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Consumer perspectives on food safety in supply chain for Small and Medium Enterprises (SMEs) product

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Abstract This study aims to determine consumer perceptions of the level of importance of food safety aspects. Especially in the process of selecting/ buying food. The study was conducted using a questionnaire consisting of two parts. The first part is a questionnaire to find out the identity of the respondent, second questionnaire to determine the level of importance of food safety by consumers. Questionnaire consists of seven questions. The questionnaires were distributed online in February 2019. Data processing was carried out using descriptive statistics. This study consisted of 208 respondents from men (41%) and women (59%). The results showed that 75.6% of respondents rated food safety aspects as very important to food quality. Most of the respondents (75.5%) considered it very important to know the elements contained in food. While there are 65% of respondents rate it is very important to know that food is produced by good producers. In terms of distribution, there were 56.2% of respondents judging it was very important that food should be distributed in good transportation to ensure food safety. In the sales system, 57.1% of respondents are considered very important to pay attention to food safety aspects in the sales process. And, for the certification aspect, there are 48.1% of respondents. It is important that food safety certification is a guarantee that the food is safe and consumed legally.

Keywords: food safety, consumer, supply chain, SMEs, product

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Conflict of Interest Statement: The author [s] declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Introduction

Human health is an important element for the development of a nation. One important aspect of food is food safety. Unsafe food will have a negative impact on the body, namely poisoning or

death. Usually, the level of cleanliness in food shows the quality of food so that poor sanitation conditions are one source of food poisoning *Mutalib et al. (2015)*. Basically, food poisoning caused by microorganisms, including *Clostridium botulinum*, *Clostridium perfringens*, *Staphylococcus aureus* and *Bacillus cereus* *Milaciu et al. (2016)*. The toxic content in food affects the function of organs, such as the disruption of the central nervous system, kidneys, liver and reproductive system *Jean et al. (2018)*. Food poisoning caused by unsafe food consumption also affects the morbidity and mortality and socio-economic growth of the country *New et al. (2017)*.

Food contamination has a negative impact on the company and its supply chain *Chebolu-Subramanian and Gaukler (2015)*. The negative impact can be eliminated if the company pays attention to the food safety aspect in its supply chain. Food contamination, especially by viruses can occur anywhere in the supply chain *Miranda and Schaffner (2018)*. This is important because food contamination can be sourced from suppliers, manufacturing processes, or distribution. Especially in the food supply chain in SMEs. In Indonesia, the SMEs in the food sector has an important role to play in economic growth. Because it has a significant influence on the world economy and has a complex supply chain in accordance with the frequency of consumption in the community *Turi et al. (2014)*. However, food SMEs have not been able to compete in the global market because often Indonesian food products are rejected in the export market on the grounds of a food safety system. BPOM data in 2011, 2012 and 2013 states that food poisoning in Indonesia is dominated by food produced by home industries (39%), food service industry (20%), snack industry (21%) and processed food industry (13%) and Food poisoning is dominated by microbiological agents (46%) and chemical agents (18%). This condition encourages every SMEs to implement food safety in the supply chain. Because food that is safe for consumption can increase the competitiveness of export products *Wahyuni et al. (2018)*.

For this reason, consumers need to understand food safety in choosing foods to consume. This understanding is needed so that the food chosen is food that is safe for consumption, not contaminated with viruses, bacteria, and others. Previous research conducted by Liu et al, on consumer perceptions shows that food safety is an important aspect that consumers pay attention to in choosing food in restaurants *Liu and Lee (2017)*. Food safety aspects that are the main concern in this study are employee nail hygiene, uniform cleanliness or protective clothing, and gloves used to hold food. Research on consumer perceptions of food safety was also carried out by Neal et al. on fresh products *Yu et al. (2018)*. The results showed that consumers perceived that fresh products did not contain pathogens, and were willing to pay more to reduce food safety risks. The research reveals the perspective of consumers from one aspect of the supply chain. In fact, food contamination can occur in all supply chain actors. For this reason, this study aims to identify consumer perceptions about food safety in the supply chain.

Research methodology

This research was conducted using a questionnaire distributed online (google form). The scope developed in the questionnaire refers to the results of interviews with consumers carried out in the previous stage. The research variables and supply chain scope used in this study include raw material

suppliers, production processes, distribution systems, and sales systems. This study also adds a variable in quality, food content, and availability of food safety certification.

The questionnaire was prepared using a Likert scale consisting of strongly disagree (1), disagree (2), agree (3) and strongly agree (4). The distribution of questionnaires was conducted in February 2019 in

East Java, Indonesia in 208 respondents. Furthermore, the collected data will be processed using descriptive statistics. In this section, the descriptive statistics are carried out by classifying the data according to the scale used.

Results

Identity of respondents

The questionnaire was distributed to respondents with the following characteristics:

Table 1. Identity of Respondent

Variable	Percentage (%)
Gender Male	41
Gender Female	59
Type of Work Entrepreneur	45
Type of Work Government	20
Type of Work Private employee	35
Education High school	5
Education Bachelor	95
Residence East Java	80
Residence Outside of East java	20

Table 1 shows the profile of respondents' characteristics grouped into 4 variables: gender, type of work, education, and location. The results showed that most of the respondents were female, worked as entrepreneurs, had undergraduate education and lived in the East Java province.

Table 2. Descriptive statistics on consumer perceptions of food safety

Aspect	Consumer Perceptions (%)			
	Very important	Important	Not important	Very unimportant
Food safety aspects related to food quality	75.6	24.6	0	0
The food contains elements that are not harmful to human health.	75.5	24,5	0	0
Food is produced through a good manufacturing process	65	30	5	0
Food is sent through a distribution process that is guaranteed to be clean	56,2	30.6	13.2	0
Food safety aspects in the sales process	57.1	37	5.9	0
Food safety certification is a guarantee that the food is safe and lawfully consumed	48.1	50	1.9	0

Table 2 show the consumer perspective on food safety in the supply chain is shown by indicators: relations with quality, food content, good manufacturing processes, clean distribution systems, clean marketing, and food certification. The results of the study indicate that most respondents answered important and very important for these indicators.

Food safety food will be guaranteed if the supply chain is maintained from contamination. This condition can be realized through the selection of raw materials, production processes, distribution systems, and a good marketing system. This is important to do because contamination can occur in all aspects of the supply chain. For example, well-processed chicken meat can be contaminated if sent by means of transportation without cold storage. In some companies, to show this is done through food certification.

Conclusion

This study discusses consumer perceptions of food safety in the food supply chain. This is supported because food contamination can be sourced from various aspects of the supply chain. Consumers assume that food safety has an important role in the quality of food. For this reason, the content of food, food manufacturing processes, distribution systems, and a good marketing system encourages the realization of food safety in the supply chain. Food security has fulfilled the element of food safety through the food safety certification process.

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