

Awareness and Practices of Food Hygiene Regulation among Food Vendors in Negeri Sembilan

Fatin Natazlyana Nor Azizi¹ & Mohamed Ismail Pakir Mohamed^{1,*}

¹Department of Production and Operations Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat, Johor, 86400, MALAYSIA

*Corresponding Author

DOI: <https://doi.org/10.30880/rmtb.2021.02.02.023>

Received 30 September 2021; Accepted 01 November 2021; Available online 01 December 2021

Abstract: A previous study reported that Negeri Sembilan, one of the states in Malaysia, has shown an increasing trend in implementing food hygiene practices among food industry stakeholders. However, even though there is an increasing trend in implementing food hygiene practices, foodborne illness and food poisoning cases still occur in Negeri Sembilan. Therefore, there is a need to evaluate FHR awareness and practice among the local food vendors in Negeri Sembilan. A quantitative approach using survey methods via face-to-face interview method and an online platform (Google Form) was conducted which involved a total of 205 respondents. Personal hygiene, Equipment hygiene, and Premise hygiene was used to measure the food hygiene practices and the relationship with the level of awareness on Food Hygiene Regulation among respondents. Correlation and descriptive data analysis using Statistical Package for Social Science (SPSS) revealed that the level of awareness on Food Hygiene Regulation among the respondents is high. It is also discovered that there is a significant relationship between food hygiene practices and the level of awareness on Food Hygiene Regulation of the respondents. So, it can be concluded that the level of awareness on food hygiene practices such as Personal hygiene, Equipment hygiene, and Premise hygiene is important to achieve food safety and the fulfillment of FHR in Negeri Sembilan. Therefore, to increase food safety standards, more work needs to be done to increase the level of awareness among food vendors in Negeri Sembilan.

Keywords: Awareness, Food hygiene practices, Food hygiene regulation, Food vendor

1. Introduction

Food hygiene or food safety is one of the most important issues that everybody ought to be aware of in their daily lives to maintain a healthy body. Food vendors play a significant role in food safety, as they can be the one who transmits microbes that contributed to food poisoning. Food vendors need to monitor food hygiene during the processing, preparation and serving of the food to ensure that customers receive healthy and safe food. Besides that, food hygiene should also be practiced at home, at the workplace, and elsewhere to ensure the food is safe to consume and healthy against the risk of food poisoning or foodborne disease. Foodborne diseases caused by food contamination can occur at any time, especially during processing, which can include bacteria, chemical agents, parasites, toxins, and viruses (Uçar, Yilmaz, & Çakiroglu, 2016).

Other than that, dining out is now a phenomenon among people due to urbanization, evolving lifestyles, growing wealth, and also a rising number of working mothers. About 64 percent of people buy at least once a meal outside each day and only 36 percent eat at home (Tan, 2014). It shows that the number of people dining out is very high rather than cooking or eating at home without paying much attention to hygiene and food safety. Outside's food supplied by food vendors usually pays more attention to satisfying customer tastes and customer requirements than the hygiene of the food they served (Suwaidi *et al.*, 2015). These indicate that food vendors did not prioritize hygiene during food processing. Therefore, Malaysia has implemented a regulation known as the Food Hygiene Regulations (FHR) 2009 to ensure that customers receive more quality and healthy food, especially from outside foods.

1.1 Research Background

Food hygiene is part of the component of food safety. Food safety essentially means that food consumption is secure and free from the contamination of bacteria, including microbial, parasitic, or chemical contamination (Rezaei, 2018). Therefore, food sellers that serve food outside or under a roof must adhere to strict hygiene standards. (Calopez *et al.*, 2017). Food hygiene practices are created to ensure food operators serving safe and healthy food for customers. One of the most important aspects of improving food safety is to be disciplined in applying hygiene practices when handling, processing, and storing food.

Malaysia is known as the food heaven. That is why the majority of people like dining out such as in restaurants or buying ready-to-eat food instead of cooking at home. However, the lack of understanding in FHR by food vendors could lead to food poisoning or foodborne illness. This is why the issue of food safety has become a priority due to the change of Malaysians lifestyle. One of the states in Malaysia, Negeri Sembilan has shown an increasing trend in implementing food hygiene practices among food industry stakeholders. This was reported in a study conducted in Kuala Pilah, Negeri Sembilan that evaluates the knowledge, attitude, and practices (KAP) of food handlers who work in restaurants (Mutalib *et al.*, 2012).

Even though there is an increasing trend in implementing food hygiene practices foodborne illness and food poisoning cases still occur in Negeri Sembilan. In the year 2018, serious food poisoning cases did occur where 52 students came down with food poisoning at Tahfiz Darul Ulum in Senawang, Negeri Sembilan after consuming food donated by a member of the public and there was also food poisoning incident happened to worshippers who consumed food served at an India temple in Nilai, Negeri Sembilan (Singh, 2018; Zolkepli, Lai, & Aravinthan, 2018). Furthermore, Negeri Sembilan Health Department has ordered 27 food vendors to close the premises within two weeks for cleaning after getting the report of poor hygiene practices at the workplaces (Bernama, 2017).

Therefore, FHR is vital among food vendors to control food safety in Malaysia. Food vendors should also be aware of and implement hygiene practices such as Personal hygiene, Equipment hygiene, and Premises hygiene in their workplace. Awareness of food hygiene can be translated into practices

for food vendors to ensure that food safety procedures can be implemented or adopted by everyone in their lives. Therefore, this study revealed the level of awareness of FHR among local food vendors and the relationship between the level of awareness and food hygiene practices among local food vendors in Negeri Sembilan.

1.2 Problem Statement

Poor hygiene practices among vendors might cause food poisoning incidents to the consumers who buy outside food or bought them from different resources and premises. WHO reports that in 18% globally most of the children under the age of 5 in developed countries would dead from diarrhea diseases (Abdul-Mutalib *et al.*, 2012; Bryce *et al.*, 2005). According to the previous study, the incidence rate of food illness is 46.1 cases per 100,000 population was registered in 2011 and increased by 2.8 cases per 100,000 in 2010 (Siau *et al.*, 2015).

Besides, some of the food vendors facing the issues of having a lack of accessing to clean drinking water, waste removal, and perhaps an unclean working environment. These can expose those foods to harmful elements that can cause consumers to foodborne diseases and waterborne such as hepatitis, diarrhea, and also food poisoning (Calopez *et al.*, 2017). According to the previous study, more than 50 percent of total cases reported improper food handling which is the main cause of food poisoning among food handlers (Mahmood *et al.*, 2018). Other than that, poor personal hygiene and poor sanitary practices can also be the causes of food poisoning incidence (Bas, *et al.*, 2006). One significant incident happened in Kuala Lumpur where 137 kindergarten teachers reported suffering from food poisoning cases after dining at a training center's dining hall (Bernama, 2020). Another incident where a famous among tourists in George Town "nasi kandar" restaurant was ordered to close several days after a rat and cockroach were found inside the premises (Dermawan, 2020). The close order to was due to poor cleanliness of the premises and also, they give the premises owner a chance to rectify the situation.

Table 1 shows the Ministry of Health (MOH) Malaysia reports of food poisoning cases that have been recorded within two years with 17,480 cases in 2016 and 13,686 cases in 2017. These are shown that the cases of food poisoning in Malaysia are decreasing from 2016 to 2017. However, if foodborne disease cases are still present and continue to occur in this country, the amount of food poisoning could increase instantly. Thus, further exploration about the level of awareness of FHR is required because of the high possibility that the food poisoning cases will increase again in the coming years.

Table 1: Food poisoning cases in Malaysia (Ministry of Health Malaysia, 2018)

Communicable Disease	Number		Rate	
	2016	2017	2016	2017
Food Poisoning	17,480	13,686	55.21	42.25
Incidence rate per 100,000 populations				

Most Malaysians enjoy buying food from food vendors. At the same time, they may be unaware of the significant health risk that could result in food poisoning (Bernama, 2018). The risk may come from the vendors who produce unhygienic or unhealthy food at their premises. As a result, evaluating FHR awareness and practice is crucial to give relevant data that could reduce such exposure to the public.

1.3 Research Questions

- (i) What is the level of awareness on Food Hygiene Regulation among food vendors in Negeri Sembilan?
- (ii) What is the relationship between the level of awareness and food hygiene practices among food vendors in Negeri Sembilan?

1.4 Research Objective

- (i) To identify the level of awareness on Food Hygiene Regulation among food vendors in Negeri Sembilan.
- (ii) To identify the relationship between the level of awareness and food hygiene practices among food vendors in Negeri Sembilan.

1.5 Scope of the Study

This research investigated the level of awareness on Food Hygiene Regulation (FHR) and determine the relationship between the level of awareness and food hygiene practices among food vendors in Negeri Sembilan. A total of 205 respondents who worked at food vendors in Negeri Sembilan would be participating in this study. In this study, the independent variable was food hygiene practices which consist of Personal hygiene, Equipment hygiene, and Premise hygiene meanwhile the dependent variable was the level of awareness on Food Hygiene Regulation (FHR).

1.6 Significance of the Study

The researcher hopes the findings of this study would give the authority understanding regarding the level of awareness on Food Hygiene Regulation among food vendors in Negeri Sembilan. It will also reveal the relationship between the level of awareness and food hygiene practices among food vendors in Negeri Sembilan. With this understanding, the local authority can develop a relevant program to create awareness and also monitor the practice of Food Hygiene Regulation among food vendors in Negeri Sembilan. Such understanding and action by local authorities hopefully help to minimize if not prevent, the incidence of food poisoning and foodborne disease due to unhygienic practices during food processing.

2. Literature Review

2.1 Awareness of Food Hygiene

Awareness can be defined as the “knowledge that something exists” which is also known as “understanding of a situation” (Cambridge Dictionary, 2020). In this context, awareness, knowledge, and understanding are crucial in the study of food hygiene. Turkistanli and Sevgili (2018) did a study on the awareness and knowledge regarding food hygiene among maritime students. Mat Zin (2011) also studied the level of knowledge, barriers, and practices of hygienic and safe food handling among food vendors and operators. According to the previous research related to food safety, the Knowledge, Attitude and Practices Model (KAP Model) was adopted to study the hygiene practices in food handling (Almansour *et al.*, 2016; Sani & Siow, 2014; Bas *et al.*, 2006). Therefore, elements in the KAP model are commonly used to conducted investigations on a certain specific topic to identify what is known (Knowledge), how is thought (Attitude), and what is done (Practice) related to human behavior (Siau *et al.*, 2015).

2.2 Hygiene Practices

Hygiene practices are the most crucial factors in having a safe and healthy life. According to Stacey (2009), Muslims have particularly high moral standards on food cleanliness since Islam prioritize great significance to sanitation, purification, spirituality, and physical. It also indicates that such attitudes

toward hygiene practices are essential and compulsory to every Muslim even they did not have much knowledge in FHR. The hygiene practices can be a part of personal cleanliness, health for the family, sanitation for the residence, and hygiene at places of worship which will create a safe environment that will lead to a healthy and comfortable life (Stacey, 2009).

According to the previous study, hygiene practices among food vendors have become increasingly important in every level of the food chain from production to food preparation and serving (Suwaidi *et al.*, 2015). Besides, ensuring that food vendors implement the FHR and safety practices at their premises is one of the challenges that has existed for a long time (Dajaan *et al.*, 2018). Therefore, the need for food vendors to adhere a proper food hygiene practice is very crucial for every food they produce. Besides, an article in The Star Online newspaper reported that unsatisfactory cleanliness of raw materials, dirty walls and floors, open trash bin, dirty clothes workers, and unhygienic food handling could easily lead to food contamination (Sharma & Thevadass, 2015). And it is unforgivable if such poor food hygiene practices among food vendors occur in schools which will put school children at risk (Dajaan *et al.*, 2018). Therefore, the individual who is the food vendor should be educated to observe basic food hygiene practices.

(a) Personal Hygiene

Personal hygiene is how people seem to care for their own body by practices proper handwashing, wearing a proper attire or complete uniform, getting typhoid injections, and not smoking when handling food. Besides that, personal hygiene is also vital for any food establishment because human beings are the largest contamination sources of food (Monney *et al.* 2014). According to the World Health Organization, proper handwashing is one of the most important things that might prevent people from getting sick. World Health Organization went further to provides guides on how to wash your hand properly. The guide shows eight steps of proper handwashing that will take at least 20 to 30 seconds. Such practice is known as one of the most successful and natural ways of avoiding bacteria, germs, and diarrhea diseases from spreading (World Health Organization, 2017). Bacteria also will come in many ways by touching parts of the body, such as your nose, mouth, hair, or clothing (Calopez *et al.*, 2017). Therefore, personal hygiene practice among food vendors is important to prevent food contamination and food poisoning. Therefore, this study looked into the relationship between Personal Hygiene and the level of awareness on Food Hygiene Regulation among food vendors, in this case in Negeri Sembilan.

H1: Personal hygiene has a significant relationship with the level of awareness on food hygiene regulation among food vendors in Negeri Sembilan.

(b) Equipment Hygiene

Foodservice equipment is a basic necessity in the kitchen. Food vendors need to provide further emphasis on the aspect of cleanliness and custody to equipment hygiene practice. According to Rahman and Saad (2011), lack of such practice can cause the microorganisms to be attached to the surface of foodservice equipment and contaminate the food. However, all material has to be clean and wash appropriately with detergent, and put at a convenient location to avoid contamination., the bacteria also can spread quickly if food vendors use the same equipment between handling raw materials and cooked food (Aarnisalo *et al.*, 2006; Rahman & Saad, 2011). Aarnisalo *et al.* (2006), studied the level of awareness on food hygiene and uncovered aspects that could harm equipment hygiene. The study also revealed to achieve equipment hygiene, food vendors must separate equipment, areas for food preparation, and areas for storing raw materials and cooked food (Aarnisalo *et al.*, 2006). Therefore, equipment hygiene is important to prevent food contamination and food poisoning. Therefore, this study looked into the relationship between equipment hygiene and the level of awareness on food hygiene regulation among food vendors, in this case in Negeri Sembilan.

H2: Equipment hygiene has a significant relationship with the level of awareness on food hygiene regulation among food vendors in Negeri Sembilan.

(c) Premise Hygiene

According to Ababio and Adi (2012), food premise environments must fulfill the safety requirement for food preparation. According to the Laws of Malaysia, premises would be any building or tent or other structure, tent or different structure located on adjacent land used in connection with it (Laws of Malaysia, 2012). Therefore, the safety requirement must cover all these premises as mention in the law including all enclosed and protected areas where food preparation activities are involved (Ababio & Adi, 2012). Besides, good premise hygiene factors must include a good source of drinking water, availability of toilet facilities, good waste management pest, and insect control. Siau *et al.*, (2015) studied the level of food premises hygiene among food courts in Putrajaya the majority of the food courts in Putrajaya, which is 63.5%, had a consistently moderate level of cleanliness, 27.4% of the food courts were in the clean level situation and 9.1% were not in the clean condition. The study also revealed that even though the level of food premises hygiene is mainly at a moderate level, the food handlers' knowledge, attitudes and practices on food safety are high. This indicates that more work needs to be done in achieving high-level premises hygiene in Malaysia. Ababio and Adi (2012) indicates that a high-frequency premise cleaning schedule, proper cutting surfaces color-coding, and well-managed waste and pest control program could significantly contribute to a positive outcome in a high level of cleanliness of a food premises. Therefore, this study looked into the relationship of premises hygiene and the level of awareness on Food Hygiene Regulation among food vendors, again in this case in Negeri Sembilan.

H3: Premises hygiene has a significant relationship with the level of awareness on food hygiene regulation among food vendors in Negeri Sembilan

2.3 Conceptual Framework and Hypothesis

This research studied the relationship between food hygiene practices and the level of awareness on Food Hygiene Regulation (FHR) among food vendors in Negeri Sembilan. Conceptual frameworks are designed to make research finding more useful and meaningful, relevant in the research field to the theoretical constructs, and to ensure generalizability. Therefore, viewing above a conceptual model is developed to represent the relationship between food hygiene practices and the level of awareness of Food Hygiene Regulation (FHR) to achieve the objective of the study.

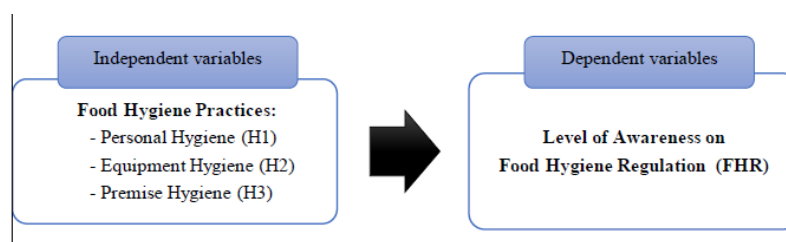


Figure 1: Conceptual framework

Following are the hypothesis proposed for this study:

- H1: Personal Hygiene has a significant relationship with the level of awareness on Food Hygiene Regulation among food vendors in Negeri Sembilan
- H2: Equipment hygiene has a significant relationship with the level of awareness on Food Hygiene Regulation among food vendors in Negeri Sembilan
- H3: Premises hygiene has a significant relationship with the level of awareness on Food Hygiene Regulation among food vendors in Negeri Sembilan.

3. Research Methodology

3.1 Research Design

In carrying out this study, a quantitative research method was deployed for data collection among the respondent. Quantitative research is a systematic study of phenomena through the collection of mathematical, statistical, and computational techniques (Håkansson, 2013). A questionnaire was developed as the research instrument to measure the level of awareness on FHR and the relationship between the level of awareness and food hygiene practices among food vendors in Negeri Sembilan. The instrument was used to survey by using face-to-face method (by hand) with the respondents of food vendor's workers because most of them might have a poor data connection or lack of using an online platform (Google Form). By using this method, the researcher also could easily understand the respondent's response and can also observe whether the survey was answered in a proper manner or otherwise. In this study, food hygiene practices were the independent variable while the level of awareness on FHR was the dependent variable. There are three dimensions in food hygiene practices, such as Personal hygiene, Equipment hygiene, and Premise hygiene. Therefore, quantitative is the most suitable research method that the researcher used for this study. This research was conducted among food vendors in Negeri Sembilan.

3.2 Research Process

The following are the research process to identify the level of awareness on Food Hygiene Regulation (FHR) and the relationship between awareness and practices of food hygiene among food vendors in Negeri Sembilan. Initially, the researcher identified the issues regarding food hygiene. According to Whitworth (2018), the main problem in food hygiene regulation is experiencing the side symptoms of food poisoning. The researcher finds out more relevant sources and information that are related to food hygiene problems or cases. Next, the researcher identified each of the criteria regarding this study by reviewing the literature. Then, the researcher selected the research design that is most suitable for this study. Quantitative research is the selected method to analyze the data from the respondent through the questionnaire by face-to-face (by hand) and online platform (Google Form). After that, the researcher analyses the data by using SPSS version 20. The data were analyzed based on their specific. Last but not least, the researcher recorded all the results and concluded them in the study report.

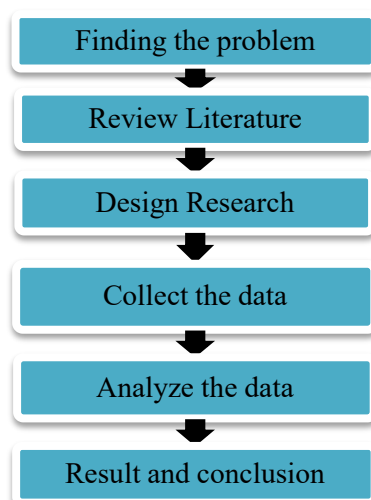


Figure 2: Flowchart of the research process

3.3 Data Collection

The data for the research was collected with self-administered questions. The questionnaires were distributed to food vendors to identify the level of awareness of FHR. The questionnaire was given to the respondent through face-to-face method (by hand) and an online platform (Google Form). This research focused on food vendors in Negeri Sembilan as the respondents.

3.4 Population & Sampling Techniques

Banerjee and Chaudhury (2010) defined population as the group of individuals with such a specialized set of characteristics, while a sample is a part of the population, On the other hand, the population can also be defined as the totality of object elements or individuals with specific common characteristics described in the sampling criteria of the researcher (Patel, Bhatt & Kim, 2019). The food vendors are the target population for this study while the focus area is in Negeri Sembilan. Negeri Sembilan is the area chosen from this study because there are no studies on the level of awareness of FHR among food vendors in this state. Moreover, Negeri Sembilan is also among one the countries that have a high rate of food hygiene issues, hence these situations have brought the researcher interest to carry out this study.

Barreiro and Albandoz (2001), defined samples as properly selected from a population to achieve the appropriate general conclusions. Therefore, a random sampling technique was chosen to ensure that every person in the population had an equal chance of being selected. There are four types of random sampling methods such as random samples, systematic sampling, stratified sampling, and cluster sampling. In this study, the researcher used a stratified sampling method to reach the research objective. Stratified sampling is a sampling technique that involves splitting a population into smaller subgroups identified as strata (Hayes, 2020). Therefore, this method is appropriate for this study to ensure the sample is a good depiction of the theoretical population of this study.

According to the Ministry of Health Malaysia (2020) reports, the total number population of registered premises in Negeri Sembilan is about 437 food vendors in 2018 (Ministry of Health Malaysia, 2020a). Viewing above, bases on the sampling table by Krejcie and Morgan (1970), the sample size needed for this study is 205 respondents.

3.5 Pilot Test

A pilot study was conducted before the actual study takes place to test the reliability of the questionnaire. Birkett & Day (1994) recommended the internal pilot study sample size as 20 respondents. Therefore, the pilot study for this research was conducted at Negeri Sembilan and 20 persons who worked at various food vendors were selected. The result shows the research instruments were applicable. The reliability of the questionnaire has been calculated by using SPSS software version 20. Cronbach's alpha coefficient is used to measure the reliability of the items in the questionnaire. The pilot test helped the researcher to improve the quality of the questionnaire. The value of Cronbach's alpha must be greater than 0.7. The higher the value of Cronbach's alpha indicates that the item in the questionnaire is reliable to the study. For this study, the value of Cronbach's Alpha for Personal hygiene is 0.554 but after deleted one of the items, the value increases to 0.809 which is considered a good level of reliability. Besides that, the value of Cronbach's Alpha for Equipment hygiene is also changed from 0.618 to 0.769 after deleted two items from the questionnaires, which is considered as the acceptable level of reliability. These three items were eliminated from both variables because the value of Cronbach's Alpha is lower than 0.50 which means it is considered an unacceptable question and needs to be deleted. Meanwhile, the other item, Premise hygiene (0.864) and Level of awareness of FHR (0.881) is considered as good levels of reliability for this study.

3.6 Construct Measurement

In this research, the survey questionnaires are divided into 3 sections which are Section 1, Section 2, and Section 3. Section 1 is the respondent's general information with the use of nominal and ratio measurement. There are six (6) items in Section 1 which included gender, age, race, experiences as food vendors, attended Food Handling Training, and received Food Handling Certificates. Section 2 is about food hygiene practices with 18 items overall are composed to determine the relationship between the level of awareness on FHR among food vendors in Negeri Sembilan. There are three (3) dimensions which are Personal hygiene, Equipment hygiene, and Premise hygiene. Finally, Section 3 consists of 10 items of the level of awareness on FH among food vendors in Negeri Sembilan. Both Section 2 and Section 3 have used scale as the level of measurement to measure the independent variables in Section 2 and the dependent variables in Section 3.

Table 2: Measurement used for each Variable

	Variable	Measurement	Number of Items	Scale of Measurement
General Information	Gender	Nominal	6	-
	Age Group	Nominal		-
	Races	Ratio		-
	Working experience as food vendors	Nominal		-
	Attended Food Handling Training	Nominal		-
	Received Food Handling Certificates	Nominal		-
Independent Variable	Personal Hygiene	Interval	18	5-point Likert Scale
	Equipment Hygiene	Interval		5-point Likert Scale
	Premise Hygiene	Interval		5-point Likert Scale
Dependent Variable	Level of Awareness	Interval	10	5-point Likert Scale

The 5 points Likert scales are Strongly Disagree (1), Disagree (2), Not Sure (3), Agree (4), and Strongly Agree (5).

3.7 Data Analysis

For the data analysis, Statistical Package for Social Science (SPSS) was used to analyze the data. Descriptive analysis was tabulated and analyzed with the frequency, mean, and standard deviation. Other than that, Spearman's correlation was used to analyze the relationship and test the hypothesis of the study.

4. Results and Discussion

4.1 Demographic Characteristic of the Respondents

There are 131 from 205 respondents are female respondents which occupied 63.9% of the respondents while there is 74 male respondent which 36.1%. This indicates that most of the food vendor's workers in Negeri Sembilan were female. Besides, all of the respondents have been categorized into five age groups. The majority of the respondents are from the age group between 20 to 29 years old which 76 respondents (37.1%), 52 respondents (25.4%) between 30 to 39 years old, 33 respondents (16.1%) aged 20 years old and below, and 30 respondents (14.6%) aged between 40 to 49 years old. Moreover, there are 14 respondents (6.8%) who fall in the range of 50 years old and above. The findings show that the largest group of respondents (37.1%) falls in the range of 50 years old and above. Other than that, Table A (Appendix) reveals that the majority of respondents are Malay people which comprised 191 respondents (93.2%), and then it was followed by Chinese which is 7 respondents (3.4%). There are only 2.0% of respondents are made up of Indians and 3 respondents from other races

(1.5%). This result indicates that the majority of the food vendor's workers in Negeri Sembilan were Malay. Furthermore, it also illustrates the working experience as food vendors of respondents in this study. A total number of 57 respondents have less than one years' experience (27.8%), 76 respondents have experienced between 1 to 5 years (37.1%), and 32 respondents have experienced between 6 to 10 years (15.6%) as food vendors. Besides, 40 respondents have experienced more than 10 years (19.5%) as food vendors in Negeri Sembilan. Thus, it is evident that the majority of the food vendor's workers are having experience in the early stage which, is 1 to 5 years. Regarding the Food Handling Training, most of the food vendors workers has attended the training which is 151 respondents (73.7%) and only 54 respondents (26.3%) did not attend the training. There are only 152 respondents (74.1%) who have received Food Handling Certificates and 53 respondents (25.9%) did not receive the Food Handling Certificates. The result of this study is listed in Table A in the Appendix.

4.2 Reliability Test for Real Study

The reliability test is considered with whether a scale indicates that it is free from random error. Furthermore, the reliability of a measure demonstrates the degree to which it is without bias in maintaining accurate measurement over time and different items in the tools. The reliability of the scale instrument used in this study was tested through Cronbach's alpha coefficient test. In this study, Cronbach's alpha coefficient for each variable was used to measure the internal consistency of the scales adopted in the survey. Table 3 shows that all the variables are good and acceptable for reliability analysis.

Table 3: The summary of reliability test

Variables	Cronbach's Alpha
Personal Hygiene	0.836
Equipment Hygiene	0.710
Premise Hygiene	0.826
Level Awareness	0.779

Personal hygiene consists of six (6) items that have received a Cronbach's alpha value of 0.836 which is good reliability for this study. Besides that, Equipment hygiene and Premise hygiene that contains five (5) and seven (7) items, have achieved Cronbach's alpha values of 0.710 and 0.826 which is good and acceptable reliability in this analysis. Lastly, the dependent variable is Level awareness on FHR with 10 items that have received Cronbach's alpha value 0.779 and also the acceptable reliability for this research study. Therefore, the highest Cronbach's alpha is Personal hygiene with the value of 0.836 meanwhile, Equipment hygiene has the lowest with the value of 0.710 of Cronbach's alpha.

4.3 Normality Test

A normality test was used to determine whether the collecting data are in the normal distribution or otherwise. The normality test also is a crucial test to achieve the objective of the research studies. There are two results of the normality test, which are the Kolmogorov-Smirnov and Shapiro-Wilk test. The Kolmogorov-Smirnov test is a more appropriate method for this study which a large sample size (> 50 samples). Table 4 shows the normality test of Kolmogorov-Smirnov which is the selected data in this study.

Based on the data above, the significant value of independent variables which are Personal hygiene, Equipment hygiene, Premise hygiene is $p = 0.00$ while the dependent variable (level of awareness) demonstrates the same result. This means that all the variable is not normal because the significant value is less than 0.05. It will accept as normal when the significant value is exceeding or more than 0.05.

Table 4: Result of normality test for all variables

	Kolmogorov-Smirnov ^a		
	Statistic	df	Significant
Personal Hygiene	0.223	205	0.00
Equipment Hygiene	0.193	205	0.00
Premise Hygiene	0.161	205	0.00
Level Awareness	0.095	205	0.00

4.4 Descriptive Analysis of Level of Awareness on FHR

There are 205 respondents of food vendors workers were involved in this research study. Therefore, 205 sets of questionnaires were distributed through face-to-face interviews and an online platform (Google Form). The response rate of the questionnaire is a hundred percent.

The first objective of this study objective is to identify the level of awareness on FHR among food vendors in Negeri Sembilan is. According to Table B (Appendix), there are 4 respondents (2.0%) who achieved a moderate level of awareness on Food Hygiene Regulation (FHR). Meanwhile, 201 respondents (98.0%) received an excellent result which is a high level of awareness in Food Hygiene Regulation (FHR). Furthermore, no respondent scores a low level of awareness on Food Hygiene Regulation (FHR). In conclusion, the majority of food vendors (98.0%) in Negeri Sembilan have a mean score between 3.68 until 5.00 while a minority of respondents (2.0%) scored a mean score between 2.34 until 3.67.

Table C (Appendix) showed the descriptive analysis of Level awareness on FHR among food vendors in Negeri Sembilan. Overall, the level of awareness is high among food vendors in Negeri Sembilan with an average mean of 4.51 and a standard deviation is 0.62. The mean value for Level awareness (LA) is between 4.2195 until 4.6439 meanwhile, the value of standard deviation is between 0.49299 and 0.86637. The highest mean is respondents claim that they are aware food vendors who have cut on their hands should not touch foods without gloves (mean = 4.6439). Besides that, the lowest mean is food vendors claim that they aware preparation of food in advance can contribute to food poisoning with 4.2195 value of the mean. Other than that, the highest value of standard deviation was LA3 with 0.86637 while the lowest is LA6 (standard deviation = 0.49299).

4.5 Spearman's Correlation Analysis

In the second objective of the study, Spearman's correlation is employed to identify the relationship between awareness and practices of food hygiene (Personal hygiene, Equipment hygiene, Premise hygiene) among food vendors in Negeri Sembilan. Correlation coefficients can provide a numerical overview of the direction and strength of the linear relationship between food hygiene practices and the level of awareness. The finding of the correlation between food hygiene practices and the level of awareness of FHR are summarized and presented in Table D while the summary of Spearman's Correlation has tabulated in Table E. Both of these tables are listed in the Appendix.

Based on Table F, the correlation coefficient value between personal hygiene and the level of awareness on FHR among food vendors in Negeri Sembilan is stated as 0.296. This indicates that the correlation between them is a weak positive correlation. Therefore, hypothesis 1 was accepted because the significant value of the study was less than 0.05. The result of this study is also listed in the Appendix.

The finding shows the correlation coefficient between equipment hygiene and the level of awareness on FHR among food vendors in Negeri Sembilan is stated as 0.361. This indicates that the

correlation between them is a weak positive correlation. Therefore, hypothesis 2 was accepted because the significant value of the study was less than 0.05.

The finding also demonstrates that there is a positive significant relationship between premises hygiene and the level of awareness on FHR among food vendors in Negeri Sembilan ($r=0.497$, $p<0.05$). The correlation between them is a weak positive correlation. Therefore, hypothesis 3 was accepted because the significant value of the study was less than 0.05. Overall, all of the food hygiene practices showed that there is a significant relationship with the level of awareness on FHR among food vendors in Negeri Sembilan ($p<0.05$). Hence, hypotheses 1, 2, and 3 are accepted.

4.6 Summary of the Results

The result and finding from this research study which for objective 1 and objective 2 (Hypothesis 1, Hypothesis 2, and Hypothesis 3) has been listed in Table 5.

Table 5: Summary of findings based on research objectives

Research Objectives	Findings
<p>Objective 1: To identify the level of awareness on Food Hygiene Regulation (FHR) among food vendors in Negeri Sembilan.</p>	<p>Overall, the level of awareness is high among food vendors in Negeri Sembilan with an average mean score of 4.51 and a standard deviation is 0.62.</p>
<p>Objective 2: To identify the relationship between awareness and practices of food hygiene among food vendors in Negeri Sembilan.</p>	<p>There are three hypotheses in this research study:</p> <p>1) Hypothesis 1 is accepted ($r=0.296$, $p<0.05$) and indicates that personal hygiene is significantly correlated with the level of awareness on FHR.</p> <p>2) Hypothesis 2 is accepted ($r=0.361$, $p<0.05$) and indicates that equipment hygiene is significantly correlated with the level of awareness on FHR.</p> <p>3) Hypothesis 3 is accepted ($r=0.497$, $p<0.05$) and indicates that premise hygiene is significantly correlated with the level of awareness on FHR.</p>

4.7 Discussion

(a) Objective 1

The first objective of this study was to identify the level of awareness on FHR among food vendors in Negeri Sembilan. The findings of the study revealed that food vendor workers in Negeri Sembilan have a high level of awareness of FHR which indicates that the majority of the food vendors have attended Food Handling Training and have received Food Handling Certificates. Food vendors should be expected to attend food safety training and educate themselves about food safety legislation (Alamo-Tonelada *et al.*, 2018). Therefore, substantial food safety training should also be given to all food service employees before continuous food safety training starts to operate (Bas *et al.*, 2006).

(b) Objective 2

The second objective of this study was to identify the relationship between the level of awareness and practices of food hygiene among food vendors in Negeri Sembilan. The findings of the current study revealed that all three dimensions of food hygiene practices were associated with level awareness. Moreover, the result was the same as the research conducted by the previous study (Dajaan *et al.*, 2018; Yusuf & Chege, 2019). All the dimensions of food hygiene practices were significant with the level of awareness on FHR. According to the previous studies, there is a significant relationship between food vendor awareness on food hygiene practice (Nyamagwa, 2012; Omemu & Aderoju, 2008; Yusuf & Chege, 2019). As stated and supported by the previous researchers, it is clearly shown that personal hygiene, equipment hygiene, and premise hygiene were the variables associated with the level of awareness on FHR. Therefore, further researchers need to be carried to explore these problems in the future.

5. Conclusion

The purpose of this research is to determine whether the food hygiene practices (Personal hygiene, Equipment hygiene, Premise hygiene) are significant to influence the level of awareness on Food Hygiene Regulation. For the 1st objective, it is revealed that the level of awareness among food vendor workers in Negeri Sembilan is high. For the 2nd objective, the findings of the analysis revealed that all of the three independent variables which are Personal hygiene, Equipment hygiene, and Premise hygiene have a significant positive relationship with the level of awareness on FHR. Meaning that the food vendors in Negeri Sembilan are all aware that are Personal hygiene, Equipment hygiene, and Premise hygiene level of awareness are important to the implementation of FHR. Among all of the independent variables, Premise hygiene is considered to have the strongest relationship with the level of awareness on FHR, meaning they believed that a high level of awareness on Premise hygiene is the most important when the authority wants to implement FHR in Negeri Sembilan. So, it can be concluded that the level of awareness on food hygiene practices, such as Personal hygiene, Equipment hygiene, and Premise hygiene, are important to achieve food safety and the fulfillment of FHR in Negeri Sembilan. Therefore, to increase food safety standards, more work needs to be done to increase the level of awareness among food vendors in Negeri Sembilan.

References

- Aarnisalo, K., Tallavaara, K., Wirtanen, G., Maijala, R., & Raaska, L. (2006). The hygienic working practices of maintenance personnel and equipment hygiene in the Finnish food industry. *Food Control*, 17(12), 1001–1011. <https://doi.org/10.1016/j.foodcont.2005.07.006>
- Ababio, P. F., & Adi, D. D. (2012). Evaluating Food Hygiene Awareness and Practices of Food Handlers in the Kumasi Metropolis. *Internet Journal of Food Safety*, 14(January 2012), 35–43.
- Alamo-Tonelada, C., Silaran, F. Y., & Cristina Bildan, M. A. (2018). Sanitary Conditions Of Food Vending Sites And Food Handling Practices Of Street Food Vendors: Implication For Food Hygiene And Safety. *International Journal of Education and Research*, 6(3). Retrieved from www.ijern.com
- Almansour, M., Sami, W., Al-Rashedy, O. S., Alsaab, R. S., Alfayez, A. S., & Almarri, N. R. (2016). Knowledge, attitude, and practice (KAP) of food hygiene among schools students' in Majmaah city, Saudi Arabia. *Journal of the Pakistan Medical Association*, 66(4), 442–446.
- Banerjee, A., & Chaudhury, S. (2010). Statistics without tears: Populations and samples. *Industrial Psychiatry Journal*, 19(1), 60. <https://doi.org/10.4103/0972-6748.77642>
- Barreiro, P. L., & Albandoz, J. P. (2001). MaMaEuSch Population and sample. Sampling techniques. Retrieved from <http://www.mathematik.uni-kl.de/~mamaeusch>
- Bas, M., Ersun, A. S., & Kivanc, G. (2006). The evaluation of food hygiene knowledge, attitudes, and practices of food handlers in food businesses in Turkey. *Food Control*, 17, 317–322. <https://doi.org/10.1016/j.foodcont.2004.11.006>

- Bernama. (2017). 27 unhygienic eateries in Seremban get clean-up orders. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/nation/2017/11/305233/27-unhygienic-eateries-seremban-get-clean-order>
- Bernama. (2018). Proactive action is needed to prevent food poisoning. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/nation/2018/11/427174/proactive-action-needed-prevent-food-poisoning>
- Bernama. (2020). 137 teachers down with food poisoning at Cheras training center | *New Straits Times* | Malaysia General Business Sports and Lifestyle News. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/nation/2020/01/553716/137-teachers-down-food-poisoning-cheras-training-centre>
- Bryce, J., Boschi-Pinto, C., Shibuya, K. & Black, R.E. (WHO Child Health Epidemiology Reference Group). WHO Estimates of The Causes of Death in Children, *The Lancet*, Volume 365, Issue 9465, P1147-1152, March 26, 2005 doi: 10.1016/S0140-6736(05)71877-8.
Retrieved from [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(05\)71877-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)71877-8/fulltext)
- Bhattacharya, D. (2006). *Research methodology* (2nd ed.). New Delhi: Excel Books.
- Calopez, C. G., Herbalega, C. M. L., Canonicato, C. J., España, M. F., & Francisco, A. J. M. (2017). Food Safety Awareness and Practices of Street Food Vendors in Iloilo City. *International Conference on Studies in Arts*. <https://doi.org/10.17758/uruae.uh0117430>
- Dajaan, D. S., Addo, H. O., Luke, O., Eugenia, A., Amshawu, A., & Kwasi, N. A. (2018). Food Hygiene Awareness and Environmental Practices among Food Vendors in Basic Schools at Kintampo Township, Ghana. *Food and Public Health*, 8(1), 13–20. <https://doi.org/10.5923/j.fph.20180801.03>
- Dermawan, A. (2020). Famous nasi kandar restaurant slapped with compounds, three eateries ordered to close | *New Straits Times* | Malaysia General Business Sports and Lifestyle News. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/nation/2020/02/567340/famous-nasi-kandar-restaurant-slapped-compounds-three-eateries-ordered>
- Dictionary, C. (2020). Awareness | meaning in the Cambridge English Dictionary. Retrieved June 27, 2020, from Cambridge Dictionary website: <https://dictionary.cambridge.org/dictionary/english/awareness>
- Håkansson, A. (2013). Portal of Research Methods and Methodologies for Research Projects and Degree Projects. In *Computer Engineering, and Applied Computing Worldcomp*. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-136960>
- Hayes, A. (2020). Stratified Random Sampling Definition. Retrieved December 19, 2020, from Investopedia website: https://www.investopedia.com/terms/stratified_random_sampling.asp
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Mahmood, K., Khalid, J., Kamilah, H., Ali, A. J., Mohammad, L., & Ariffin, F. (2018). An empirical study of food safety, food handling, and food poisoning awareness among foreign students in Penang, Malaysia. *International Journal on Advanced Science, Engineering and Information Technology*, 8(1), 150–156. <https://doi.org/10.18517/ijaset.8.1.3731>
- Malaysia, L. O. (2012). Laws Of Malaysia Online Version Of Updated Text Of Reprint. Retrieved from <http://www.agc.gov.my/agcportal/uploads/files/Publications/LOM/EN/Act 281 - Food Act 1983.pdf>
- Mat Zin, M. (2011). Tahap Pengetahuan Dan Halangan Yang Dihadapi Oleh Pengendali Makanan Dalam Mengendalikan Makanan Secara Bersih Dan Selamat. Retrieved from http://www.fp.utm.my/epusatsumber/pdfail/ptkgdhfwp2/p_2011_10059_499d22c5a8cd4827a0d0c322d5ea47f3.pdf
- Ministry of Health Malaysia. (2018). Department of Statistics Malaysia Official Portal. Retrieved June 5, 2020, from Malaysia's Official Statistics website: https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=152&bul_id=NU5hZTRkOSs0RVZwRytTRE5zSitLUT09&menu_id=U3VPMldoYUxzVzFaYmNkWXZteGduZz09
- Ministry of Health Malaysia. (2020). Food Safety and Quality Division. Retrieved May 30, 2020, from Ministry of Health Malaysia website: <http://fsq.moh.gov.my/v6/xs/page.php?id=441000094>
- Monney, I., Agyei, D., Ewoenam, B. S., Priscilla, C., & Nyaw, S. (2014). Food hygiene and Safety Practices among Street Food Vendors : An Assessment of Compliance, Institutional and Legislative Framework in Ghana. *Food and Public Health*, 4(6), 306–315. <https://doi.org/10.5923/j.fph.20140406.08>
- Mutalib, N. A. A., Rashid, M. F. A., Mustafa, S., Nordin, S. A., Hamat, R. A., & Osman, M. (2012). Knowledge, attitude, and practices regarding food hygiene and sanitation of food handlers in Kuala Pilah, Malaysia. *Food Control*. <https://doi.org/10.1016/j.foodcont.2012.04.001>
- Nyamagwa, G. O. (2012). Hygienic Practices of the Street Food Vendors and Microbiological Quality and Safety of Selected Cooked Street Foods Around. <https://doi.org/10.13140/RG.2.1.4254.0246>
- Omemu, A. M., & Aderoju, S. T. (2008). Food safety knowledge and practices of street food vendors in the city of Abeokuta, Nigeria. *Food Control*, 19(4), 396–402. <https://doi.org/10.1016/j.foodcont.2007.04.021>
- Patel, A. M., Bhatt, H. V., & Kim, S. J. (2019). BASIC Essentials: A Comprehensive Review for the Anesthesiology BASIC Exam. Retrieved from

- [https://books.google.com.my/books?id=rOlwDwAAQBAJ&pg=PA34&lpg=PA34&dq=population+a+complete+set+of+elements+\(persons+or+objects\)+that+possess+some+common+characteristic+defined+by+the+e+sampling+criteria+established+by+the+researcher&source=bl&ots=HD_1fpsLg](https://books.google.com.my/books?id=rOlwDwAAQBAJ&pg=PA34&lpg=PA34&dq=population+a+complete+set+of+elements+(persons+or+objects)+that+possess+some+common+characteristic+defined+by+the+e+sampling+criteria+established+by+the+researcher&source=bl&ots=HD_1fpsLg)
- Rahman, M. A. A., & Saad, A. (2011). Pengetahuan dan Pengamalan Sanitasi Makanan di Dewan Makan Asrama Sekolah Menengah di Bandar Alor Gajah. *Journal of Technical*, 2, 2231–7376. Retrieved from http://eprints.utm.my/id/eprint/13423/1/JTVEE-2011-2-010_NEW.pdf
- Rezaei, A. (2018, June 1). Food safety: The farmer's first health paradigm. *One Health*, Vol. 5, pp. 69–73. <https://doi.org/10.1016/j.onehlt.2018.04.001>
- Sani, N. A., & Siow, O. N. (2014). Knowledge, attitudes, and practices of food handlers on food safety in foodservice operations at the Universiti Kebangsaan Malaysia. *Food Control*, 37(1), 210–217. <https://doi.org/10.1016/j.foodcont.2013.09.036>
- Sharma, M. S., & Thevadass, L. (2015). Health dept launches blitz on unhygienic premises in Penang. *The Star*. Retrieved from <https://www.thestar.com.my/news/nation/2015/02/27/15-cant-sell-nasi-kandar-health-dept-launches-blitz-on-unhygienic-premises-in-penang>
- Siau, M. F. A., Son, R., Mohhiddin, O., Toh, P. S., & Chai, L. . (2015). Food court hygiene assessment and food safety knowledge, attitudes, and practices of food handlers in Putrajaya. *International Food Research Journal*, 22(5), 1843–1854.
- Singh, S. (2018). 52 religious school students in Seremban down with food poisoning. *The Star*. Retrieved from <https://www.thestar.com.my/news/nation/2018/10/19/52-religious-school-students-in-seremban-down-with-food-poisoning/>
- Stacey, A. (2009). Personal Hygiene (All parts) - The Religion of Islam. Retrieved from <https://www.islamreligion.com/articles/2149/viewall/personal-hygiene/>
- Suwaidi, A. A. H. ., Faisal, A. W., Sawaf, E. E., & Wasfy, A. (2015). Hygienic Practices Among Food Handlers in Dubai. *International Journal of Preventive Medicine Research*, 1(3), 101–108.
- Tan, C. (2014). More Malaysians eat out nowadays but are we eating enough healthy food? | *The Star*. *The Star*. Retrieved from <https://www.thestar.com.my/news/nation/2014/08/03/food-always-on-our-minds-more-malaysians-eat-out-nowadays-but-are-we-eating-enough-healthy-food/>
- Tan, P. S. (2017). Relationship Between Mental Health and Academic Performance among Accounting Students in Universiti Teknologi Malaysia. *Journal of Education*. Retrieved from <http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf>
- Türkistanli, T. T., & Sevgili, C. (2018). Food hygiene knowledge and awareness among undergraduate maritime students. *International Maritime Health*, 69(4), 270–277. <https://doi.org/10.5603/IMH.2018.0043>
- Uçar, A., Yilmaz, M. V., & Çakiroglu, F. P. (2016). Food Safety – Problems and Solutions. In *Significance, Prevention and Control of Food Related Diseases*. <https://doi.org/10.5772/63176>
- Whitworth, J. (2018). Food poisoning sickens 60 and kills two in Malaysia; Salmonella confirmed | *Food Safety News*. *Food Safety News*. Retrieved from <https://www.foodsafetynews.com/2018/10/food-poisoning-sickens-60-and-kills-two-in-malaysia-salmonella-confirmed/>
- World Health Organization. (2017). WHO | Save Lives: Clean Your Hands. Retrieved May 22, 2020, from WHO website: <https://www.who.int/gpsc/5may/en/>
- Yusuf, T. ., & Chege, P. . (2019). Awareness of Food Hygiene Practices and Practices among Street Food Vendors in Nasarawa State, Nigeria. *International Journal of Health Sciences & Research (Www.Ijhsr.Org)*, 9(7), 227. Retrieved from https://www.ijhsr.org/IJHSR_Vol.9_Issue.7_July2019/35.pdf
- Zolkepli, F., Lai, A., & Aravinthan, R. (2018). 12 succumb to food poisoning at India temple. *The Star*. Retrieved from <https://www.thestar.com.my/news/nation/2018/12/18/12-succumb-to-food-poisoning-at-india-temple>

Appendix

Table A: General Information of the Respondents (N = 205)

Gender		
	Frequency (f)	Percentage (%)
Male	74	36.1
Female	131	63.9
Age		
20 years and below	33	16.1
20-29	76	37.1
30-39	52	25.4
40-49	30	14.6
50 years and above	14	6.8
Race		
Malay	191	93.2
Chinese	7	3.4
Indian	4	2.0
Others	3	1.5
Working experience as food vendors		
Less than 1 years	57	27.8
1-5 years	76	37.1
6-10 years	32	15.6
More than 10 years	40	19.5
Have you ever attended Food Handling Training?		
Yes	151	73.7
No	54	26.3
I have received a Food Handling Certificates		
Yes	152	74.1
No	53	25.9
Total	205	100.0

Table B: The Level of Awareness on FHR

Level	Mean Score	Frequency	Percentage (%)
High	3.68 – 5.00	201	98.0
Moderate	2.34 – 3.67	4	2.0
Low	1.00 – 2.33	0	0.0
Total		205	100.0

Table C: Descriptive analysis of the level awareness on FHR

		Mean	Standard Deviation	Interpretation
LA1	Preparation of food in advance can contribute to food poisoning	4.2195	0.86637	High
LA2	The use of proper clothing can maintain a high degree of personal cleanliness	4.6146	0.50757	High
LA3	Food handlers can be a source of foodborne outbreaks	4.3463	0.78718	High
LA4	Food vendors who have cut on their hands should not touch foods without gloves	4.6439	0.59822	High
LA5	Knives cutting board should be well clean to prevent cross-contamination	4.5610	0.51681	High
LA6	Improper storage of foods may cause health hazard to consumers	4.5902	0.49299	High
LA7	Clean food preparation can prevent diarrhoea	4.5902	0.62458	High
LA8	Washing hands before handling food can reduce the risk of contamination	4.6293	0.50402	High

LA9	Reheating cooked foods can contribute to food contamination	4.3512	0.72326	High
LA10	Improper cleaning device increases the risk of chemical contamination of food	4.5463	0.57228	High
Average mean score		4.51	0.62	High

Table D: Spearman's Correlation analysis for food hygiene and Level of awareness (N=205)

Variables	Personal Hygiene	Equipment Hygiene	Premise Hygiene	Level Awareness
Personal Hygiene	1.000			
Equipment Hygiene	0.609**	1.000		
Premise Hygiene	0.406**	0.769**	1.000	
Level Awareness	0.296**	0.361**	0.497**	1.000

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

Table E: Summary of Spearman's Correlation analysis for food hygiene practices and Level awareness

Hypothesis	Spearman's Correlation	P-value	Results
H1: Personal hygiene has a significant relationship with the level of awareness on Food Hygiene Regulation (FHR) among food vendors in Negeri Sembilan.	0.296	0.000	Significant
H2: Equipment hygiene has a significant relationship with the level of awareness on Food Hygiene Regulation (FHR) among food vendors in Negeri Sembilan.	0.361	0.000	Significant
H3: Premises hygiene has a significant relationship with the level of awareness on Food Hygiene Regulation (FHR) among food vendors in Negeri Sembilan.	0.497	0.000	Significant