

Determinants of Food Safety Attributes among Food Truck Operators in Malaysia

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Abstract

Purpose: Food safety has become a huge concern among health authorities in Malaysia due to its serious implications. Providing food safety is a huge challenge for all food businesses including the food truck business. Many countries throughout the world are concerned about food safety because improving food safety is integral to the successful attainment of the Sustainable Development Goals (SDGs). A report from the Ministry of Health 2019 stated that of all the food poisoning cases reported in Malaysia, 21% were from sources such as food trucks, restaurants, night markets etc. The objective of this research is to identify the indicators used to measure food safety within the food truck business in Malaysia which the government could then implement, particularly in response to the changing world and to achieve the target of the SDGs.

Design/methodology/approach: Data were collected through literatures search on food safety in Malaysia.

Findings: This study have identified the food safety attributes as follows: (1) food affordability, (2) food availability, (3) quality and safety, (4) hazard and risk, (5) hygiene knowledge, (6) hygiene attitudes and (7) hygiene practices

Research limitations/implications: This concept paper is based on previous research.

Practical implications: This research will contribute to new knowledge in the food safety field and it can assist the food truck operators to identify indicators that will influence their food safety, thus, will benefit the society acquiring a safe and hygienic food.

Originality/value: The model develop in this paper is for food truck operators in Malaysia.

Paper type: Conceptual paper

Keywords: Food truck, Food safety

Introduction

In recent years, urban B40 has become a more noticeable phenomena in Malaysia as a result of urbanisation's influence. Cost of living has been a significant problem for B40 households. As is well known, Malaysia is one of the ASEAN region's fastest expanding economies, with government initiatives or schemes typically created and marketed around sustainable agricultural, industrial, and service-oriented businesses (Mokthsim & Salleh, 2014). It promotes sustainable entrepreneurial initiatives that may generate both financial and non-financial advantages. Food trucks are a growing trend in the restaurant industry, particularly in urban areas, where most proprietors prefer to operate a mobile truck rather than a brick-and-mortar establishment. Their movement enables them to cover a larger region. Additionally, this business has a bright future since its start-up costs are lower, it is easier to develop, and it provides customised delicacies to its consumers.

As the number of food truck enterprises has risen, the Malaysian government has taken the step of reforming the regulations governing them in order to ensure the industry's health and quality. According to secretary Joel Lee, as yet, there is no standard regulation for food trucks in Malaysia, and that the current standards and criteria used by the organisation were from the United States and Australia (The Star, 2017). Besides that, Malaysian Food Truck Association (MAFTA) chairman Datuk Mohamad Zaini Md Taha, also insists the government to come up with a comprehensive guideline for food truck operators to facilitate their trading activities (The Star, 2019).

However, as a growing new industry, previous investigations have focused on issues such as inefficient operating processes, kitchen ethics, food safety, legislative concerns, and a lack of tactical planning among food truck firms (Mokhtar, Othman, Arsat, & Ariffin, 2018). According to a 2019 study from the Ministry of Health, 21% of food poisoning cases in Malaysia were caused by other sources such as food trucks, restaurants, and night markets, omitting schools, institutions, and private residences. Additionally, the ministry emphasised that it is critical to take significant measures to ensure food safety and hygiene (New Straits Times, 2019).

Additionally, studies indicate that between 12 and 18 percent of food-borne diseases are caused by contamination, poor food safety, and ineffective hygiene measures, all of which are attributed to street-cooked food handlers (Tuglo et al., 2021). As a result of the growing recognition of the link between food and health, food safety is gaining increased attention; at the same time, as the global food trade develops, food safety has become a common problem for developed and developing countries alike (Ismail, Latiff, & Mustafar, 2018). However, relatively few examined potential sustainable methods that would result in high-impact entrepreneurship opportunities in the aforementioned industry, with a particular emphasis on Malaysian premises (Alfiero, Giudice, & Bonadonna, 2017; Mokhtar et al., 2018).

Following this, a study of the pertinent literature indicates that a number of studies have been conducted to ascertain consumer preferences, customer intents, the influence of social media, and food safety, with a particular emphasis on the food truck industry. Indeed, studies indicate that environmentally and community-conscious food trucks may be able to provide healthier and safer food alternatives for the general population as well as visitors, if an appropriate sustainable plan is implemented (Mair & Sumner, 2017). Additionally, studies have revealed that consumers lack an appropriate grasp of food safety concepts, despite their actions implying otherwise (Wilcock & Ball, 2017). Thus, it is essential to ensure the food safety is achieved at the highest level (Hashim, Isa, Menon, & Nazari, 2019). This study, therefore, this study aim to identify the indicators used to measure food safety within the food truck business in Malaysia.

Literature Review

Food Truck Industry in Malaysia

Urbanisation has resulted in a rise in the number of food truck operations, which has influenced the social, economic, and cultural advantages associated with food truck activities. According to IBIS World, the worldwide food truck sector has expanded at an average annual rate of 9.3 percent during the previous five years (Bandaru & Venkateshwarlu, 2017). The food truck, as a new phenomena in urban culture, has the ability to repurpose underutilised space and create walk-through culinary attractions (Wessel, 2012). The food truck sector has developed into a global phenomenon, gaining appeal on a global scale. Food trucks have an impact on the social, cultural, and economic options available to both sellers and customers in the United States (Thomas, 2016; Cardoso et al., 2014).

As a result of the growth of food tourism in New Zealand, food trucks now play an increasingly important role (Haddad et al., 2016). Restaurants with established brands extend into the food truck market as pop-up restaurants in North America, Australia, and European cities, for example (Henderson, 2017). The inexpensive start-up expenses of food truck enterprises attract youthful entrepreneurs and professional chefs in developing countries (da Silva et al., 2014). In the Klang Valley of Malaysia, a food truck company selling street cuisine has emerged. Across cultures and countries, food trucks have recently become a major part of urban lifestyles (Ab Wahab, Halim, Rashid, & Adam, 2017; Mokhtar, Othman, Arsat, & Bakhtiar, 2017).

The food truck industry has already been enjoyed in various forms for many years (Blazevic, 2016). According to Frommer and Bert (2012) the food truck company is the ideal option for individuals with a surplus of ideas but a scarcity of cash to experiment with new concepts and recipes. It not only enables entrepreneurs to start businesses, but it also extends the sector by providing new employment and enhancing people's quality of life (Ab Wahab et al., 2017). While this suggests an upward shift in the development curve, food truck operators in Malaysian locations continue to face legal problems (licence) as well as criticism over sustainability concerns (Mokhtar, Othman and Fadzil Ariffin, 2018; Wahab et al., 2017). The food truck business in Malaysia has the potential to develop into a high-impact entrepreneurial alternative provided it continues to get attention and support from the government and local authorities willing to promote this industry.

Food Safety

Food safety is described as the conditions and practices that preserve the quality of food by preventing contamination and food borne illnesses (Bish, Brown, Gordon, & Matthews, 2017). Food safety is a necessary feature for living a healthy life. However, managing the quality or absence of risks is one of the most difficult jobs that food services face (Saad, See, & Adil, 2013). The challenges include: (1) sick from food, (2) under-reported statistics due to complications in diagnosing food-borne illnesses because symptoms vary among victims depending on their age, pregnancy status, or immune system status, and (3) agents of food-borne illness varying (Saad et al., 2013).

Keeping food safe has become a top public health priority in recent years. Cases in which people have consumed unhealthy food have gotten progressively worse are on the rise (Norazmir et al., 2012). In both developed and developing countries, food safety is crucial since gastrointestinal diseases cause millions of illnesses and thousands of deaths each year through gastrointestinal sources (Pilling et al., 2008). It's not just developing countries like Canada and Denmark that are affected; it's also countries like the UK, New Zealand, the Netherlands, Norway, Serbia and the United States of America. Global food security has also become an issue, with outbreaks of food-borne disease ravaging poor countries (Akhtar et al., 2014).

Foodborne illness causes around 9.4 million hospitalisations and 1,351 deaths per year in the United States, according to government estimates (Garayoa et al., 2011).

Malaysia is not immune to these food safety problems on a local level. Profitability and efficiency have been a significant aim for the growth of food companies in Malaysia, which has indirectly contributed to severe food safety risks (Liu et al., 2014). Regardless of how the Malaysian food business develops, food safety events have grown increasingly significant in recent years, drastically disrupting everyday routines and having a detrimental impact on the food sector's development as well as the overall Malaysian economy (Ismail et al., 2018). It is becoming a critical public health concern, since an increasing number of individuals eat outside the house. As a result, individuals are at risk of contracting food-borne diseases from food stalls, restaurants, and other food establishments (Ortega, Wang, Wu, & Olynk, 2011).

Methods

Desk research is employed in this research where references were done based on previous research, published reports and statistics that are related to food safety and food truck operators.

Findings

Food Safety Attributes

Food safety must be guaranteed by safeguarding the food supply from microbiological, chemical, and physical dangers that may occur throughout the food production process, including growing, harvesting, processing, shipping, retailing, distributing, preparing, storing, and consuming. Food safety systems that are well-developed contribute to enhanced public health, expanded access to the food trade, increased food security, and environmental protection (Chen, Yu, Shih, Chang, & Hsu, 2019).

Previous study on food safety issues, as shown in Table 1, has been performed largely in other countries, rather than in Malaysia particularly. The majority of variables relate to food safety awareness, food handling procedures, and food hygiene practises. Food handlers' knowledge, attitude, and practise all have an impact on foodborne illness cases. Understanding the relationship between prevalent food safety knowledge and practises can help reduce the risk of foodborne disease (Nur Afifah, Asma', & Malina, 2020).

To begin, food safety is a critical component of food systems and has significant consequences for public health. Thus, in addition to concentrating on food safety knowledge, food handling procedures, and food hygiene practises, this research proposes four additional food safety qualities for Malaysia food truck owners, including food cost, food availability, food quality and safety, and hazard and risk. To preserve and promote human health, food truck operators must ensure food safety. Food cost and availability must also be addressed. This is support with findings from Solomianiuk, Iryna, and Dragan (2019), van Veen (2005), and Dumas et al. (2021) who identifies the strong link between food affordability and food availability on food safety.

Apart from that, food quality and safety are critical attributes, since the challenge of food safety is to guarantee that everyone has enough food to live a productive life, but a significant part of food safety is ensuring that the food is safe chemically, physically, or biologically (Hanning, 2012). Finally, there are several risks associated with food safety, which may be biological, chemical, physical, or allergic in nature. As a result, food safety hazards and risks are critical for food truck handlers, as they may help reduce foodborne disease (Barlow et al., 2015; Bouzembrak & Marvin, 2019; Ncube, Kanda, Chijokwe, Mabaya, & Nyamugure, 2020; Özçakmak, 2019). These attributes will be discussed in the following paragraph.

The first element is food affordability, which is seen as part of a community's food environment, with a portion of that environment assessed in terms of the availability of diverse food sources (Berman, 2011; Hendrickson, Smith, & Eikenberry, 2006; Zheng, McLaughlin, & Kaiser, 2013). Studies have shown that lower-income groups cannot afford to buy healthy foods due to high prices and the unavailability of these foods (Jetter & Cassady, 2006; Osman et al., 2014; Stewart & Blisard, 2006). Limited income is the primary impediment to purchasing nutritious foods for this population, which results in the purchase of items that are harmful to their health. Additionally, this group spent the majority of their money (38 percent) on food (Zainal Badari et al., 2012). In the study by Ahmad, Zulaily, Shahril, Abdullah, and Ahmed, (2018) they also found that higher household income and smaller household sizes have a direct link with the socio economic status of the household, a higher purchasing power and food affordability.

Following that is food availability, which is a measure of the food that is and will be physically accessible in a population's immediate area during a particular period (Hoddinott & Yohannes, 2002) It reflects the government's role and the effects of their decisions on the food production process. The ability to access food rests on two pillars: economic and physical access (FAO., 2014). Access to food, both economically and physically, is a critical component of food and nutrition security. Access to food and availability of food are inextricably connected. Food supply is inextricably linked to food production, which might be local or distant. If food is available locally, it is also dependent on trade systems, as well as packing, transportation, and storage. This increases the cost to the customer, unless the cost of production at a distance is significantly lower than the cost of production locally, therefore offsetting these additional expenses (Ingram, 2011; Ismail et al., 2018).

Thirdly, food quality and safety will be evaluated, including the nutritional composition of a typical diet and food safety. The topic of nutrient intake measurement has risen to prominence on the policy agendas of both government and non-governmental groups. As a result, its presence in the composite index is critical (Santeramo & Khan, 2015). In the last decade, the public, government, and food business have paid more attention to food quality issues. The complexity and extension of the food supply chain raises the danger of food contamination. Numerous elements contribute to the quality of a food product. External information such as composition, food quality indicators, trademarks and emblems, symbols of company quality systems, and compliance with food safety regulations is provided on the box or label (Dickson-Spillmann, Siegrist, & Keller, 2011; Grujić & Grujić, 2012).

The fourth element is the danger and risk associated with eating. Food safety risk might begin with the identification of potential food risks. A hazard is an incident or occurrence linked with an activity or process that has the potential to cause negative effects and hence creates a risk for the receiving environment or population. Food-related risks can be categorised according to their source of risk, which includes microbiological, chemical, and technical dangers (Wu, Liu, & Chen, 2018). Microbiological risks have been recognised as the source of food-borne illnesses in the Malaysian food sector. These findings indicate that, in addition to prepared meals and water sources, food handlers are a source of contamination (Saad et al., 2013). Risk will always exist in food service enterprises, and so food service operators must identify preventative measures that may be implemented at each level of their establishment in order to remove or minimise such risks to an acceptable level (McFarland, Checinska Sielaff, Rasco, & Smith, 2019).

The fifth component is understanding of food hygiene; this is critical since determining whether a meal is safe or not is a challenging process. Food can never be completely safe or completely dangerous. It can only be shown to be harmful to a certain extent under specific circumstances. While requiring food to be entirely safe is impractical, it is feasible to have food with fewer

potential dangers (Ray & Bhunia, 2013). Tan, Bakar, Karim, Lee, and Mahyudin (2013), reported that hygienic food preparation and education of individuals engaged in the preparation, processing, and serving of meals are critical in lowering the risk of food borne diseases. According to 1995 research done by the Food Agriculture Organisation, insufficient understanding resulted in ineffective food handling methods. This discovery is based on an examination of food sold by mobile food handlers for microbiological contamination (Park, Kwak, & Chang, 2010).

Equally critical is the sixth component, which is one's attitude toward food hygiene. Attitude is defined as a multifaceted mental state comprised of ideas, feelings, values, and proclivity to act in particular ways (Sharif & Al-Malki, 2010). Attitude questions were used to ascertain food handlers' awareness of food safety. Thus, in addition to education and enforcement, the attitude of food handlers is critical in reducing food-borne illnesses (Mustaffa, Rahman, Hassim, & Ngadi, 2017).

Finally, there is the issue of food hygiene. Food hygiene refers to the conditions and practises that must exist in order to assure the safety of food from production to consumption. Inadequate food hygiene procedures can result in foodborne illness and even death (Ali, William, Prajapati, & Ahmed, 2018). Food handlers have a significant role in passively transferring diseases from contaminated sources, such as germs transmitted from raw meat to ready to eat. If they do not follow proper sanitary procedures, the entire food processing facility may get contaminated, resulting in mass illness (Sani & Siow, 2011).

Table 1: Previous Research on Factors of Food Safety

Author/s	Factor/s	Findings	Country
Ghezzi, Ayoun, and Lee (2021)	1. Food safety knowledge 2. Personal hygiene 3. Food preparation	-The results indicated poor knowledge of food handlers about hygiene and food safety in food services	USA
Ashkanani, Husain, and Al Dwairji (2021)	1. Food safety Knowledge 2. Food handling practices	-An effective food safety education programme is urgently needed	Kuwait
Kim (2019)	1. Food hygiene cognition, 2. Food hygiene attitude 3. Personal hygiene control	- Food hygiene cognition does not appear to promote personal hygiene control directly, according to the findings of this study, but it may improve food hygiene attitude, which in turn could improve personal hygiene control.	China
Barjaktarović-Labović et al. (2018)	4. Food safety 5. Food handlers 6. Hygiene 7. Food services	- The number of foodborne infections could be reduced by educating food handlers on proper hygiene and food handling techniques on a regular basis. This could benefit the public's health.	Podgorica
Jen (2018)	1. Food safety knowledge	-According to the findings, food safety has two components which is to establish comprehension of food safety knowledge and collaboration amongst the five societal segments,	China

		education is required. Education is also required to build trust among the many stakeholders.	
Okojie and Isah (2014)	<ol style="list-style-type: none"> 1. Food handling practices 2. Environmental hygiene of food premises 	- Vendors of street food were found to be using acceptable food handling methods and selling their wares in sanitary settings.	Africa
Lubos (2014)	<ol style="list-style-type: none"> 1. Food safety knowledge 2. Food handling practices 	- Due to lack of basic facilities like water and toilets at their vending locations, some sellers' knowledge of food safety was unable to be put into practise..	Philippines

Discussion and Conclusion

Figure 1 below propose the food safety attributes for Malaysian food truck operators based on the above discussion.

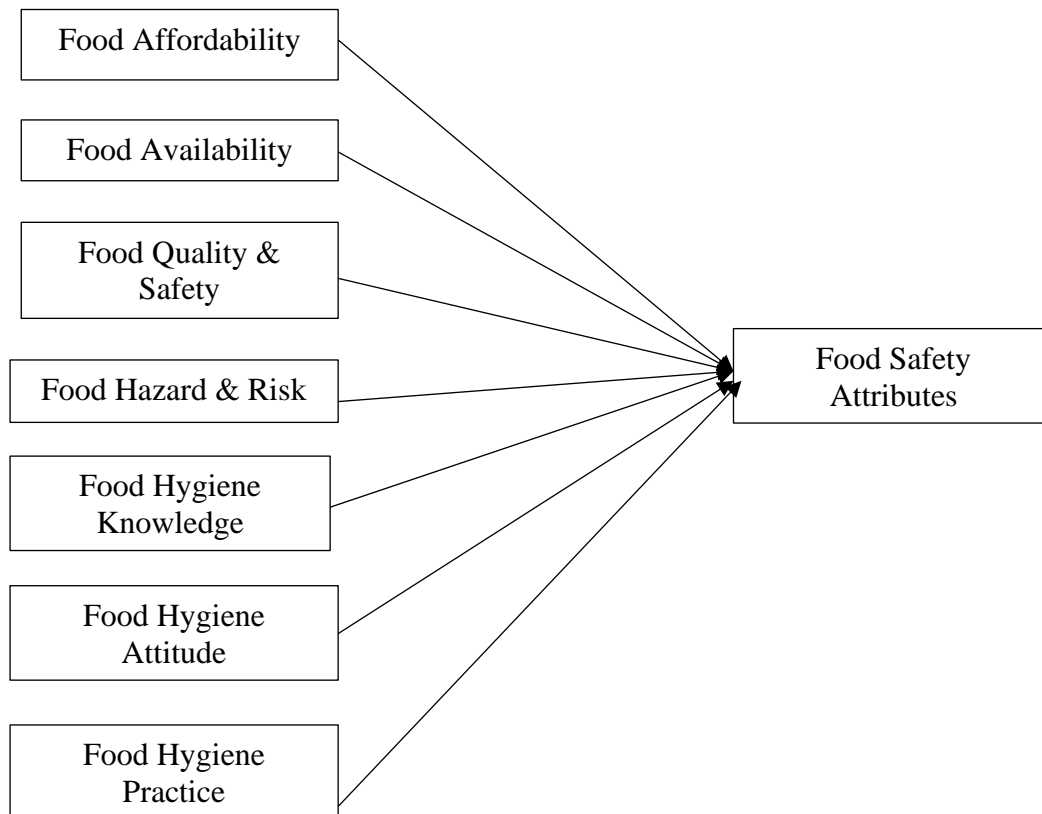


Figure 1: Food Safety Attributes

Theoretical Implications

According to the desk study findings, there is a dearth of literature on food safety among food truck owners, particularly in Malaysia. The findings of this research will add to the field's body of knowledge. It is advised that a future study perform empirical research to confirm the food safety features mentioned in this research. Additionally, the majority of previous studies have concentrated on the relationship between food safety and economic growth, climate change,

population, and corruption, and have largely ignored Malaysia in favour of other developing countries such as African countries or developing countries in general.

Limitations and Suggestions for Future Research

Due to the scarcity of similar studies in Malaysia, the authors think that an in-depth study of Malaysia is necessary to bridge the gap between those prior studies. Due to the fact that food safety has become a significant issue in Malaysia and the ASEAN countries, all issues affecting food safety should be highlighted. This will aid in the development of more effective policies and initiatives aimed at enhancing the country's food safety levels.

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