



***FOOD SAFETY KNOWLEDGE, ATTITUDES AND PRACTICES AMONG THE
STREET FOOD VENDORS IN GAYA STREET, SABAH***

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For the award of the Degree of Bachelor Science (Agribusiness)

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CERTIFICATION

This project report entitle “**Food Safety Knowledge, Attitude And Practices Among The Street Food Vendors At Gaya Street, Sabah**” is prepared by Nurul Fazilah Azuana Binti Saidul and submitted to the Faculty of Agriculture in partial fulfilment of the requirement of PPT 4999 (Final Year Project) for award of the degree of Bachelor Science (Agribusiness) is based on my original works.

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ABSTRACT

This study is to investigate the knowledge, attitude and practices on food safety among the street food vendors in Gaya Street, Sabah. Using quantitative approach, self-administered questionnaire was distributed to 77 street food vendors. Although food handlers may be aware about the need for personal hygiene and food hygiene, they do not understand about the food hygiene such as the time to cook of foods. All the completed questionnaires were checked manually and data were analysed by computer using SPSS version 22.0 software package. Chi-square analysis that age, educational level, business experience and training on food safety appeared no association towards food safety ($p > 0.05$)., where personal hygiene knowledge and contamination appeared has association towards food safety practice ($p < 0.05$) and self-improvement and responsibility also appeared have association towards food safety practices ($p < 0.05$). Thus null hypothesis is rejected. Finding of this study may help in to improve the knowledge, attitude and practices towards food-borne disease and food safety that ensure the foods are safe to be consumed by consumers.

ABSTRAK

Kajian ini adalah untuk mengkaji pengetahuan, sikap, dan amalan keselamatan makanan di kalangan penjual makanan jalanan di Gaya Street, Sabah. Dengan menggunakan pendekatan kuantitatif, soal selidik diri diberikan kepada 77 penjual makanan jalanan. Walaupun pengendali makanan mungkin menyedari keperluan untuk kebersihan diri dan kebersihan makanan, mereka tidak memahami tentang kebersihan makanan seperti waktu untuk memasak makanan. Semua soal selidik yang lengkap telah diperiksa secara manual dan data dianalisis oleh komputer menggunakan pakej perisian SPSS versi 22.0. Analisis Chi-square bahawa umur, tahap pendidikan, pengalaman perniagaan dan latihan tentang keselamatan makanan tidak menunjukkan persatuan terhadap keselamatan makanan ($p > 0.05$). pengetahuan kebersihan diri dan pencemaran muncul sebagai persatuan terhadap amalan keselamatan makanan ($p < 0.05$) dan peningkatan diri dan tanggungjawab juga muncul mempunyai persatuan terhadap amalan keselamatan makanan ($p < 0.05$). Oleh itu, hipotesis nol ditolak. Penemuan kajian ini boleh membantu meningkatkan pengetahuan, sikap dan amalan terhadap penyakit yang ditanggung oleh makanan dan keselamatan makanan yang memastikan makanan selamat dikonsumsi oleh pengguna.

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CHAPTER 1

INTRODUCTION

1.0 Urbanization and consumption pattern in Malaysia

Malaysia is one of the developing countries that undergo urbanization. Development in Malaysia is rapidly growing as population increase (World Bank, 2015). It can be shown in the data from (DOSM,2015), the percentage of urbanization of Malaysia is increasing by 71.0 percent in 2010 compared to the year 2000 with 62.0%. Every ten years, the urbanization in Malaysia for every state showing the enhancement in percentage. Chart 1 below shows the bar chart of the increasing of the level of urbanization for every ten years from 2000 until 2010 and the percentage for 14 states in Malaysia including W.P Kuala Lumpur and W.P Putrajaya. Meanwhile, chart two below shows the level of urbanization by state Malaysia 2010.



Chart 1: Level of urbanization of Malaysia 1980, 1991, 2000, 2010

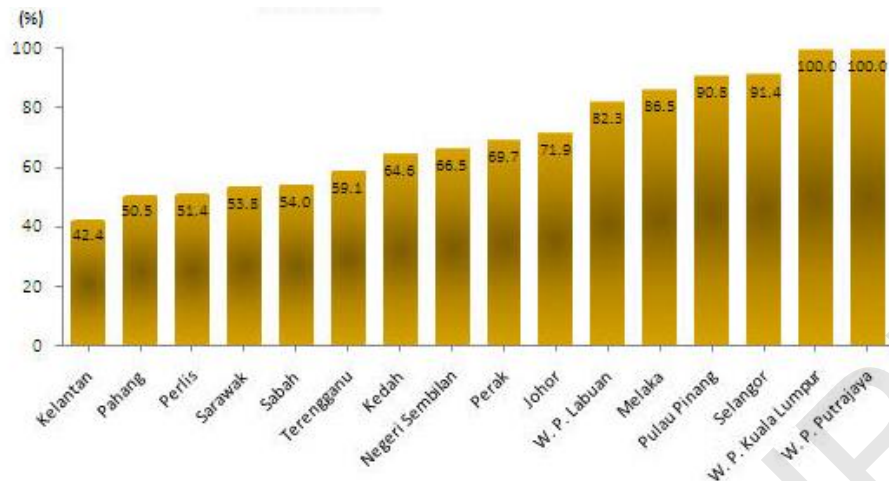


Chart 2: Level of urbanization by state, Malaysia 2010

Source: Department of statistic Malaysia, 2017

The urbanization levels in Sabah and Sarawak are still lower compared to the states in Peninsular Malaysia. This level of urbanization in different states was caused by the migration of people from a rural area to the urban center. The rises of the urban population growth lead to the changing of eating pattern of people in urban area. Eating-out becomes popular in urbanization area due to the changing of lifestyle (Noraziah and Mohd, 2012). Due to the changing of lifestyle which is people become busier, they tend to eat or buy food from outside such as street food, restaurant, stall and so on, as well the foods are the convenience in term of time of preparing, cooking and serving while it also cheap. Besides that, foods that are sold in this way is not just give accessible for consumers, it also becomes the part in term source of nutrition (Adjrah, Y et al., 2013). These demands also influence the growth of the food street industry in Malaysia. This is due to the harsh economy where all people that live in the urban areas looking for something that cheaper (Rahman, Bakar and Tambi, 2013). Furthermore, the trend of eating-out make food service industry keep growing that causing by the changing of the way people live in urban area which is tend to eat out (Yeo & Leu, 2014)

1.1 Street Food

According to WHO,1996 the term “street food” is any types of food and beverages that ready-to-eat prepared and sold in open places. There is different of street food and formal sector food establishment such as restaurants in term of their place to do the sell and buy transaction (Draper, 1996). The foods and beverages that sell generally prepared cooked and sold in the same stall. They commonly sell their food by using the pushcart, bicycle, mobile, or from the stall that did not have permanent walls. This type of business usually can be found at the public places where it provides the basic need for urbanization peoples (Muzaffar et al. 2009). As the growth of food street people with the low and middle income will always tend to buy foods from this sector because it less expensive, convenient and accessible due to the place that their operation. When buy and eat the foods, most people in Malaysia more concern about the taste and not really concern about the safety of the food (C.Y and et al. 2017).

While the street foods are the source of food for dwellers that live in urban areas it is also the source of the poor health (F.H. Mackay et.al, 2016). In Malaysia, the increasing of food poisoning cases was recorded higher by 4.3 per 100,000 (DOM, 2016). Abdul Mutalib et al (2015) stated that neglecting the crucial of the safe way to handle food during preparation caused the increasing of food poisoning. Sometimes, foods that sold in this area faced several problems which are exposed to the unsafe water, dirt from the streets, pests and so on. Regarding to (FAO,2014) up to 2 million people around the world facing a death that cause by the unclean water and food. Besides that, sometimes people that prepared for that foods not really concern about personal hygiene during preparation that can be cause of food foodborne illness and lead to food poisoning (Annor, G.A & Baiden, E.A, 2011). In the previous study (Sampondo, 2015), food handlers have a major factor that can caused the foodborne

diseases because they have a direct contact with the foods in terms of preparation, presentation, and so on.

In Malaysia, persons that want to start up the business involving the food industry need to get the license and they have to attend courses in food handling that will teach them about the correct ways to handle the food before serve it to the customers. In spite food handlers have the license and attend the course certain food handlers do not practice the correct way about the safe handling of food. In the previous studies (N. Abdullah Sani an O.N. Siow, 2013) there is only 46.6% of their respondents that applying the personal hygiene practices such as wearing the gloves during prepared the foods, wearing the apron, cap, uniform and suitable shoes, wearing the jewelry during preparing the foods.

1.2 Foodborne disease cases in Malaysia

The outbreak of foodborne disease is defined as “the occurrence of two or more cases of similar illness due to the consumption of food” (Soon et al., 2011). Food is the source of the nutrients and the source where people get their energy to do their daily job. Meanwhile, food also can be the medium of growth of microorganisms and it also has become the concern every part of the world with outbreaks of foodborne illness that will affect to individuals (Kaferstein et al,1997). This type of problem has become the one of the main important as public health and economic in many countries for a past few decades (Veiros et al, 2009). People around the world has suffered the food borne diseases, it is because of the consuming the contaminated foods (Giritlioglu et al., 2011). The consuming of contaminated of foods can lead to the food poisoning. Sanlier (2009), stated that people in developing countries consuming the food that not safe for their health.

In Malaysia, foodborne diseases cases could be said at the high rate because of the condition of country that suitable temperature and condition that can lead to the growth of bacteria and also happen due to the poor level of hygiene in food premises (Abdul Mutalib, 2015). It was supported by Soon et al., (2011) that, most of foodborne disease occurred in Malaysia associate with the unsanitary during preparation of foods that have be done by food handlers and transfer the bacteria to the foods.



1.3 Problem Statement

Street foods in Malaysia has rapidly increased due to the changes in current trends of urbanization in Malaysia. Nowadays, eating-out is practiced by people in Malaysia due to their busy lifestyle. Street food and contamination is unavoidable because of the environment of street food itself. Before involving in this sector, vendors and food handlers of street foods were given an education that related to the personal hygiene in purposed to improve the food handling practices and thus the safety of foods. All vendors and food handlers need to attend the food handling course before their involved in this industry.

The increasing number of foodborne disease in Malaysia reflect the poor of food handling by food handlers. It was supported by (WHO,2002) stated that, popularity of street food as the factor of foodborne disease a main concern around the world. Even though education of food industry has been done as means of to improve the food handling practices but the street food vendors still lack on the basic food hygiene practices. According to Alsop (2013), foodborne illness can still occur even though the premises are in clean situation. Besides that, it shows food handler are the most vital person to ensure the foods are always safe for consumption. We believe most of food that sold in street foods in this country was often prepared in home and do not in the vending place and the preparation of the foods are cannot be seen by people. Thus this study is to investigate food safety knowledge, attitude and practices among food street vendors because they are more exposed to environmental hazards.

1.4 Research Question:

1. What are the relationship between knowledge, attitude and practices level of food street vendors?
2. Is there any relationship between food safety knowledge, attitudes and practices among food street vendors and socio-demographic?

1.5 Objectives of Study

1.5.1 General Objective:

This study is to investigate the knowledge, attitudes and practices of food safety among food street vendors in Gaya Street, Sabah.

1.5.2 Specific Objectives:

This specific objective will help us to investigate more into our general specific.

1. To analyze the relationship between socio-demographic and practices of food safety among street food vendors
2. To determine the relationship between food safety attitude of street food vendors towards food safety practices.
3. To analyze is there any relationship between food safety knowledge and food safety practices among food street vendors.

1.6 Significance of Study

1. Street food vendor

There is need to assess the food safety knowledge, attitudes and practices of the street food vendors because of there is assumption that claimed about the hygienic of the street foods. This study is to help the street food vendors to be more concerned about the importance of food safety to be implemented in every operation of their business. In order to decrease the chance of their food will be contaminated, they have to followed and practice the right way in their operations. It also helps them to check back about their practices to ensure the foods that sold are safe to be consume by consumers. For an example the questions from questionnaire section D asked about their practices towards food safety. This section will help them to reflects about their practices in term of preparing, cooking, storage, and displaying foods.

BIBLIOGRAPHY

1. Abdul-Mutalib et al., (2015). An overview foodborne illness and food safety in Malaysia. *International Food Research Journal* 22(3): 896-901
2. Adjrah et.al., (2013). Socio-economic profile of street food vendors and microbiological quality of ready-to-eat salad in Lome. *International Food Research Journal* 20(1): 65-70
3. Albarracín, D., Johnson, B.T., Zanna, M.P. & Kumkale, G.T. (2005). Attitudes: Introduction and Scope. *Lawrence Erlbaum Associates, Inc.* (pp.3-20).
4. Annor, G., & Baiden, E, (2011). Evaluation of food hygiene knowledge, attitudes and practices of food handlers in food business in Accra, Ghana. *Food and Nutrition Science*. Vol 2 No 8.
5. Anthony C. Iwu et al., (2017). Knowledge, attitude and practices of food hygiene among Vendors in Owerri, Imo State, Nigeria. *Occupational Diseases and Environmental Medicine*, 5, 11-25.
6. Choudhury, M (2011). Will capacity building training interventions given to street food vendors give us safer food?: Cross -sectional study from India. *Food Control*, 22 (8): 1233-1239.
7. Department of Statistic. (2015). Population distribution and basic demographic characteristic report 2010.
https://www.dosm.gov.my/v1/index.php?r=column/cthem&menu_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09&bul_id=MDMxdHZjWTK1SjFzTzNkRXYzcVZjdz09. Accessed on December 2017
8. Draper (1996). Street foods in developing countries: The potential for micronutrient fortification. *Research gate*.

9. F.H Mackay et al., (2016). Street vendors in Patna, India: Understand the socio-economic profile, livelihood and hygiene practices. *Food Control* 70. 281-285
10. Faridah Hanim Ismail et, al., (2016). Food safety knowledge and personal hygiene practices amongst mobile food handlers in Shah Alam, Selangor. *Social Science and Behavioral Science* 222 (2016). 290-298
11. Food and Agriculture Organization of United Nation (FAO). Food Safety: A right or a privilege understanding the importance of food safety to the food security and nutrition agenda. *Second International Conference on Nutrition (ICN2)*, 2014
12. Ghazali et al., (2012). Food hygiene knowledge, attitudes and practices among food handlers in restaurant in Selayang area. *11th International Annual Symposium on Sustainability Science and Management*, 611-615.
13. Hui, Hishamudin Abdul Halim, Kwai and Lay (2017). Assessment of food safety knowledge, attitude, self-reported practices and microbiological hand hygiene of food handlers. *International Journal Environmental Research. Public Health*. 14(1), 55.
14. Kalua F (2001). The relationship between knowledge, attitude and practices of care givers a Food Hygiene in Day Care Centers. M Tech Degree Dissertation, Technikon Pretoria, Pretoria. *Food and Nutrition Sciences*, Vol.5 No.10.
15. Kaferstein FK, Motarjemi Y & Bettcger DW (1997). Foodborne disease control: a transnational challenge. *Emergence Infection Disease* (1997) 3(4): 503-10
16. Mohd Firdaus Siau et al., (2015). Food court hygiene assessment and food safety knowledge, attitude and practices of food handler in Putrajaya. *International Food Research Journal*. 22(5): 1843-1854

17. Muzaffar, A. T., Huq, I., & Mallik, B. A. (2009). Entrepreneurs of the streets: An analytical work on the street food vendors of Dhaka city. *International Journal of Business and Management*, 4(2), 80-88.
18. Noraziah Ali and Mohd Azlan Abdullah (2012). The consumption and eating behaviour of Malaysia urbanites: Issues and concerns. *Malaysia Journal and of Science and Space 8 Issues 6* (157-165)
19. Nurul Amelia Mustafa et al., (2017). Evaluation of knowledge, attitude and practices of handlers in campus cafeterias. *The Italian Association of Chemical Engineering*. Vol.56.
20. N. Abdullah Sani and O.N. Siow (2014). Knowledge, attitudes and practices of food handlers on food safety in food service operations at the Universiti Kebangsaan Malaysia. *Food Control*. 37. 210-217
21. Rahman, M.M., Arif, M.T., Bakar, K and Tambi , Z. (2012). Food safety knowledge, attitude and practices among the street food vendors in Northern Kuching City, Sarawak. *Borneo Science*, 31, 94-103.
22. Rennie, D. M. (1995). Health education models and food hygiene education. *Journal of Royal Social Health*, 115.
23. Saad, M.; Toh, P.S.; Adil, M.A.M. Hygiene practices of food handlers at Malaysian government institutions training centers. *Procedia Soc. Behav. Sci.* 2013, 85, 118–127
24. Sanlier (2009). The knowledge and practices of food safety by young and adult consumers. *Food Control*. 20(6): 538-542
25. Samapundo, S, Can Thanh, T. Xhaferi, R., & Devlieghere, F. (2016). Food safety knowledge, attitudes and practices of street food vendors and consumers in Ho Chi Minh city, Vietnam. *Food Control*, 70, 79-80.

26. Toh, P.S. and Birchenough, A (2000). Food safety knowledge and attitudes: Culture and environment impact on hawkers in Malaysia. Knowledge and attitudes are key attributes of concern in hawker food handling practices and outbreaks of food poisoning and their prevention. *Food Control* Vol.11 No. 6 pp.447-452 ref.21
27. Veiros et al (2009). Food safety practices in a Portuguese canteen. *Food Control* 20: 936-941.
28. WHO (1996). Essential safety requirements for street vended foods. *Food Safety Unit, Division of Food and Nutrition, WHO/FNU/FOS/96.7.*
29. World Health Organization. Office of World Health Reporting. (2002). The World health report : 2002 : reducing risks, promoting healthy life : overview. Geneva World Health Organization <http://www.who.int/iris/handle/10665/67454>
30. W-H Ko (2013). The relationship among food safety knowledge, attitudes and self-reported HACCP practices in restaurant employees. *Food Control* 29 (2013) 192-197
31. Yeo & Leu (2014). The recruitment of migrant workers in the food service industry in Malaysia. A study of Old Town White Coffe and Pappa Rich Kopitiam. *International Journal of Business, Economic and Management*, vol. 1, issue 10, 291-304.