Integration of Halal Assurance System (HAS) in the Integrated Management System (IMS) to support food industry performance: a review

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Abstract. Halal products are in great demand by consumers all over the world. The implementation of the Halal Assurance System (HAS) in the food industry is expected to increase consumer confidence and company performance. Generally, the continuous application of the Integrated Management System (IMS) which consists of a quality management system, a safety management system, and an environmental management system is proven to improve business performance. The application of HAS in the food industry are rarely integrated with other management systems. This paper discusses the internal and external constraints and challenges of companies in implementing HAS in IMS. The IMS application affects company performance in productivity, quality, safety, financial, and decreasing risks. Opportunities for HAS integration in IMS are examined in more detail.

1. Introduction
Nowadays, halal products are expanding massively due to the increasing Muslim population in the world. The halal food industry dominates the global share market by 16% [1]. Indonesia, a country with the largest Muslim population in the world, has excellent potential to become a centre of halal product manufacturing [2]. Halal products are achieved through halal certification. The halal certification of products increases consumer confidence, improves company performance and profits. The industry can get the halal certification only through implementing Halal Assurance System (HAS).

Improving company performance can be done by implementing an Integrated Management System (IMS). Initially, IMS was carried out because managers felt that several management systems had the same philosophical basis that adopts the Plan, Do, Check, Act (PDCA) cycle. Several companies implemented IMS, including ISO 9001, ISO 14001, OHSAS 18001, and ISO 22000. If IMS was carried out continuously, the company's performance is getting better [3]. The concept of IMS arises because the management's incentive to identify company problems, synergize the compatible elements of the applied system, and help organizations manage them according to standards [4].
The integration can be done if the system shared the same principal. In general, the clauses in the HAS are based on Total Quality Management (TQM), so the document preparation can be prepared at the same time. This article discusses the benefits of the Integrated Management System (IMS), Halal Assurance System (HAS) in food companies, and the opportunities for HAS integration into IMS.

2. Methods
This paper is written using a systematic review method. A systematic review is an approach method that serves to capture and select perspectives and relevant theoretical practices in leading literature in a structured and comprehensive manner [5]. According to the theme, the collection of articles is carried out from several leading journal publications such as Elsevier, Springer, and Emerald Insight. The keywords used in the search for related journals were "integrated management system," "halal," "halal assurance system," "business performance," and "food industry performance." A hundred of the journals using those keywords were examined. The papers which focus on the agro-industrial field were preferred. In the end, thirty-nine papers were selected.

3. Discussion

3.1 The concept of IMS
Integrated management system (IMS) is a set of systems that are planned, implemented, continuously revised, and upgraded to meet the management system [6]. IMS arises because the company needs to guarantee that the management runs effectively and efficiently [7]. The IMS is defined as the process of co-arranging the different management system functions into a unity. The application of IMS can be integrated with several management systems in companies, such as quality management, work safety management, and environmental management [8]. Several other management systems, such as the Halal Assurance System (HAS) can also be integrated into the IMS.

IMS's application provides internal benefits such as improving company performance, improving human resource performance, reducing documentation, reducing costs, and a more organized management system. Indicators of the IMS external benefits are market, stakeholders, and audit [9]. Barriers to implementing IMS consist of the diversity of IMS constituents, worker disagreements, limited resources, difficulties faced after integration, and cultural aspects [10]. IMS can be applied in the small-scale food industry and influenced by internal factors such as organizational culture and top management commitment [11]. The concept of implementing IMS is shown in Figure 1.

![Figure 1. The integrated management system concept.](image-url)
Figure 1 shows that four management systems are integrated and work together as IMS. Each of these management systems has its benefits. HAS integration in IMS will give some benefits such as internal and external benefits. Internal benefits consist of cost reduction, document efficiency and production benefits. The external benefits consist of good relations with the government and minimize the finding in third party audits. If these management systems work together as IMS, it will increase the performance of the food industry.

3.1.1. Quality management system
Quality management systems that often used in the food industry are Hazard Analytical Critical Control Point (HACCP), ISO series, Approved Quality Assurance (AQA), Good Manufacturing Practices (GMP), and Food Safety Management System (FSMS) [12], British Retail Consortium (BRC), and International Featured Standard (IFS) food standards. The implementation of ISO 9001 provides some benefits for companies such as operational and financial benefits [9]. Identification of all potential hazards, risk assessment, and hazard control in the production can be made using HACCP [13, 14].

3.1.2 Occupational and health system
Occupational health and safety are a critical aspect of company operations to run well and affect productivity and efficiency. Many industries apply Occupational Health and Safety Management Systems (OHSMS) to control employee health and safety [15]. The implementation of OHSMS in the industry initially refers to OHSAS 18001: 2007 and has been updated to ISO 45001: 2018. The application of OHSMS in the industry can save accident costs and increase employee work satisfaction. Cost savings could increase the level of competitiveness, profitability, and company productivity [16].

3.1.3 Environmental management system
The development of the Environmental Management System (EMS) began in 1986, when The World Trade Organization (WTO) conducted negotiations on minimizing trade costs. In 1992, the Rio Earth Summit was held, and it was committed to environmental quality. The main purpose of EMS is to organize activities and minimize the impact on the environment, so the company performance increases continuously [17]. ISO 14001 provides internal and external benefits which consist of marketing, business performance, and environmental performance benefits [9]. A study of certification and "green" labelling on the fish industry in Spain improves economic ratios and provides critical information on environmental decision making [18].

3.2 Integration of halal assurance system in IMS
The food industry needs the Halal Assurance System (HAS) to increase consumer confidence. HAS is the main guide for the industry to maintain the halal status of the product [19]. This procedure must be achieved to meet the halal standards desired by the market [20]. Halal certification is needed to protect consumers, ensure that producers fulfil moral obligations towards consumers, and facilitate halal trade regionally and globally [21]. The challenges are, such as counterfeiting of halal logos, confusing halal status, and contamination of a product [12], limited competent staff regarding halal issues, little information on halal in the mass media [22], and the combination of halal certification is still quite difficult to understand [23]. Halal certification in Indonesia uses HAS 23000 as guidance. In HAS 23000:1, 11 criteria are consisting of halal policy, halal management team, training and education, materials, products, production facilities, written procedures for critical activities, traceability, handling of products that do not meet the criteria, internal audit, and management review (HAS 23000: 1).

The challenges of HAS implementation in Malaysia consist of the limited number of halal auditors, differences in administration between JAKIM and JAIS [19]. In Indonesia, the obstacles and challenges are the limited authority of local stakeholders, insufficient budget, less competent resources, and inadequate infrastructure [25]. The benefits of implementing HAS in the industry are divided into internal and external benefits. Internal benefits consist of operational benefits, production benefits, human resource benefits, and financial benefits. Good relations with the government and enhancement
of company reputation are included in external benefits [2]. Halal certification in the food sector has some impacts on business performance, including operational and financial performance [26]. Research conducted by [27] describes the relationship between halal certification and business performance in the Philippines that involve 141 food industries. Based on this research, the halal certification has a significant impact on business performance in terms of innovation and finance.

HAS integration with the quality management system has been carried out in several industries. HAS was developed based on the concept of TQM, which includes dedication, consumer demand, improvement without increasing costs, and successful production of goods without correction, without rejects and inspections. Food safety is the basic principle of HACCP implementation and has similarities with "Tayyiban" in the HAS principle [28]. Tayyiban comes from Arabic, which means good or healthy [29]. Tayyiban is often interpreted as nutritious, safe, hygienic, and of good quality [30, 31]. Table 1 shows the opportunities and challenges of HAS integration into IMS.

| Opportunities | Description | Source |
|---------------|-------------|--------|
| Source        | Similarities in the basic concept of the Halal Assurance System (HAS) with HACCP and TQM | [28, 29, 32] |
| Challenges    | There is no international halal standard | [29] |
|               | Currently, halal standards are not needed by all countries such as food safety standards | |

Research conducted by [14], compiled an integrated halal system with HACCP. The basic principles of HACCP are used to determine the hazards and haram of a product called the Hazard and Haram Analysis Critical Control Point (HHACCP), can be seen in Figure 2. Based on this diagram, the process of determining the hazards and haram in a product can be done together, even though the determination of critical control points (CCPs) and halal critical control points (HCCPs) through different decision trees. HCCPs were determined based on the HAS 23000: 1 criteria number 7.

Figure 2. Halal Critical Control Points (HCCPs) integration into HACCP [14].
from the "khamr industry" should not be added in any amount to the production. Besides, the application of CL in a slaughterhouse can be applied in some processes, which consist of on-farm practices, welfare during transportation, immobilization to facilitate slaughtering, an act of slaughtering (shackling, stunning, cutting), bleeding time, washing and packaging. One of the CL recommendations given is the feeding time variable during the transportation process. The minimum limit is 8 hours, and the maximum limit is 12 hours. On the extraordinary process, CL is applied to the use of electricity for slaughtering [33].

3.3 Food industry performance
The company's strategic measure performance elements qualitatively and quantitatively are called performance measure system. Performance measurement indicators consist of financial, consumer perspective, internal-external business processes, and business growth [34]. The implementation of each management in the company provides better performance benefits. The management system integration improves the performance of the food industry, as shown in Table 2.

| Food industry sectors | Management integration | Integration benefits on performance | Source |
|-----------------------|------------------------|--------------------------------------|--------|
| Dairy product         | QMS Integration (ISO 9001:2008; ISO 22000:2005) | Ease of internal and external organizational communication | [11] |
| Chicken slaughterhouse| HAS and QMS (HACCP) integration | Build customer implementation and meet market requirements (halal, hygienic, and safe) | [13] |
| Fishery/seafood processing | QMS and EMS Integration (ISO 14001; ISO 2200; IFS 5) | Improved management systems, confidence in consumers, and competitive benefits | [35] |
| Tomato paste and chopped tomato | QMS and EMS Integration (ISO 9001; ISO 14000; BRC, IFS) | Reduce unnecessary documents, increase the efficiency and effectiveness of the organization | [36] |
| Biscuit               | QMS Integration (ISO 9001:2015; ISO 22000:2005, IFS Food 6, and BRC Food 7) | Simplify compliance with requirements in safety and quality management, process efficiency, increase the level of competition, and increase consumer confidence | [37] |
| Sugar and ethanol processing | QMS (ISO 9001) and EMS (ISO 14001) | Reduced manufacturing costs, financial benefits, and operational benefits | [38] |
| Seafood enterprises   | Hal-Q System (Halal, Assurance, and Liability Quality system) and QMS (HACCP) | More systemized and increase the confidence of halal safety and security | [39] |

Table 2 shows the integration of management systems in several companies and their benefits for increasing performance. The integration of HAS in IMS gives more benefits to the industry, such as a more systemized system, reduction cost, and increasing the level of confidence. There are a lot of papers discussing the integration of QMS with other management systems, yet the number of papers discussing HAS integration with other management systems is still lacking. Some of these papers discuss HAS integration with HACCP and should be improved in the future. The basic principle of the management system integration is the similarity of their clauses. In the future, relation and possibilities of integration HAS with other management systems such as ISO 9001, ISO 22000, BRC, and IFS can be examined.
The future research also can be conducted more detailed about barriers, challenges, effectiveness, and performance of HAS integration in IMS.

4. Conclusions
The implementation of an integrated management system (IMS) within the company provides internal and external benefits, which ultimately lead to improved company performance. Internal benefits include process efficiency, improved management quality, and organizational effectiveness. The company also gets external benefits, such as increased consumer confidence, competitive power, and extra company communication convenience. The Halal Assurance System (HAS) is a guide for industries to maintain a product's halal status according to the market requirement. The basic principle of HAS is similar to HACCP so that it can be implemented simultaneously. IMS implementation improved company performance, so future research can discuss HAS integration with other management systems on IMS and its effect on company performance in more detail.

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