

Food Safety: An Assessment of Knowledge, Attitude and Practice Toward Fast-food Operators in Malaysia

Abdullah Bin Muhamed Yusoff*, Muhammad Abid Bin Mat Lin, Noor Aima Binti Suri
Noor, Noorbasirah Binti Yaacob & Pavithrah A/P Shanmuganathan

Faculty of Hospitality, Tourism and Wellness, Universiti Malaysia Kelantan
Corresponding email: abdullah.my@umk.edu.my

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ABSTRACT

Food safety is an important matter that all fast food operators must emphasize in fast-food restaurants. This is due to prevent the occurrence of foodborne illnesses. Food safety is linked to proper food handling, preparation, and storage. This limits the chances of people becoming ill due to foodborne illness. It is possible that these fast-food restaurant branches did not practice proper food handling. This study aims to study the extent of fast-food operators' knowledge, attitude and practice. This study further focused on McDonald's fast food operators in Malaysia. 181 respondents participated in this study through who completed the questionnaire given via Google Form. The results showed that the food safety attitude corresponds to knowledge and practice. On the other side, it also showed that the fast food operators, despite having the knowledge, often fail to practice. Thus, food safety knowledge must be practised properly.

Keywords: Food Safety, Fast Food, Knowledge, Attitude, Practice

INTRODUCTION

Fast food is now a trendy food among Malaysians of all ages as fast-food restaurants are more convenient than cooking at home for the general population, especially in urban regions, where most people are busy working. It is one of the leading Quick Service Restaurant (QSR) brands according to YouGov APAC Dining & QSR of the Year in Malaysia, which was up to 85% (Ramadila, 2021). Even globally, fast food is one of the fastest-growing food categories, providing a convenient, economical, and easily accessible alternative to home-cooked meals, according to Goyal and Singh (2007).

Most of them prefer fast food as it requires a shorter preparation period, which can save them time, especially if they are working. Data Monitor (2005) explains that fast food is food and drink that is quickly consumed in the field or elsewhere, as it is very convenient and inexpensive for busy lifestyles. Goyal and Singh (2007) proclaim fast food to be among the

staple foods emerging in the world. This is due to the fast way of preparation and good customer service alongside the convenience of services such as takeout facilities. Furthermore, one of the main reasons customers choose fast food over home-cooked food is the increasingly busy modern lifestyle, especially for families who need to manage children and go to work (Atkins and Bowler, 2001).

Along with the expansion of the fast food industry, food safety is one of the essential things that must be emphasized by all food operators of these fast food restaurants because hygiene is a priority for the public to prevent the occurrence of foodborne infections. Food safety and hygiene can be defined as the various situations and practices that keep food safe while also preventing infection and foodborne illnesses. Safety is the basis for fast food service due to the massive number of daily meals and their infectious potential when the conceptual hygiene requirements are unmet.

In Malaysia, food-borne illness is one of the most serious public health concerns. Food handlers are important in ensuring strict adherence to the concept of food protection at various levels, especially in the stages of food manufacturing and storage. According to Alom et al. (2019), foodborne illnesses and foodborne outbreaks often originate in restaurants. Various studies on food safety knowledge, attitudes, and practices among restaurant owners have yielded mixed results. Some studies have identified gaps in food safety knowledge and practice among restaurant owners, while others have shown a good understanding and appropriate compliance with food safety requirements. The World Health Organization (2000), describes the importance of understanding the mutual influence of the dominant beliefs about food safety knowledge and practices of food handlers to reduce food-borne outbreaks. In addition, attitude is important in food safety to prevent food contamination trends. Aziz & Dahan (2013) demonstrates the correlation between positive attitudes of food handlers, and ongoing education to maintain safe food handling practices.

As fast-food restaurant has also become the main choice of Malaysians, food safety, namely knowledge, attitude, and practice, plays a very important role in the fast-food restaurant industry. Therefore, this study aims to assess the knowledge, attitude, and practices of food handlers in fast food restaurants. The target is fast-food operators at McDonald's in Malaysia. There were three objectives of this research:

1. To examine the knowledge of food safety among fast-food operators in Malaysia.
2. To examine the attitude toward food safety among fast-food operators in Malaysia.
3. To examine the practice of food safety among fast-food operators in Malaysia.

Significance of the Study

Body of knowledge

This is valuable as evidence and adds to the body of knowledge. The researcher handles the study to analyze the knowledge, practice, and attitude among the fast food operators. This research focuses on these operators' knowledge, practice, and attitude on food safety. Furthermore, this research also gives vast knowledge about the importance of food safety for operators and consumers when they refer to and access this journal.

Community

This report will give beneficial information to fast-food consumers. Fast-food operators are

the medium between the consumer and fast food, making their role in food safety significant. This study report will help to know the knowledge, attitude, and practice of food safety among fast-food operators. Exposure to this information will help consumers to make smart choices in their food intake.

Fast-food operators

This report will show the extent to which fast-food operators have gained their knowledge, attitude, and practice regarding food safety. When customers are more aware of food safety, it has an impact on their purchasing decisions, so fast-food operators will work hard to improve, and this research will give information on betterment of the fast-food operators' knowledge, attitude and practice, which will help to avoid foodborne illness in the fast-food industry. Fast-food restaurants' owners and managers can use these methods to make sure this growing industry expands without costing anyone's health and safety.

LITERATURE REVIEW

Definition of Food Safety and its Importance

Food safety is defined as the circumstances and measures that must be in place during the manufacturing, processing, storage, distribution, and preparation of food to guarantee that it is safe, sound, wholesome, and fit for human consumption. Food safety is an essential component of sustainable development and improves public health, food security, and environmental protection. According to Mohsen et al. (2020), The World Health Organization has identified food safety as a global public health priority for controlling and preventing foodborne infections.

Food safety is an important part of food production, as mishandled food can lead to food contamination and foodborne illness in society. Outbreaks of foodborne diseases continue to be of concern and have significant consequences for individuals, the food sector and the economy (Egan et al., 2007). For example, it has been reported that online customers of Puding Buih in Terengganu got sick after eating and that food poisoning at a boarding school was caused by meals prepared by the school canteen (Abd Razak, Ying Tuan & Teck Chai, 2022).

Knowledge

Knowledge is an understanding or information about a subject gained by experience or research and possessed by a person or a group of individuals, according to the Cambridge Advanced Learner's Dictionary & Thesaurus. Knowledge is when people or organizations relate information in their minds with its application to reality in a particular context (Dixon, 2000). Besides that, it is also the accumulation of everything an organization knows and uses in the carrying out its purpose (Patwary & Rashid, 2016).

In the hospitality industry, food safety is one of the essential aspects needed to the knowledge of people producing food for people. Food handlers with insufficient food safety awareness transmit foodborne germs to the general population during food processing (DeBess et al., 2009). The government and private organizations run various programs because they recognize the importance of educating food handlers about food safety and hygiene, as well as personal hygiene and cleanliness in food establishments. For example, to improve workers' basic

knowledge of food safety, training programs in food handling are provided under the Food Act 1983 and the Food Regulations 1985.

Attitude

Preparing food in large-scale cooking can increase the chances of contamination of the food provided. The attitude of maintaining cleanliness in many aspects, especially personal hygiene refers to bad behavior and can lead to good hygiene practices and can be emulated (Centre for Disease Control, 2016). Hygiene and safety practices among foodservice providers must be provided with complete descriptive information under established standards (Patwary, 2022).

Some have debated the definitions for skills. Azevedo et al. (2012) regarded skills as effects or overall performance standards, or probably as a person's abilities, attitudes, and individual traits. The Organization for Economic Cooperation and Development (2018) defines core competencies as personal attributes or underlining traits mixed with technical or expert competencies to allow the transport of a job.

According to McCabe-Sellers and Beattie (2004), food will remain safe as long as important attitudes and behaviours in food handling are observed. As a result, all food handlers and managers who serve food and beverages must receive training in hygiene, and employees must be given the necessary support. For fast-food restaurant operators, a track record that can lead them to adopt more hygienic attitudes and behaviours remains important.

Practice

Practice is practising a behaviour over and over to help learn and ultimately master a skill. In addition, practising is usually also part of a profession that can improve skills. The practice consists of the rules and principles to which the actors adhere and based on which they are responsible for their actions (Patwary et al., 2020). Food Safety and Standards Authority of India (2017) stated that to guarantee that food given to the customer is safe to eat, everyone who handles food should maintain appropriate personal and food hygiene practices at all stages of food handling. This is crucial to avoid contaminating the food served.

According to Hirschmann (2021), in 2019, approximately 166,000 food poisoning cases were reported in Malaysia. According to Yun et al. (2017), bacteria like *Escherichia coli* (*E. coli*) and *Staphylococcus aureus* are frequently discovered in the hands of food workers. Through cross-contamination, food handlers' hands can be used to transfer hazardous bacteria (Patwary, 2022). Food poisoning symptoms such as vomiting, diarrhea, and stozulmach usually resolve within a few days but can also lead to death. For example, in Terengganu, Malaysia, there is an issue in preparing Foam Pudding that causes food poisoning involving 99 victims from 20 different families and costing one life.

Abdullah Sani & Siow (2014) state the effectiveness of the training in food safety through support organizations and adequate resources will strengthen food handling and safety practices in the workplace. Aside from adequate information and strict enforcement, food handlers' practices can also help to reduce outbreaks of foodborne diseases.

Research Hypothesis

Based on the article that has been reviewed, the hypothesis of this study can be summarized in the following way:

H1 There is a significant relationship between food safety knowledge towards fast-food operators in Malaysia.

H2 There is a significant relationship between food safety on the attitude towards fast-food operators in Malaysia.

H3 There is a significant relationship between food safety and the fast-food operators' practices in Malaysia.

Research Framework

Referring to Adom et al. (2018), the theoretical and conceptual framework clarifies the purpose of a study and anchors it to theoretical concepts. The research model used for this study examines the knowledge, attitude, and practice of food safety among fast-food operators in Malaysia.

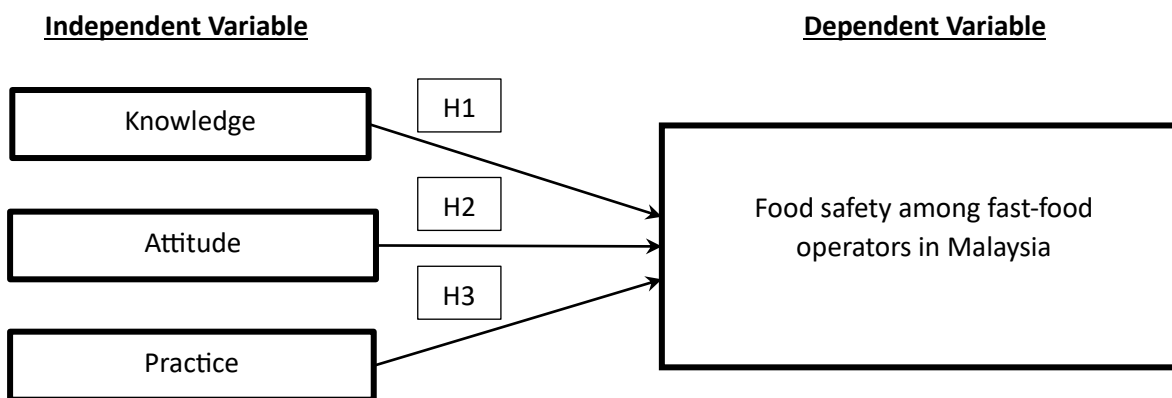


Figure 1. Research Model

METHODOLOGY

Research Design

This study used the quantitative method where self-administered questionnaires were distributed to 181 respondent which is food handlers in fast-food restaurant. This study was conducted is to find out of knowledge, attitude and practice toward fast-food operators in Malaysia. This will be a cross-sectional and descriptive study. It will take place in an unpretentious setting. A quantitative method will be used, which entails the process of collecting, analyzing, interpreting, and writing the study's findings. This questionnaire used the format of multiple choices (yes or no) and 5-point Likert scales of agreement. The researcher divided questionnaire into 5 sections which are Section A, B, C, D and E. For Section A, the questionnaire requested for the demographic profile of respondents, age, gender, race, status, education level, income level, prior working and training experience to study the background of respondent, the demographic profile of respondents, age, gender, race, status, education level, income level, prior working and training experience to study the respondent's

background. The questions for sections B, C, D, and E elaborated more on the dependent (food safety) and independent variables (knowledge, attitude and practice).

Data Collection

This study chose to distribute the questionnaires using the Google form application for a food handler in a fast-food restaurant. The link to the Google form was distributed to an internet alternative via WhatsApp application to further spread the questionnaire. It was very convenient to minimize cost and save time and was significantly applicable during this pandemic outbreak.

Sampling

The sampling frame for this study is non-probability sampling which is a convenient sampling method. The respondent is the voluntary response for this study. The McDonald's employees or fast-food operators will be 15,000 in 2021 (McDonald's Malaysia to add 200 new outlets within five years, 2021). In this research, the researcher will select 375 McDonald fast food operators as the sample size of the survey Krejcie and Morgan (1970). However, the response rate was 48% as the number of respondents that answered this research questionnaire was 181. In research by Ali et al. (2020), a 100% response rate is rarely obtained because researchers rely on respondents' willingness to engage in the survey.

Data Analysis

Four types of data analysis were used in this study: frequency analysis, descriptive analysis, reliability test (Cronbach's Alpha), and Pearson correlation analysis. The data obtained was analysed by using SPSS version 25.0.

FINDINGS

Table 1. Frequency Analysis

Characteristics	Frequency	Percentage (%)
Nationality		
Malaysian	177	97.8
Non-Malaysian	4	2.2
Gender		
Male	107	59.1
Female	74	40.9
Age		
19-29	143	79
30-49	38	21
50-69	0	0
70 and above	0	0
Monthly income		
500-999	61	33.7
1000-1499	64	35.4
1500-1999	25	13.8

2000-3999	26	14.4
4000 and above	5	2.8
Education level		
No formal education	6	3.3
Primary/secondary school	38	21
Diploma or equivalent, including degree.	137	75.5
Working experience		
Yes	159	87.8
No	22	12.2
Attend training		
Yes	116	64.1
No	65	35.9

Table 4 shows the frequency analysis for the demographic profile of the respondents. According to the analysis for nationality. Mostly the respondents are Malaysians (97.8%). For gender, the result shows that 59.1% are female, with 107 respondents, while 40.9% are male, with 74 respondents. As for age, based on the result, the age of respondents between 19 until 29 is the highest with 143 or 79% of respondents. The second highest is the age between 30 and 49, with 38 or 21% of respondents. There are no respondents aged 50 and above.

Regarding income, the highest numbers of respondents, which is 64 respondents (35.4%) have an income between RM1,000 to RM1,499. It is followed by income from RM500 until RM999 respondents where 61 of the respondents (33.7%) fall in this income range and for income from RM1500 until RM1999 have 25 respondents (13.8%). Other than that, for the income of RM2,000 to RM3,999, 26 of the respondents (14.4%). Finally, for income RM4000 and above, the number of respondents was 5 (2.8%).

For educational level, the highest number of respondents are from diploma or equivalent, including degrees category, which shows 137 or 75.7% of respondents. Secondly, the primary or secondary school category recorded 38 (21%) respondents, followed by no formal education, which recorded 6 (3.3%) of respondents.

According to the study, the number of respondents that have working experience beforehand (159) is higher than the number of respondents that did not have working experience before (22). This indicates 87.8% of respondents are experienced food operators, and 22 or 12.2% are non-experienced food operators, finally, for respondents that have attended the training. The result recorded that 65 or 35.9% of respondents have not attended training while 116 or 64.1% have attended the training.

Table 2. Descriptive Analysis

Variable	Items	Mean Score	Standard Deviation
Knowledge	Improper storage of food may cause health hazard to the customers	4.5912	.72167
	The importance to know the temperature of the refrigerator/freezer to reduce the risk of food spoilage	4.5359	.57260
	The use of cap, masks, protective gloves and adequate clothing can reduce the risk of food contamination	4.5967	.58480
	Wearing gloves while handling food to reduce the risk of transmitting infection to the consumers	4.4751	.68774
	Washing hands before handling food to reduce the risk of contamination	4.6022	.58385
	Preparation of food in advance is more likely to	4.0608	1.00646

Attitude	contribute to food poisoning		
	Reheating food is more likely to contribute to food contamination	4.0055	.99162
	An incorrect application of cleaning and sanitization procedures for equipment (refrigerator) increase the risk of foodborne disease to the consumers	4.3425	.73319
	Cross contamination is the main factor contributed to the food poisoning	4.1878	.82870
	The safe temperature of cooked food is >141°F or <40°F (>63°C or <-5°C)	4.0055	.87240
	Typhim-VI Vaccination can prevent from typhoid infection	4.2265	.88101
	Food should not be touched with wounded hand	4.6464	.61178
	Defrosted food should not be refrozen	3.9061	1.09393
	Separate kitchen utensils must be used for to prepare raw and cooked food	4.1878	.95340
	Raw food and cooked food not necessarily to be separated	2.4254	1.52797
	The same towel can be used to clean many places	2.2486	1.55244
	Jewelry (including wedding ring) and a watch can be worn while handling food	2.2818	1.47691
	We should not rub our hands on face, hair, etc. while working	4.4033	1.05293
	We should not smoke while working	4.5414	.95725
	Apron can be used as a towel to clean hand	2.3702	1.50960
	We must cover our mouth and nose when coughing sneezing	4.5304	.79261
	Working with dirty hands should be avoided	4.7238	.50656
	Hand should be washed before start working	4.7624	.46419
Practice	I touch food that does not wrapped up with bare hand	2.0442	1.40958
	I refreeze defrosted foods	2.6961	1.35869
	I use separate kitchen utensils to prepare raw and cooked food	3.8619	1.25066
	I do not separate the storage of raw food with cooked food	2.0994	1.34621
	I use the same towel to clean many places	2.0608	1.33818
	I use jewellery and watch while working	2.0331	1.32874
	I rub my hand on my face, hair, etc. while working	1.7680	1.22078
	I smoke while working	1.6464	1.22332
	I clean the work area before start work	4.1436	1.20707
	I use my apron as a towel to clean my hand	2.1823	1.33538
	I chew gum while working	1.8619	1.27703
	I wash my hand before start work	4.4917	.99230
	I use a tissue when I am coughing or sneezing	4.2486	1.11009
	I use jewellery and watch while working	2.0442	1.40958
	I rub my hand on my face, hair, etc. while working	2.6961	1.35869
	I smoke while working	3.8619	1.25066
Food Safety	I follow food safety rules because it is my responsibility to do so	4.3260	.60446
	Food safety is a high priority to me	4.0608	.48495
	My supervisor generally gives appropriate instruction on safe food handling	3.6298	.65064
	Facilities are of adequate quality to follow safe food handling practices	3.6630	.65167
	It is important to measure the temperature of foods when cooking	3.6851	.56298
	I keep my work area clean because I do not like clutter and to ensure it is safe	3.8619	.44439

The highest mean scores for knowledge 4.6022 which mean most of the respondents agree that washing hands before handling food reduces the risk of contamination. Most of the respondents agree that washing hands before handling food reduces the risk of contamination. According to Mohd. Firdaus Siau et al. (2015), food safety knowledge of the food handlers was poor in terms of the safe temperature of cooked food which is evident when only 52.2% of the respondent answered correctly. The highest mean score for attitude is 4.7624 and the respondents agree with the statement that hands should be washed before start working. A study conducted by A. C. Iwu et al (2017) on Knowledge, Attitude and Practices of Food Hygiene among Food Vendors in Owerri, Imo State, Nigeria shows 93% of the respondents believed in hand washing. Refers to research conducting by Nur Afiah et al. (2018), the result of practices about food safety among street hawkers' vendors in Jeli, Kelantan show the same. The highest mean in the practice about food safety are 4.4917, where the respondents agree on "I wash my hand before start work". Food safety procedures had the highest average of 4.3883, with respondents agreeing that "I wash my hands before commencing work". For food safety, it shows that most respondents agree with the statement, "I follow food safety rules because it is my responsibility to do so" where it has the highest number of mean with 4.3260. The lowest mean in food safety is 36.298, where the respondents disagree that "my supervisor generally gives appropriate instruction on safe food handling".

Table 3. The Reliability Analysis

Variable	Number of Items	Cronbach's Alpha
Knowledge	11	0.882
Attitude	12	0.727
Practice	13	0.887
Food safety	6	0.609

The goal of reliability analysis was to assess the consistency of the data collected. A few procedures were followed to ensure that the data collected was reliable and that the instrument could be measured. Based on Cronbach's Alpha rule of thumb, the questions for knowledge and practice are good and reliable. For attitude, the questions are fair and acceptable. Meanwhile, for food safety, the reliability of the questions was poor.

Table 4. Pearson Correlation Analysis

Hypothesis	P-Value			Result (Supported/Not Supported)
	Knowledge	Attitude	Practice	
H ₁ : There is a significant relationship between food safety knowledge towards the fast-food operators in Malaysia.	1	.454**	.098	Supported
H ₂ : There is a significant relationship between food safety on the attitude towards the fast-food operators in Malaysia.	.454**	1	.483**	Supported
H ₃ : There is a significant relationship between food safety on the practices towards the fast-food operators in Malaysia.	.098	.483**	1	Not Supported
**. Correlation is significant at the 0.01 level (2-tailed).				

Based on the Pearson Correlation Analysis for H₁ and H₃, it is shown that knowledge and practice do not have a significant relationship. This is related to the situation in which food handlers attend food handling courses or have knowledge of food safety but do not apply or practice it in their workplace. The assumption that information received by people is translated into practices and behaviour is a major flaw in theoretical training based on KAP. The techniques used to train food handlers should be reviewed by reducing the use of theoretical concepts and lectures, which is a common feature (Medeiros et al., 2011). Trainers and managers should instil in food handlers motivation and self-efficacy (Al-Shabib et al., 2016). These characteristics will ensure that all good practices are followed even without supervision. As for H₂, it is supported by both knowledge and practice. Because attitudes include ideas, behaviours, values, and dispositions, thus it is linked to their knowledge and real hygienic practices (Kwol et al., 2020). To generate positive attitudes toward hygiene and sanitary food handling, some motivational mechanism is required (Ko, 2013).

DISCUSSIONS AND CONCLUSION

The knowledge, attitude, and practises of fast-food operators have been comprehensively investigated in this study. As stated in the opening chapter of this study, discussions are aimed at answering questions and addressing study's opening chapter, discussions aim to answer questions and address hypotheses. Based on the findings, the current study will make recommendations to fast-food operators and future researchers.

To address the problem identified in this study, which is that food handlers do not follow

proper food handling procedures despite having obtained knowledge, the authorities should implement effective procedures such as periodic inspections to ensure that all food handlers adhere to all food safety regulations. Aside from that, food handlers' positive attitudes are critical in transferring safety knowledge to successful hygienic practises. As a result, specialised training aimed at influencing handlers' attitudes is necessary and critical in ensuring that handlers not only know about food safety but also know how to put that information into effect (Zanin et al., 2017).

The recommendation is a suggestion for the next researcher to continue this research. In the future, the researchers should perform more research in rural locations, such as fast-food businesses outside of the city, because this may provide a different perspective or conclusions to the study. Apart from that, researchers can witness how food handlers practice and handle the food to gain the true result, rather than just analysing the questionnaire findings or asking them to answer the question to assure data authenticity.

CONCLUSION

In conclusion, this study has been accomplished to understand the extent of knowledge, attitude and practice of fast-food operators in Malaysia. Three independent variables, namely knowledge, attitude and practice, have been chosen to examine their relationships with the dependent variable, which is food safety among fast-food operators in Malaysia. A total of 181 respondents participated from all states in Malaysia to examine their knowledge, attitude and practice regarding food safety. Overall, the relationship between the variables is analysed, and recommendation to further improve the situation and future study is given.

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