

Do Customers of Street Food Vendors Know about Food Safety Practices?

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Abstract: The application of food safety by the street food vendors in Bandung-Indonesia is still questionable, it could be seen by the method they use to sanitize the equipment and how they handle the foods. This should be a big concern since almost all Indonesian people are their potential consumer. The customer of street food vendor becomes the focus of this study because they made the purchase decision based on their knowledge about food safety practices. This study was conducted to find out how much the knowledge that street food vendor's customers have regarding food safety. Descriptive method was used in this study and the data were collected by using questionnaires. The respondents were 300 customers and also 300 street food vendors who usually sell their food around Geger Kalong Street, Dipati Ukur Street and Cihampelas Street, which are three spots where the street food vendors highly concentrate in Bandung. This study reveals that the customer is still lack of knowledge about the application of Hazard Analysis and Critical Control Point (HACCP) and also about the regulation related food safety applied in Indonesia. Hopefully, these results could be used as a reference for the government to give more knowledge about food safety to the customer of street food vendors in Bandung.

1 INTRODUCTION

Food is the very basic need of human being. It is essential to life yet if contaminated, it can cause illness and death (Griffith, 2006). The cases of food poisoning that have been reported are relatively high but no one really knows the exact number because most of the cases are not reported. This Foodborne disease is a major concern across the globe, it has a serious impact on public health also on the economy, tourism and trade (Taylor et al., 2015).

The United States Public Health Service in Walker (2014: 260) stated that more than 40 diseases can be transferred from food. World Health Organization (December, 2015) reveals some facts, that in unsafe foods contain bacteria, parasites, or harmful chemicals, it can cause more than 200 diseases, from diarrhea to cancer. An estimated 600 million people, almost 1 in 10 people worldwide, becomes ill from eating contaminated food and 420,000 people die each year, causing the loss of 33 million healthy life years (DALYs). The World Health Organization (December 2015) also stated that Africa and Southeast Asia has the heaviest burden of handling foodborne diseases. Indonesia as a country

located in Southeast Asia is also an area prone to foodborne illness.

The problem of food safety that arise in Indonesia not only comes from household, the food and beverage industry plays its role too, especially those who are still in micro and small scale business. The number of micro and small scale food service industry are growing rapidly year after year. There are still a lot of them who did not apply appropriate food safety practice. This should be one of the Indonesia's biggest concern since their customer is wide range, from elementary school student until adult people, not only low economic class, but also wealthy people also consume their product.

Although study said that majority of customers were more interested in price and perceived product quality than hygiene (Morrison, Caffin and Wallace, 1996). But customer perception about safety and healthy menu was very important for food and beverages industry. When customer assumed the food was not safe, then there would be doubt to consume it. According to Ghiselli (Almanza, et.al., 2014: 5), since the customer didn't know how the food was produced, so they associated it safe to be consumed by the level of hygiene that they saw.

Most of the food safety studies discussed microbial and technological food risks (Knight, Worosz and Todd, 2009), one of the topics related to it was food additives, experts already discussed it since a long time ago (Snell & Snell, 1962; Philp, 1981; Wheelock, 1988). The purpose of this study is to gain the knowledge about food safety of customers who purchase street food vendor's product. As stated by A. J. Knight et al. (2009), variables like knowledge, trust and socio-demographics were associated with the level of concern about food safety. Knowledge itself is the level of information a person possesses about a particular risk (Knight, Worosz and Todd, 2009). So customers have an awareness about the risk that they will get from buying food from street food vendors, and this awareness was built from their knowledge level about food safety.

There were many experts who have already discussed the perspective of the consumer toward food safety. Some researchers studied about consumer's confidence about food safety (Smith & Riethmuller, 1999; Jonge et al., 2004). MacLaurin, MacLaurin, & Loi (2000) Examined the perception and attitude of international air travellers about the importance of food safety, while Hartwell & Edwards (2001) studied the consumer opinion and the food safety of two hospital food service systems so that they could compare them. Andrew J. Knight, Worosz, & Todd (2007) also studied about consumer perceptions of food safety but in restaurants, they found that many consumers believe that restaurants were doing a good job, they were capable, and committed to food safety. Later on their other works, A. J. Knight, Worosz, & Todd (2009) also investigated whether perceptions about food safety were related to how often consumers eat at restaurants. The results indicated that perceptions of food safety influenced how often consumers eat at restaurants. Other experts who studied about consumer perception of food safety were Anderson, Verrill, & Sahyoun (2011), they compared about food safety perception between older and younger adult.

Miles et al., (2004) discussed about consumer's concern about food issues, they found that people were more worried about technological food hazards compared to lifestyle hazards. Buchler et al. (2010) also stated in their study that overall people were more concern about modern risk more than about traditional risk. They explained that modern risk in food safety are related to food additives and regulation, and traditional risk is more about food contamination. There were also researchers who studied about consumer attitude and knowledge about food safety, the results were many consumers still

lack on implementing food hygiene practice/ food safety behaviour (Worsfold & Griffith, 1997; Hudson & Hartwell, 2002; Clayton, Griffith, & Price, 2003; Redmond & Griffith, 2005) and lack of knowledge about food safety (Redmond & Griffith, 2005; Todt, Muñoz, González, Ponce, & Estévez, 2009). Talas, Ucar, & Ozcelik (2010) found that food safety attitude related to the educational level of the women, the score of food safety attitude increased with educational level, this is proved that education is really important.

2 LITERATURE REVIEW

Food safety could be achieved by performing good food handling practice, it also related to employee behaviour when they process the food. Any unhygienic behaviour when handling the food could contaminate it and causes foodborne disease (Nik Husain et al., 2016). When food that is intended for consumption has contaminated by microbiology and doesn't get any further treatment, it becomes high-risk foods (Hartwell and Edwards, 2001).

"Food hygiene is the creation and maintenance of healthful or hygienic conditions" (Amjadi and Hussain, 2005). Food hygiene standard becomes something really important since early of the 20th century, it was emerging in the post war-era when scientists and bureaucrats involved to eliminate threats to the food supply (Ramsingh, 2014). Good hygiene can be achieved by correct storage, hygienic preparation, thorough cooking and ensuring that high-risk foods are not kept in ambient conditions (Hartwell and Edwards, 2001). Clayton et al. (2003) in their study found that consumers believe preventing stage is the most important phase to keep food safe, three actions in this stage that considerably important are "hand washing", "cleaning", and "using different utensils", continued with cooking thoroughly, storing foods correctly. Followed by keeping raw and cooked foods separately, keeping foods covered, checking foods have not gone off, and keeping foods at the correct temperature. Amjadi & Hussain (2005) also stated that to achieve successful food hygiene system must consist these components: (1) maintain food in safe condition from purchasing until it is served to the customer, (2) developing hygienic behaviour in the employees who have contact with food, (3) maintain clean and sanitary facilities, and (4) apply adequate pest control management system. In general, Amjadi & Hussain (2005) compile those components into four factors which are: food, people, facilities and vermin. Taylor

et al. (2015) also explained the food safety culture excellence model that consists of people, process, purpose and proactivity.

There is one well-known method to ensure food is safe to be consumed. That method is Hazard Analysis and Critical Control Point (HACCP) Payne-Palacio and Theis (2009: 82) explained that this is a systematically approach of program and inspection to identify hazard which can be a potential of arising illness from food and using procedure base on science to eliminate and control the hazard.

The responsibility to maintain food safety is not only on the food handler or food service industry, but also on the government. Wilson et al. (2015) in their study stated that food regulators have a key role in communicating information to the consumer that could be done in two ways, proactive and reactive communication. In that study, the consumer said that they do not have a good understanding about food regulation. Elizabeth & Griffith (2006) also said that public has perception that local authorities should provide food safety information for consumers. It has to be effective, directly targeted to the community, so they can understand and apply food safety practice.

3 METHODS

This study is a descriptive study and data were collected through questionnaire. Questionnaires were distributed to 300 respondents who bought and consumed food from the street food vendor in Bandung which is a City located in West Java Province - Indonesia. They were distributed in three areas in Bandung which street food vendors were concentrated, those are Geger Kalong, Dipati Ukur and Cihampelas.

Generally, the items in the questionnaire were classified into six categories of total 66 questions, they were questioning about: (1) personal hygiene, (2) purchasing and receiving, (3) storing, (4) production, (5) cleaning and sanitation, and also (6) HACCP and regulation. The items about personal hygiene, storing, production, cleaning and sanitation were inspired by the explanation from Gisslen (2011), while the items about purchasing and receiving were adopted from Walker (2014), those experts explained about all good practices in those activities. The questions about HACCP and regulation only contain two questions of well the customers know about HACCP and the regulation in Indonesia.

All of the items were using the 5-point scale (5 = 'Know very well', 4 = 'know', 3 = 'quite know', 2 = 'lack of knowledge', 1 = 'know nothing'). After

respondent answered the questionnaires, then the data were processed so the average scores of each dimensions appears. The average answers from respondent then converted into the five classification that is shown on Table 1.

Table 1: Classification of Average Score.

Range	Classification
4,20 – 5,00	Know very well
3,40 – 4,19	Know
2,60 – 3,39	Quite Know
1,80 – 2,59	Lack of Knowledge
1,00 – 1,79	Know nothing

4 RESULTS AND DISCUSSION

Customer may not involve in producing food but they should know how to produce food safely, so they can assess and choose the right street food vendors based on how they handle the food. This table shows the recapitulation of respondent's answers about their knowledge of food safety. The level of knowledge was decided based on classification in Table 1.

Table 2: Recapitulation of Consumer's Food Safety Knowledge.

No	Dimensions	Average Answer	Level of knowledge
1	Personal hygiene	3,78	Know
2	Purchasing and receiving food	3,58	Know
3	Storing food	3,42	Know
4	Producing food	3,45	Know
5	Cleaning and sanitation	3,36	Quite know
6	HACCP & Regulation	2,16	Lack of knowledge
		3,47	Know

Based on Table 2 Recapitulation of Consumer's Food Safety Knowledge, the highest average answer is about the personal hygiene of food handler. Customers were certainly very concerned about the personal hygiene of food handler, because it is one of the characteristics that are easily visible to them. While assessing the food handler's hygiene, they also build the perception about the food hygiene and sometimes relate it one another. It got the highest score because basically everybody has already tried to practice good personal hygiene in their life, especially when preparing food.

The lowest score of customer's knowledge about food safety was about how to clean and sanitize the area of food production including its equipment and also about HACCP and the regulation. As a customer, it was very reasonable if they did not know about HACCP, since it is one of the complex procedure to minimize food contamination. But the customer should know more about the regulation and especially about cleaning and sanitation. They need to understand the regulation because this is one way to protect themselves from anything that street food vendors give that will become a disadvantage for them. They also need to improve their knowledge of how to clean and sanitize the area of food production and its equipment because these are the activities that most of them will actually do it almost every day.

From questions related personal hygiene, most of the average answers were the customer already 'know' of how food handler should apply their personal hygiene. The only two questions that only got average answers 'quite know' were about: 1) food handler should not use a ring, earrings, wristwatch, bracelet or piercing, and 2) food handler should not touch their face, eyes, hair and arm frequently. Customer's highest average score about food handler's personal hygiene were the worker have to wash their hands after they used the toilet and they have to close their mouth and nose when they cough and sneeze.

The customer's highest knowledge about purchasing and receiving was that raw material should be bought and received in clean condition. The Customer only 'quite know' that the temperature of raw material which was bought in cold condition should be checked and all material that has been bought should be marked by its receive date so food handlers know when the food will be spoil.

From the dimension of storing food, there were several average answers which only were classified in 'quite know', some of those were: 1) The temperature of storing food in cold and freeze condition, 2) Food should not be put touching the wall 3) Food should be wrap when stored in refrigerator but give some air circulation.

In producing food, some of the question that only got average answer 'quite know' were: 1) Do not place anything on the cutting board, except raw materials, knives and equipment used on the cutting board, 2) The perishable food should not be stored outside the refrigerator, 3) Limit the amount of time where food / raw materials are in danger zone temperatures, 4) Obey the four hours' rule, 5) Tasting the food properly, 6) Boil the sauces, soups and vegetables before serving, 7) Cooling food properly.

Customer highest average score about the production was that they have to use clean raw materials.

Some questions that still in the level 'quite know' about cleaning and sanitizing were: 1) Use metal trash cans, 2) How washing the dishes properly, 3) How to wash kitchen equipment properly, 4) How to clean the kitchen area properly (using soap and clean cloth, then rinse and let it dry naturally), 5) Use insect-proof net on every air circulation in the kitchen, 6) Always closed the kitchen door, 7) There should be no hole in the kitchen floor and wall, 8) There should be no corner that can be used by insect or pest to hide.

5 CONCLUSIONS

There was no single question which got the average score that could be classified as 'know very well'. Overall Customers of street food vendors in Bandung 'know' how to apply food safety practices that should be done by the food handlers. Though their level of knowledge has to be improved, this could be seen in the discussion that there were still many questions about good food handling practices that only got the classification of 'quite know'. The role of government is really needed so the community could be more aware and more knowledgeable about food safety practices and also regulations related to it. Government need to be more active in socialize all of that information. Furthermore, when the customer's food safety knowledge is really good, they could be an agent/ partner for government to take part in assessing street food vendors food safety practices.

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