship between the personal and societal behaviour and <i>halal</i> food standard practices (MS1500:2009).	SUPPORTED
<b>H3:</b> There is significant relationship between the personal and societal behaviour and <i>halal</i> food standard practices (MS1500:2009).	REJECTED

**a) Trustworthiness (*Halal Status*)**

**H1<sub>0</sub>:** There is no significant relationship between trustworthiness and *halal* food standard practices (MS1500:2009).

The relationship between trustworthiness is tested against MS1500:2009. The results from Multiple Regression Analysis indicate that there is significant value is  $p= 0.012$ , ( $p<0.05$ ). Therefore, hypotheses null was rejected.

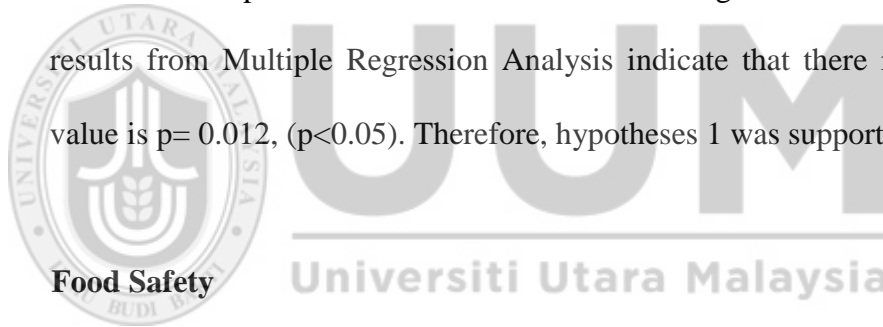
**H1:** There is significant relationship between trustworthiness and *halal* food standard practices (MS1500:2009).

The relationship between trustworthiness is tested against MS1500:2009. The results from Multiple Regression Analysis indicate that there is significant value is  $p= 0.012$ , ( $p<0.05$ ). Therefore, hypotheses 1 was supported.

**b) Food Safety**

**H2<sub>0</sub>:** There is no significant relationship between the food safety and *halal* food standard practices (MS1500:2009).

The relationship between food safety is tested against MS1500:2009. The results from Multiple Regression Analysis indicate that there is significant value is  $p= 0.001$ , ( $p<0.05$ ). Therefore, hypotheses null was rejected.



**H2<sub>0</sub>:** There is significant relationship between the food safety and *halal* food standard practices (MS1500:2009).

The relationship between food safety is tested against MS1500:2009. The results from Multiple Regression Analysis indicate that there is significant value is  $p= 0.001$ , ( $p<0.05$ ). Therefore, hypotheses 2 was supported.

c) **Personal Societal Behaviour**

**H3<sub>0</sub>:** There is no significant relationship between the personal and societal behaviour and *halal* food standard practices (MS1500:2009).

The relationship between food safety is tested against MS1500:2009. The results from Multiple Regression Analysis indicate that there is no significant value because  $p= 0.193$ , ( $p<0.05$ ). Therefore, hypotheses null was supported.

**H3:** There is significant relationship between the personal and societal behaviour and *halal* food standard practices (MS1500:2009).

The relationship between food safety is tested against MS1500:2009. The results from Multiple Regression Analysis indicate that there is no significant value because  $p= 0.193$ , ( $p<0.05$ ). Therefore, hypotheses 3 was rejected.

## 4.8 Conclusion

This chapter presented the analysis results of the study. Five types analysis were conducted in this study. The first analysis performed is the survey responses. The second analysis conducted were the data screening and followed by pilot study. Next, is the descriptive analysis and the purpose of descriptive analysis is to look at the respondents' demographic information. The fifth analyses are inferences analysis which is T-test, ANOVA, Pearson Correlation and Multiple Regression analysis.

As a summary, the results of the study showed that trustworthiness, food safety, and personal societal behaviour demonstrate significant relationship with transfer of training. Moreover, the multi regression results are also able to prove that two variables are significantly related with the MS1500:2009 and one variable are not significant. The results also indicated that, the three hypothesis proposed in this study are accepted and three hypotheses are rejected. The next chapter will discuss the findings, provide recommendations, and make conclusion.

## CHAPTER 5

### DISCUSSION, RECOMMENDATION AND CONCLUSION

#### 5.1 Introduction

This chapter will elaborate the discussion, recommendation and conclusion of the study. In this chapter will seek to summarize the discussion of the study and outlining the key recommendation that is arrived based on the finding of this research. This chapter will conclude with final conclusion on the overall study at the end.

#### 5.2 Discussion of the findings

There were 103 respondents in this study which encompassed from cafeteria inside UUM. Most of the respondents know how to read and some of the respondent does not know how to read. Besides that, some of respondents are not Malaysian and cannot understand Malay language properly. So that, because of this problem the researcher need to explain and help them to understand the questions. Without proper explanation they cannot answer the question properly even though the researcher provides two languages which is Malay and English.

The independent variables of this study were trustworthiness (*Halal* Status), food safety and personal societal behaviour. Furthermore, this study aimed to explore the determinant factors of MS1500:2009 at cafeteria UUM. Besides that, the researcher wants to investigate the relationship between dependent variable and independent

variable and lastly to identify the most influenced factors toward MS1500:2009 at cafeteria UUM.

Data was collected through survey method. The sample used for this study is in cafeteria operator inside UUM. The unit of analysis was individual with the cafeteria and stall owner and also their workers as the respondents. Around 140 set of questionnaires distributed and the researcher received back a total of 103 questionnaires from the respondents.

Based on the data analysis shows that, all the independence variables which are trustworthiness (*Halal Status*) and food safety very important factor in MS1500:2009 whereas personal societal behaviour least important factor in MS1500:2009. Besides that, the result of correlation shows positive relationship between independent variable and dependent variable. The positive relationship between combinations of all independent variables to dependents variable are fully supported. Furthermore, the result of multiple regression shows that three null hypotheses and three hypotheses which are hypothesis one and hypothesis two for trustworthiness (*Halal Status*) and food safety are accepted and hypothesis three for personal societal behaviour are rejected.

### **5.3 Objectives Achievement**

The main purpose of this study is to explore the determinant factors that influence *halal* food standard practices (MS1500:2009) in cafeteria operator at UUM. Therefore, based on the findings from the data analysis, it can be concluded that:

#### **5.3.1 Objective 1: To explore determinant factors that influence *halal* food standard practices (MS1500:2009).**

The first objective of this study is to study in depth the determinant factors of MS1500:2009 at cafeteria inside UUM. The researcher wants to explore more about the factors that can be influence in *halal* food standard for production, preparation, handling, and storage. Based on the finding, most of the respondent understand what is *halal* food and know how to provide the *halal* for their customer.

The researcher finds out three factors that relevant for MS1500:2009 at UUM Sintok.

The first factor of MS1500:2009 is trustworthiness (*Halal* Status) of the raw materials that cafeteria operator used to provide food must be *halal*. The second factor are food safety that the cafeteria operator servers to their customer. The food to be serve should be *halal*, contains nutrient and hygiene. Lastly, the third factor are personal societal behaviour focus more on behaviour of the food provider.

### **5.3.2 Objectives 2: To investigate the relationship between factors and *halal* food standard practices (MS1500:2009).**

This study also aims to investigate the relationship between factors and MS1500:2009. Based on Pearson's correlation analysis result shows that positive linear correlation between independence variables and dependent variable. The first factor is trustworthiness (*Halal* status) have strong positive relationship with the MS1500:2009 ( $r = 0.532^{**}$ ,  $n = 103$ ,  $p \leq 0.01$ ). Therefore, it is agreed that trustworthiness (*Halal* Status) does influence the MS1500:2009. The positive influenced is supported with the study by Lindenmayer (2001) states that one aspect of *halal* status are consumer has a right to know before he or she is purchasing and then using or consuming it.

The second factor is food safety also have strong positive relationship with the MS1500:2009 ( $r = 0.588^{**}$ ,  $n=103$ ,  $p \leq 0.01$ ). Therefore, it is agreed that food safety does influence the MS1500:2009. MS1500:2009 is one of the food safety standard in Malaysia. Food safety standards help the cafeteria establish good food processes so they can produce safe food that fulfil with food safety legislation and meet quality levels expected by consumers.

Lastly, the third factor of MS1500:2009 is personal societal behaviour have moderate positive relationship with the MS1500:2009 ( $r = 0.400$ ,  $n= 103$ ,  $p \leq 0.01$ ). Therefore, it is agreed that personal societal behaviour does influence the MS1500:2009.



### 5.3.3 Objective 3: To identify the most influences factors of *halal* food standard practices (MS1500:2009) in cafeteria operator at UUM.

The third objective of this study are to identify the most influenced factor of MS1500:2009. Based on the data findings in Multiple Regression analysis shows that the most influenced factor of MS1500:2009 are food safety ( $\beta = 0.324$ ,  $p \leq 0.05$ ) compared with others factor which is trustworthiness (*Halal* Status) ( $\beta = 0.248$ ,  $p \leq 0.05$ ) and personal societal behaviour ( $\beta = 0.113$ ,  $p \leq 0.05$ ).

Besides that, MS1500:2009 is one of the quality standard in food safety. In the preparation of *halal* food, hygiene, sanitation and food safety are fundamentals of the *halal* standard. It includes the several aspects of manufacturing and storage of food, machines and processing aids and the premises for processing, keeping the devices and utensils, clothing and also personal hygiene.

Food safety is one of important aspect in *halal*. The objectives of food produced must be not hazardous to human health, safe and hygienic. Hygienic food, drinks and products should free from najis or contamination and harmful germs as in the context of *halal*. Food safety stress in hygiene matter also same in Islamic ways. During processing food, hygienic has been emphasize in *halal* including various aspect such as equipment and the working premises environment, personal hygiene and clothing. Because of that, it clearly shows that practice of keeping ourselves and the things around us clear in order to prevent diseases are very particular in *halal* food matter.

John Funston (2006) states that since 1980s Muslim in Malaysia have become more concern about their food are fully meets the *halal* requirement or not and also free from alcohol and pork. This is because *halal* status is more crucial aspect in producing *halal* food starting from raw materials until the food is serve to customer. *Syariah* law (law of Islam) will covers the concept of *halal* food. Besides that, *halal* food must meet the standards of *halalan tayyiban* (lawful and good quality) which cover the full concept of quality are should be wholesome and permissible by Allah, safe to eat, hygiene and sanitary (Sazelin & Ridzwan, 2011).

In Malaysia, *halal* food and drink or product are regularly discussed over mass media such as television, radio and printed media such as newspaper as well as via Internet. Kartina (2005) states that, people nowadays have become more concern and careful about what they eat as they become more worry with the cleanliness and health. This is because cleanliness and health are critical in the value of *halal* consumption. *halal* is a global symbol for quality assurance and lifestyle and not only focus on religious issues.

#### 5.4 Suggestion for Future Study

The concept of *halal* food has given the idea for future researcher either in humanities or pure sciences. For the future research also can conduct research on consumer attitudes in order to recognize the consumer's need and wants, consumer's awareness, buying trends and also sensitivity regarding *halal* issues. Besides that, future research also can make comparative study because it is eligible to be guide since this study is valuable for marketers and producer in the *halal* industry. Moreover, as for the consumers, further study on their perception will provide insights to improves the current standard for country with *halal* standard and also establish or introduce new standard into existence for country without *halal* standard.

In addition, for the future research, the number of population and sample size should be expanded so that better capture in data analysis. To ensure that have better response from the respondents, the researcher must spend a time to explain the whole questions for the respondent to avoid from the respondent make a mistakes when answer the questions. This would ensure the responds to be more reflective of the situation.

The researcher also feels that the next researcher should do more specific in categorized the samples such as their levels of education so that we would be able to understand more between *halal*, food safety, quality and behaviour.

## 5.5 Recommendations

This study was conducted to determine the trustworthiness (*Halal Status*), food safety and personal societal behaviour influenced the MS1500:2009 at cafeteria operator in UUM Sintok. Essentially, based on the results, it was found that several aspects need further research and clarifications. To achieve the *halal* standard made by the government the researcher has suggested several recommendations. Some recommendations are as follows:

### a) For the university

The university should establish their own *halal* standard that all food producer inside UUM should follow the standard. This is because most of the students and staff are Muslim. To become a good Muslim, it is compulsory to eat *halal* and *toyyib* food. So that, the university itself should focus more in production, preparing, handling and storage follow by the *Syariah* compliances.

### b) For the cafeteria operator

For the cafeteria operator should make sure that all workers must attend the food safety training. This is important to the workers because they have basic knowledge about avoiding foodborne illness, control the food temperature, personal hygiene, avoiding cross infection, cleaning and sanitizing and also preparing or serving food safely. Besides that, cafeteria operator should establish personal hygiene rule and posted inside cafeteria. This is because personal hygiene is one of the *halal* standard for make sure that the workers concern about their personal hygiene. Cafeteria operator must continuously supervise their workers to make sure them follow the rules in *halal* and food safety.

**c) For inspectors or environmental health practitioners**

Inspectors or environmental health practitioners should conduct periodic inspection to the cafeteria to make sure that the cafeteria always follow the rules and *halal* standard. Besides that, the inspectors or environmental health practitioners should design and implement *halal* and food safety awareness creation program. By conducting the *halal* and food safety program, the cafeteria operator and their workers can apply a preventive approach to minimize food hazards. Furthermore, *halal* and food safety awareness program help the cafeteria operator minimize the possibility of food poisoning and improves consumer's confidence to eat at their cafeteria.

**d) For local mass media**

The local mass media should disseminate basic information about *halal* food and food safety information frequently to the food producer and customer as a reminder for them to make sure them understand and follow the *halal* standard.

**e) For the customers**

For the customers they should give feed back to the food producers or workers if they found somethings such as small insects, hair or food are not fresh to eat. if the food producer does not take any action, the customer should make a complain to the university.

## **5.6 Research Implications**

The finding and analysis of this research will provides precision on what factor drives in MS1500:2009 at cafeteria inside UUM. It is confirmed that food safety and

trustworthiness (*Halal* Status) influenced the MS1500:2009 at cafeteria in UUM Sintok. The cafeteria operator has needs to look during processing food to make sure that it follows the *halal* standard.

Moreover, cafeteria operator should emphasize in *halal* status when buying the raw materials. The cafeteria operator must make sure that the raw materials have the *halal* logo and also health to eat. Most of the cafeteria customer are student and as a student they need a healthy food. This is because a healthy mind comes from a healthy food. Islam also encourage all Muslim to eat a healthy food.

Besides that, cafeteria operator should improve the facilities such as provides proper toilets. Cafeteria operator also need to make sure that all of their workers attend the food safety training. So that, their workers have basic knowledge about the personal hygiene, safety and cleanliness during processing the food.

## **5.7 Limitation of the Study**

There are several limitations faced in completing this research. Firstly, getting the information during data collection process. The limitations encountered are lack of cooperation from the respondents, budget limitation, and time constraints have led to a small sample size, which might influence the results. Therefore, the findings of the study have to be taken with caution due to these limitations.

## 5.8 Conclusion

This study was conducted to examine the factors that influence the MS1500:2009 in cafeteria at UUM. The specific objectives are (i) to explore the factors of MS1500:2009, (ii) to investigate the relationship between factors and MS1500:2009 and (iii) to identify the most influence factors of MS1500:2009 in cafeteria operator in UUM.

This study is a quantitative study and cross-sectional technique were executed. A survey conducted and use structured questionnaire as a tool to measure variables in this study such as MS1500:2009, trustworthiness (*Halal Status*), food safety and personal societal behaviour. Data was collected at cafeteria at UUM Sintok where 103 (n) respondents participated in this study.

The results of the study were obtained through analysis such as descriptive analysis, reliability analysis and inferential analysis (Pearson Correlation and Multi Regression) method. From the correlation and regression analysis performed, it was found that all three variables; trustworthiness (*Halal Status*), food safety, and personal societal behaviour has significant and positive relationship on MS1500:2009 at the cafeteria. Food safety was found to be the most significant among the three variables that influence on MS1500:2009. Besides, the Multiple Regression significant results help three hypotheses in this study accepted.

As an overall conclusion, this study has successfully achieved the three research objectives namely; to explore the factors of MS1500:2009, to investigate the relationship between factors and MS1500:2009 and to identify the most influence

factors of MS1500:2009 in cafeteria operator in UUM and answer the three research questions such as what are determinant factors of MS1500:2009, how to investigate the relationship between factors and MS1500:2009 and what is the most influenced factors of MS1500:2009 in cafeteria operator at UUM.





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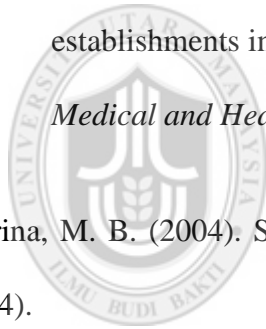
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