

# Food Company Manager's Perspective for Food Safety and Halal : Exploratory Study

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## Abstract

Food safety and halal food is important aspect of the food industry. Food safety affects health and food security while halal food complements Islamic law. In the last few years, in various countries, there have been many cases that indicated a lack of awareness when implementing food safety and halal food in food processing companies which in company losses. The purpose of this study is to determine the manager's perspective regarding awareness and implementation of food safety and halal food related to company performance. Case studies were conducted on two food processing companies using a semi-structural questionnaire method. The results of this study indicate that both companies have a high awareness of aspects of food safety and halal food. Food safety implementation is carried out based on international standards (HACCP, GMP, and ISO 22000). Halal food implementation is carried out according to the national standard (Halal Assurance System). Although there are differences in priorities between the two companies regarding food safety and halal, both companies will say that food safety and halal affect performance.

## Keywords

Food industry, Food safety, Halal food, Firm performance, Exploratory study

## 1. Introduction

The food industry is one of the industrial sectors that significantly contributes to agricultural countries' economic development. The world bank states that agrarian countries experienced increased food production from 2009 to 2018, including Indonesia (17.78% increase), Thailand (10.22% increase), Malaysia (28.19% increase), Myanmar (6.84% increase), Vietnam (23.24% increase, and Cambodia (26.72% increase) (World Bank, 2018). This increase is understandable, as food is one of the basic human needs (Marzuki et al., 2012), and is directly associated with population growth (Figure 1) (World Bank, 2021).

Today's consumers have a range of factors in purchasing food products, in addition to base on their function as a basic need. These factors may range from social status, comfort, moral attitude, mood, ethical values to religious belief (Imtiyaz and Soni, 2021). Some religions like Hinduism, Christianity, and Islam are known to have several rules regarding food (Ab Talib et al., 2018; Giyanti et al., 2020). In the food processing industry, the term "halal" has become the global symbol of safety and health guarantee (Haleem et al., 2020). It is also said by Golnaz et al., (2010) the concept of food safety and halal food is an important factor in determining consumers purchase decisions. Therefore, issues on food safety and halal food should be adequately addressed by food processing companies.

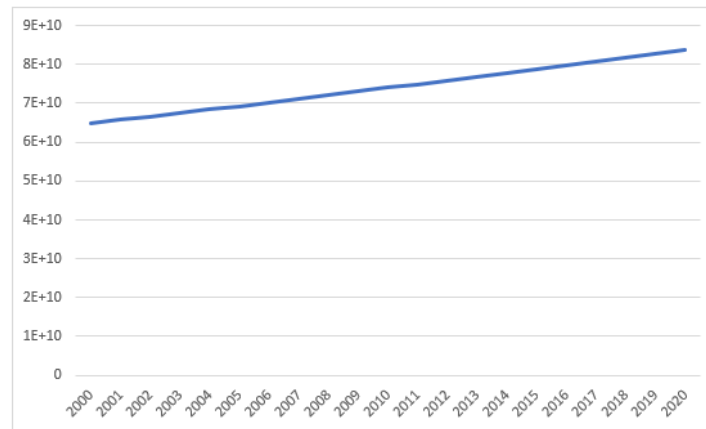


Figure 1. Population Increase

Some issues on awareness and implementation of food safety and halal food are recently reported in various countries. Some cases that draw public attention include the horsemeat scandal in England (2013), melamine-contaminated milk and other dairy products in Italy (2015), pork DNA in halal chicken sausages in Spain (2016), different animal contents in candy products (Ali and Suleiman, 2018) and pork DNA in Cadbury Dairy Milk products in Malaysia in 2014 (Tieman, 2019). In the Cadbury case, the company lost its consumer trust and reputation from halal perspectives. Cadbury was sued RM 100 million in this pork DNA case. Due to this problem, the company was reported to lose \$37 million from international sales in ten days (Tieman, 2019; Yu and Chan, 2020).

Previous studies have discussed food safety and halal food awareness separately from consumers' lenses. Food safety awareness is associated with the safety of food products (Badrie et al., 2006) especially in dairy products (Thapa et al., 2020). Other studies examine the relationship between halal awareness and purchase intention (Bashir, 2019; Bashir et al., 2019; Shaari et al., 2020). Arifin et al., (2021) and Bashir (2020) explain halal awareness which is associated with the purchase intention of non-muslim consumers. A previous study has reported a positive effect of halal implementation on company performance (Ab Talib et al., 2017). However, a comprehensive study on food safety and halal food regarding awareness, implementation, and company performance is still limited. The present study aims to figure out food processing company managers' awareness, implementation, and performance regarding food safety and halal food. This study is expected to answer the following research questions:

- What is food safety and halal food awareness in food processing company ?
- How are food safety and halal food implemented in food processing company?
- How are food safety and halal food awareness and implementation associated with the company performance?

## 2. Research Design

This study is categorized as an exploratory multiple case study. A case study allows a systematic perspective to be adopted in different decision configurations in fields covered by a study (Saccani et al., 2007). The companies involved in this study were located in Indonesia, a country with the world's largest Muslim population. These companies were selected using the purposive sampling technique. The case was taken from the food industry that has implemented food safety and halal food. Panelists involved in this study were managers of food processing companies who have been working in their current positions for more than five years. A minimum of five years of experience was set as a criterion to ensure that the panelists already have an in-depth understanding of their companies' conditions. Pseudonyms were used to ensure the companies and panelists' anonymity..

### 2.1 Instrument Preparation Process

The data in this study were collected through semi-structured interviews, questionnaires, and secondary sources analysis (e.g., company documents and company websites). Questions during the interview were adopted from previous literature, displayed in Table 1.

Table 1. Interview Instruments

Aspect	Source	Question
Company profile		<ol style="list-style-type: none"> <li>1. What year was it founded?</li> <li>2. What products are produced?</li> <li>3. Where are the products marketed?</li> <li>4. What is the total workforce?</li> <li>5. Position of panelist?</li> <li>6. Area of expertise?</li> <li>7. How long have you worked?</li> <li>8. What is the last type of education?</li> </ol>
Food Safety and Halal Food Awareness	(Gunawan et al., 2017), (Golnaz et al., 2010)	What type of food safety and halal food certification is used? (Q1) How far is consumer awareness about food safety and halal food? (Q2) How far is the company's responsibility towards food safety and halal food? (Q3) Have you had any food safety and halal food incidents? (Q4)
Food Safety and Halal Food Implementation	(Azmi et al., 2018), (Din and Daud, 2014), (Indrasari et al., 2020), (Ismail and Kuivalainen, 2015)	How is the company's readiness in implementing food safety and halal food in the company (Process management, training and Education)? (Q5) What is the understanding of food safety and halal food in the company (Top Management, employee and Supplier)? (Q6) How is the food safety and halal food integrity system in the company (technology)? (Q7)
Firm Performance	(Bigliardi and Bottani, 2010), (Harwati and Permana, 2017), (Neely et al., 2000)	Does the implementation of food safety and halal food affect the company's performance? (Q8) Are there any priority indicators in measuring company performance? (Q9)

## 2.2 Data Collection Process

Interviews were conducted with Quality Control and Quality Assurance (QC-QA) managers to depict their awareness and implementation of food safety and halal food and their effect on the company performance. Two cases were selected, the first case was from a poultry slaughterhouse, and the second was from a snack company. The data were collected from October to December 2021. The interviews were conducted face-to-face for approximately one hour in each session.

## 3. Case Finding

This section depicts the profile of each company (Table 2) to show the condition of the companies involved in this study. Food safety and halal food awareness were first described to explore each company's food safety and halal food awareness. This study aimed to find out how food safety and halal food aspects (i.e., preparedness, understanding, and technology) are implemented in each case. Meanwhile, the company's performance was also discussed to see if food safety and halal food awareness may affect the company's performance. This study also identifies the key indicator used to measure the company performance.

### 3.1 Profile of Case Studies

#### Case 1

The first company participating in this study is a 13 years-old company with 600 employees. The main product of this company is fresh poultry meat, having an established market in many regions in Indonesia. The product can be sold for retail purposes or as the raw material for poultry-based food processing companies.

This company was committed to food safety and halal food. Although it has not obtained a Food safety certificate, it has implemented food safety based on Good Manufacturing Practice (GMP) and Hazard Analysis Critical Control Point (HACCP). It has obtained MUI's halal certificate since 2008.

#### Case 2

The second company was established 24 years ago. It currently has 2457 employees. It has several snack products (e.g., wafers, cookies, and crackers) that have been sold in Indonesia and other countries. Its products were end-consumer products distributed through general trade, modern trade, and institutions.

This company has committed to food safety and halal food, proven by Its ISO 22000 certification since 2008 and MUI halal certification since 2016. Due to its international market, the company was also Authorized Economic Operator (AEO) certified in 2018 to accelerate the custom process.

Table 2. Research sample

	Case 1	Case 2
Company Profile		
Year of Establishment	2008	1997
Types of products	Fresh poultry meat	Biscuits
Market	National	National and International (26 Countries)
Number of Products	± 25	± 31
Product Distribution	Centered	Centered
The type of company	Subsidiary	Subsidiary
Total manpower	600	2457
Respondent Profile		
Panelist Position	Manager QA-QC	Sec Head QA-QC
Length of work	5 Years	12 Years
Last education	S1	D3

### 3.2 Food Safety and Halal Food Awareness

#### 1. Types of food safety and halal food certification

**Case 1** “ *Regarding food safety, this company implements food safety based on Good Manufacturing Practice (GMP) and Hazard Analysis Critical Control Point (HACCP). We also use Veterinary Control Number issued by the Provincial Livestock Office. We also have Halal Food Certification by implementing halal assurance system*”.

**Case 2** “*Our company’s certification regarding food safety is ISO 22000 and Halal Certification from LPPOM MUI by implementing halal assurance system*”.

#### 2. Consumer awareness of food safety and halal food

**Case 1** "Regarding food safety, though there is no certificate, our customers still demands at least the implementation of food safety standard. However, halal certification is a must."

**Case 2** "Our consumers are highly aware of food safety and halal food, so we have been food safety certified. Moreover, the government regulation requires us to have food safety and halal food certificates."

#### 3. Company responsibility for food safety and halal food

**Case 1** "Our company have implemented the food safety and halal food based on GMP and HACCP and have passed the halal food certification."

**Case 2** "Food safety and halal food are important for our company. Our commitment to these aspects is shown by our ISO 22000 and Halal Assurance System Certifications. Our company is also audited annually and participates in recertification every five years. Our company also implements food safety and halal food aspects in the company policy."

#### 4. Food safety and halal food incidents

**Case 1** "Our company have never experienced accidents related to halal food aspects. However, the most frequently found incidents regarding food safety were the contamination of foreign objects (e.g. screw, gravel) during the production process. The largest incident when the product was in the customers' hands was related to the presence of unexpected chemical reactions. Due to this incident, one container was returned."

**Case 2** "Our company never experiences incidents related to halal food aspects. Regarding food safety aspect, the incident is related to the presence of contaminants like metal, wood flakes, or thread."

### 3.3 Food Safety and Halal Food Implementation

#### 1. Company’s preparedness in implementing food safety and halal food in the company

**Case 1** “ We have a management-level employee training program held twice a year regarding ISO 9001, GMP, product specification, and halal assurance system. This is done to improve our human resources’ knowledge.”

**Case 2** “ Our company make sure that the raw materials, production process, and packaging process are done based on the procedure. Regarding the raw materials, we make sure that our suppliers have been halal-certified and have the halal logo. Meanwhile, the production process is closely related to quality control and HACCP. Our workers’ readiness is assured through a briefing at the beginning of each work. This is done to internalize the work culture to the employee. Training our companies have participated in include Halal Assurance System and ISO 9001. The training is organized by external institutions for grade-3 or higher employees. The education is done through the in-class method for new employees and annual knowledge refresh for senior employees. In addition, our company also

performs evaluation process, make posters and banners, and has employee competition to improve their food safety and halal food awareness.”

## 2. Food safety and halal food Understanding

**Case 1** “ Our understanding of product standard has been internalized to the supervisor or higher-level employees.

**Case 2** “ Our company has already had a PIC team regarding food safety and halal food. This team, consisting of operational management or higher-level employees, serves as the company’s internal training team and conducts internal audits of halal assurance system, ISO 9001, and ISO 22000. *The level starts from the operational management level.*”

## 3. Food safety and halal food integrity system

**Case 1** “ Our company currently uses technology for tracing, allowing us to store the company data regarding production record, stocks, and production date. We have not had technology like metal detectors for the production process. The checking is still done manually.”

**Case 2** “ In the production phase, our company uses several technologies like a metal detector and magnet trap to control CCP.”

### a. Performance Measurement

#### 1. The Effect of Food Safety and Halal Food Implementation on Company Performance

**Case 1** “ Our company performance is measured based on the quality achievement of each division. The food safety aspect greatly affects our company performance because food safety implementation significantly influences the division’s quality achievement. The halal food aspect focuses on several processes, including the slaughtering and storing processes.”

**Case 2** “ Our company is established in Indonesia with the majority of the Muslim population, so our target market is mainly Muslims. Consumers need a guarantee of halal and safe products, so food safety certificate and halal logo significantly affect product sales performance.”

#### 2. Priority indicators in measuring company performance

**Case 1** “Since we are a manufacturing-based company, the core departments are production and QA-QC. The priority lies in Reject Rejection, Return and Product Complain. Other departments can be considered supporting departments.”

**Case 2** “ The main priority to measure the company performance is financial indicator (50%), while the other 20% is the learning process, consumer, adherence, and discipline.”

## 4. Discussion

Cross case analysis was made to identify the main difference and common behavior among companies (Saccani et al., 2007). Three aspects were analyzed, including awareness (Table 3), implementation (Table 4), and company performance (Table 5).

Table 3. Cross case analysis by Awareness

Attribute		Case 1	Case 2
What type of food safety and halal food certification is used? (Q1)	Food safety certification	National (Animal Husbandry department)	International (ISO 22.000)
	Halal certification	National (BPJPH)	National (BPJPH)
How far is consumer awareness about food safety and halal food? (Q2)	B2B /end customer (%)	70% B2B, 30% end customer	100% B2B
	Mandatory end customer / Government regulation	Both of them	Both of them
	Market	Domestic market	Domestic and foreign market
How far is the company's responsibility towards food safety and halal food? (Q3)	Internal / External Auditor	Both of them	Both of them
Have you had any food safety and halal food incidents? (Q4)	Scope	Food safety: Internal (production department) and External (Customer)	Food safety: Internal (production department)
	Prevention	Manual	Machine

The finding shows that both companies are aware of food safety and halal food, proven by food safety and halal food certificates due to consumer demands and government regulation. However, there is a difference regarding the food safety certification. While company 1 uses only national standard food safety, company 2 uses international certification. Being certified is the minimum requirement of both companies' consumers. The companies are responsible for establishing an internal auditor and inviting external auditors to audit the food safety and halal food aspects. There is no incident related to halal food incidents since both companies are halal-certified. However, these companies have different food safety incidents. The first company experienced the food safety incident after the consumers receive their products. This probably occurred because the handling is still done manually. In the second company, such an incident can be minimized since the control process is assisted by technology.

Table 4. Cross case Analysis by Implementation

Attribute		Case 1	Case 2
How is the company's readiness in implementing food safety and halal food in the company? (Q5)	The supplier has a food safety and halal certificate	No	Yes
	Training Institute	Internal and External	Internal and External
What is the understanding of food safety and halal food in the company? (Q6)	Top Management	Yes	Yes
	Employee	Yes	Yes
	Supplier	No	Yes
	Distributor	Yes	Yes
How is the food safety and halal food integrity system in the company? (Q7)	Technology used	No	Yes

The implementation of food safety and halal food can be seen from the company's preparedness, understanding, and system integration. Safety food implementation still serves as a hindrance in developing countries (Trienekens and Zuurbier, 2008). In case 1, the hindrance is still found both in the internal and external aspects of the company. Regarding the internal aspect, the company has not had an integrated technology, while regarding the external aspect, the company's suppliers have not had food safety and halal food management systems.

Table 5. Cross case Analysis by Firm performance

Attribute		Case 1	Case 2
Does awareness and implementation of food safety and halal food affect the company's performance? (Q8)	Operational	Food Safety : Yes Halal Food : Yes	Food Safety : Yes Halal Food : Yes
	Finance	Food Safety : Yes Halal Food : Yes	Food Safety : Yes Halal Food : Yes
	Market share	Food Safety : Yes Halal Food : Yes	Food Safety : Yes Halal Food : Yes
Are there any priority indicators in measuring company performance? (Q9)	Priority dimension	Production	Finance

According Tessmann (2021), companies with food safety standards are directly related to the end-user. The standard is not only viewed as a financial benefit but also an opportunity to collaboratively improve the product quality. The awareness and implementation of food safety and halal food are important as they are related to operating, financial, and market performance. They are closely associated with the company performance. However, both companies in this study had not involved food safety and halal food in the priority indicator of performance measurement.

## 5. Conclusion

In this study, both food processing companies are aware of food safety and halal food aspects. This awareness is shown by the food safety and halal food certification, which influence the frequency of food safety and halal food incidents. Food safety and halal food aspects implementation is also supported by the company's internal factors. The use of technology serves as an aspect leading to differences in these two cases. It was found that the use of technology is helpful to minimize food safety incidents. Food processing companies in this study view food safety and halal food awareness and implementation as important aspects that significantly affect the company's operation, financial, and market performance. It is necessary to have a performance indicator that represents the success of food safety and halal food when measuring the company performance. Future studies are recommended to identify the performance measurement indicator in food processing companies regarding food safety and halal food using literature review,

Delphi method, and Focus Group Discussion.

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