



Integrating ISO 31000 and Maqāṣid al-Sharī'ah for Risk Governance in Hajj Pilgrims' Meal Services

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Abstract:

Background: Meal provision for Indonesian Hajj pilgrims, the world's largest national contingent (221,000 in 1447 H/2026 CE), is a large-scale, faith-based service governed by Sharia-based catering contracts, yet its risk management remains reactive. ISO 31000, as a secular-technical standard, cannot by itself capture the spiritual dimension of risk, namely halal integrity and the sanctity of worship.

Objective: This study evaluates ISO 31000-based risk management in Hajj meal provision during the 2026 operations and integrates it with *maqāṣid al-sharī'ah* (*ḥifẓ al-dīn*, *ḥifẓ al-nafs*, and *ḥifẓ al-māl*) to develop a Sharia-aligned risk governance model.

Methods: A qualitative-descriptive evaluative case study triangulates regulatory documents (KMHU No. 24/2025 and No. 43/2026), interviews and FGDs with PPIH personnel, catering partners, and an expert panel, and a likelihood–impact risk assessment.

Results/Findings: Risks concentrate in the distribution and serving stages, peaking in Armina. The extreme risks (distribution delays, deteriorating food quality, and menu and portion non-conformity; scores 20–25) threaten both *ḥifẓ al-nafs* and *ḥifẓ al-dīn*. Implementation maturity is moderate (3.2 of 5): identification and analysis are established, but treatment and monitoring remain reactive because caterer liability (*ḍamān*) is enforced after incidents rather than prevented contractually.

Contribution: This is the first study to integrate a global risk management standard with Islamic legal ethics in Hajj services. It offers a *Maqāṣid*-based risk register linking each ISO 31000 risk to the Sharia objective it threatens and to Sharia-based mitigation, reframes the organizer–caterer

relationship as an *ijarah* contract bearing *ḍamān*, and provides Key Risk Indicators the Ministry of Hajj and Umrah can embed in catering contracts.

Keywords: Risk Management; ISO 31000; Hajj Meal Services; Islamic Business Ethics; *Maqāṣid al-Sharī'ah*

Introduction

The Hajj pilgrimage is one of the world's largest religious events, bringing together millions of pilgrims from various countries in Saudi Arabia each year within a relatively short timeframe. Indonesia holds the record for the largest number of Hajj pilgrims globally, with a quota of 221,000 pilgrims for the 1447 H/2026 CE season comprising 203,320 regular pilgrims (92%) and 17,680 special Hajj pilgrims (8%). This figure aligns with the 2025 quota and positions Indonesia as the world's largest Hajj pilgrim country.¹ The scale of this event demands complex operational management, including providing meals to pilgrims during their stay in Saudi Arabia, whether in Makkah, Madinah, or ARMINA (Arafah, Muzdalifah, and Mina).

Providing meals to the pilgrims should take into account safety, health, and comfort issues. The issues matter because many pilgrims are old and frail. This process may encounter some challenges, such as delays in distribution, failure to meet hygiene and food safety standards, kitchen overcapacity at peak times (e.g., the Armina critical days), and food poisoning from inadequate storage or distribution.² Food-related incidents are often recorded as an evaluation in previous Hajj operations.³ Thus, systematic risk management is crucial for the Hajj organizers in Indonesia.

These problems should not be read merely as isolated technical failures. In the Supply Chain Risk Management (SCRM) literature, delays, spoilage and non-conformity are manifestations of supply, process and demand risks that propagate across interdependent actors in a supply chain, and they must therefore be identified, assessed and treated at the level of the chain rather than of individual incidents.⁴ Hajj catering is a clear case of such a chain: raw materials are sourced in Saudi Arabia and abroad, processed by contracted kitchens, transported under extreme heat and distributed to hundreds of thousands of pilgrims within narrow time windows. In a halal supply chain, moreover, these operational disruptions simultaneously become halal-integrity risks, because contamination, improper storage or doubtful sourcing can compromise the *ḥalālān ṭayyibān* status of food at any node of the chain.⁵ Halal integrity assurance is thus the central objective of halal supply chain management, and recent frameworks for halal supply chain risk management treat halal-related risks as a distinct risk category alongside conventional operational risks.⁶ For Hajj pilgrims, a

¹ Ministry of Hajj and Umrah of the Republic of Indonesia, Indonesia Hajj Quota for 1447 H/2026 CE, <https://haji.go.id>

² Ruyuf Alnafisah et al., "Food Safety Practices during Hajj: On-Site Inspections of Food-Serving Establishments," *Tropical Medicine and Infectious Disease* 8, no. 10 (2023): 480, <https://doi.org/10.3390/tropicalmed8100480>.

³ Nada Msrahi and Arwa Turkistani, "Assessment the Association between Foodborne Disease and Food Safety Knowledge and Practices among Pilgrims during Hajj in Saudi Arabia," *Journal of Health, Population and Nutrition* 44, no. 1 (2025): 248, <https://doi.org/10.1186/s41043-025-00964-6>.

⁴ K. Katsaliaki et al., "Supply Chain Disruptions and Resilience: A Major Review and Future Research Agenda," *Annals of Operations Research* 319, no. 1 (2022): 965–1002, <https://doi.org/10.1007/s10479-020-03912-1>.

⁵ Dwi Iryaning Handayani et al., "Ensuring the Halal Integrity of the Food Supply Chain through Halal Suppliers: A Bibliometric Review," *Journal of Islamic Marketing* 13, no. 7 (2022): 1457–78, <https://doi.org/10.1108/JIMA-10-2020-0329>.

⁶ Yusaini Hisham Mohamed et al., "The Effect of Halal Supply Chain Management on Halal Integrity Assurance for the Food Industry in Malaysia," *Journal of Islamic Marketing* 12, no. 9 (2020): 1734–50, <https://doi.org/10.1108/JIMA-12-2018-0240>; Dwi Kristanto and Dwi Agustina Kurniawati, "Development of

breach of halal integrity is not only a consumer-protection failure but also a threat to the religious validity and spiritual quality of an act of worship.

The 2026 season intensifies these chain-level risks. After the latest policy adjustment, the geopolitical situation in the Middle East, and new regulations from the Saudi Arabian government, Hajj operations in 2026 present unique challenges for food provision. To address this, Indonesia's Ministry of Hajj and Umrah continues to improve the quality of Hajj services, particularly food provision, as mandated by Law Number 8 of 2019 concerning the Organization of Hajj and Umrah Pilgrimage. The law emphasizes principles of protection, fairness, and pilgrim comfort. From a technical standpoint, operational standards for food provision for Regular Hajj pilgrims during the 1447 H/2026 CE season are governed by the Decree of the Minister of Hajj and Umrah (*Kementeriaan Haji dan Umrah*; KMHU) Number 43 of 2026 concerning Food Service Standards; this decree is derived from KMHU Number 24 of 2025 regarding Guidelines for Food Service Provision for Regular Hajj Pilgrims in Saudi Arabia.⁷

The government regulations aim to establish food provision standards that ensure food is halal, hygienic, and safe, with a maximum of three meals per day over a period of 28 days in the Makkah region and 9 days in the Madinah region. The service includes fresh meals (up to 78 times in Makkah and 27 times in Madinah) and ready-to-eat meals (up to 6 times), supported by oversight mechanisms such as food sample testing conducted by Hajj Organizing Officers (*Petugas Penyelenggara Ibadah Haji*; PPIH) and complaint channels via WhatsApp and the Hajj call center. Consequently, evaluating risk management in food provision for pilgrims during the 2026 Hajj operations is crucial to ensuring the sustainability of service quality and serving as a learning resource for organizing Hajj pilgrimages in future years. This situation makes research into the management of Hajj food provision increasingly relevant.

From the perspective of Islamic Studies, the framework of *maqāṣid al-sharī'ah* (the higher objectives of Sharia), specifically the principle of *ḥifẓ al-naḥs* (preservation of life), highlights the importance of risk management in the provision of Hajj meals.⁸ Food safety and quality for pilgrims are an important part of safeguarding their lives as "Guests of Allah the Most Merciful" (*ḍuyūf al-Raḥmān*). A *maqāṣid al-sharī'ah* perspective affirms that food security, hygiene, and quality are prerequisites for upholding the principle of *ḥifẓ al-naḥs*. Negligence in their management risks causing *māfsadah* (harm or corruption) that is not in line with *maqāṣid al-sharī'ah*.¹⁰ Studies on Indonesian Hajj operations from the *maqāṣid al-sharī'ah* perspective further show that meeting pilgrims' basic needs, especially food, is an important part of the government's efforts to ensure the well-being (*maṣlahah*) of Hajj pilgrims.¹¹

Halal Supply Chain Risk Management Framework for Frozen Food Industries," *Journal of Islamic Marketing* 14, no. 12 (2023): 3033–52, <https://doi.org/10.1108/JIMA-04-2022-0112>.

⁷ Ministry of Hajj and Umrah of the Republic of Indonesia, *Guidelines for Food Service Provision for Regular Hajj Pilgrims in Saudi Arabia* (KMHU No. 24 of 2025); Ministry of Hajj and Umrah of the Republic of Indonesia, *Food Service Standards* (KMHU No. 43 of 2026).

⁸ Moch. Bukhori Muslim et al., "Tadrīj Method in Hajj Fund Management by Badan Pengelola Keuangan Haji (BPKH) in Indonesia: A Study of Islamic Economic Law," *El-Qist: Journal of Islamic Economics and Business (JIEB)* 16, no. 1 (2026): 139–61, <https://doi.org/10.15642/elqist.2026.16.1.139-161>; 'Abd al-Raḥmān Ibrāhīm al-Kaylānī, *Qawā'id al-Maqāṣid 'inda al-Imām al-Shāṭibī*; 'Araḍan Wa Dirāsatan Wa Tahḥīlīl (Dār al-Fikr, 2000).

¹⁰ Khairul Effendi Hashim et al., "Kepentingan Keselamatan Makanan Semasa Pandemik Covid-19: Pandangan Daripada Perspektif Maqasid Syariah: The Importance of Food Safety During Covid-19 Pandemic: A View from Maqasid Syariah Perspective," *Articles, Journal of Management and Muamalah* 12, no. 1 (2022): 46–54.

¹¹ Muhammad Hosnan Jaini Sanusi, "Penyelenggaraan Ibadah Haji Indonesia Dalam Perspektif Maqasid Asy-Syari'ah," *Articles, CONTEMPLATE: Jurnal Ilmiah Studi Keislaman* 2, no. 02 (2021): 24–71, <https://doi.org/10.53649/contemplate.v2i02.144>.

Focusing specifically on the ARMUZNA period (Arafah, Muzdalifah, and Mina), which is the subject of this study, research on Hajj moderation based on *maqāṣid* emphasizes the importance of *taysīr* (ease and facilitation) for pilgrims during the performance of rituals in these locations, including the fulfillment of basic needs that support the solemnity of worship.¹² Thus, the application of ISO 31000 in this study is positioned not as a standalone risk management framework, but as an operational instrument to realize the objectives of Sharia regarding the protection of life and the well-being of Indonesian Hajj pilgrims.

Beyond its ritual and health dimensions, the provision of Hajj meals is also an economic and business activity situated within the halal food industry and the broader Islamic economy, a sector increasingly recognized as a strategic pillar of Indonesia's economic resilience¹³ whose governance is now expected to move beyond minimal Sharia compliance toward the proactive management of quality and consumer trust.¹⁴ Each year, the Indonesian government and its appointed catering partners transact large-scale procurement contracts governed by Sharia principles, making meal provision a concrete field of *fiqh al-mu'āmalah* in which *'aqd* (contract), *ijārah* (service procurement), and *ḍamān* (guarantee/liability) intersect with halal integrity and consumer protection. Framed this way, effective risk management is not merely an operational concern but a mechanism of Islamic economic governance that safeguards both the lives (*ḥifẓ al-nafs*) and the wealth and trust (*ḥifẓ al-māl* and *maṣlahah*) of pilgrims as consumers of a faith-based service economy.

Research on risk management of large-scale religious events has expanded significantly. The adoption of standard risk management frameworks such as ISO 31000 emphasizes the continuous processes of risk identification, analysis, evaluation, and treatment.¹⁵ Previous studies on the Hajj pilgrimage generally focus on public health aspects.¹⁶ Food safety has also gained attention from researchers, especially following recorded incidents of mass food poisoning during Hajj and Umrah pilgrimages; the incidents motivated the implementation of HACCP (Hazard Analysis and Critical Control Point) standards among pilgrim catering providers.¹⁷

Other studies have highlighted logistics and supply chain aspects of Hajj operations, from procurement and distribution processes to the evaluation of pilgrim satisfaction with catering services.¹⁸ Other studies on the subject indicate that the

¹² Khaeruddin Khaeruddin and Lilik Andar Yuni, *Problematika Moderasi Haji: Suatu Tinjauan Maqashid Untuk Memudahkan Dan Menyempurnakan Ritual Haji Armuzna*, 6, no. 12 (2023): 1881–92.

¹³ Ana Toni Roby Candra Yudha and Abdullah Kafabih, "Halal Industry during the Covid-19 Pandemic Is The Hidden Blessing: Industri Halal Selama Pandemi Covid-19 Adalah Berkah Tersembunyi," *El-Qist: Journal of Islamic Economics and Business (JIEB)* 11, no. 1 (2021): 17–32, <https://doi.org/10.15642/elqist.2021.11.1.17-32>.

¹⁴ Ramadhan Razali et al., "Beyond Sharia Compliance: Shifting Muslim Consumer Expectations and the Strategic Response of the Global Halal Industry," *El-Qist: Journal of Islamic Economics and Business (JIEB)* 16, no. 1 (2026): 1–17, <https://doi.org/10.15642/elqist.2026.16.1.1-17>.

¹⁵ Tuuli Parviainen et al., "Implementing Bayesian Networks for ISO 31000:2018-Based Maritime Oil Spill Risk Management: State-of-Art, Implementation Benefits and Challenges, and Future Research Directions," *Journal of Environmental Management* 278 (January 2021): 111520, <https://doi.org/10.1016/j.jenvman.2020.111520>.

¹⁶ Mohammadali Tofighi et al., "Estimating Social Contacts in Mass Gatherings for Disease Outbreak Prevention and Management: Case of Hajj Pilgrimage," *Tropical Diseases, Travel Medicine and Vaccines* 8, no. 1 (2022): 19, <https://doi.org/10.1186/s40794-022-00177-3>.

¹⁷ R. Alnafisah, F. Alnasiri, S. Alzaharni, I. Alshikhi, and A. Alqahtani, "Food Safety Practices during Hajj: On-site Inspections of Food-Serving Establishments," *Tropical Medicine and Infectious Disease*, Vol. 8, No. 10 (2023), Article 480; Latifah A. Alhashim et al., "Food Safety Knowledge and Attitudes: A Cross-Sectional Study among Saudi Consumers from Food Trucks Owned by Productive Families," *International Journal of Environmental Research and Public Health* 19, no. 7 (2022): 4322, <https://doi.org/10.3390/ijerph19074322>.

¹⁸ D. Kristanto and D. A. Kurniawati, "Development of Halal Supply Chain Risk Management Framework for Frozen Food Industries," *Journal of Islamic Marketing*, Vol. 14, No. 12 (2023), pp. 3033–3052; D. A. Kurniawati

quality of food services significantly contributes to pilgrim satisfaction and comfort; thus, it serves as a key indicator of the overall success of Hajj operations.¹⁹ In terms of policy, annual evaluation reports from the Ministry of Hajj and Umrah and the Indonesian Hajj Supervisory Commission serve as vital references for identifying operational issues such as delays in food distribution, non-compliance with nutritional standards, and pilgrims' complaints regarding menu variety. However, the majority of these studies are still descriptive in nature. They have not yet adopted a formal risk management framework as their primary analytical tool.

Recent debates on halal governance and quality management in other Muslim countries sharpen this gap. In Malaysia, halal supply chain management practices have been shown to significantly strengthen halal integrity assurance in the food industry.²⁰ In Turkey, Muslim consumers expect halal certification bodies to guarantee not only permissibility but also the quality, hygiene, and safety of food, highlighting that a trustworthy halal assurance system matters even in a Muslim-majority country.²¹ In Saudi Arabia, food safety studies continue to reveal gaps in food handlers' and consumers' safety knowledge and practices, which is relevant to the mass-catering environment in which Hajj meals are produced.²² Recent reviews further identify consensus on halal standards, government support, technological advancement, certification, and stakeholder collaboration as pivotal factors for halal food traceability in Muslim countries, and map the ethical issues that arise along the halal food supply chain.²³ These studies, however, examine halal integrity, certification, or food safety in commercial settings; they do not integrate these concerns with a formal enterprise risk management standard in a publicly organized religious service such as Hajj catering.

Another gap is the lack of integration between ISO 31000 and the operational practices of Indonesian Hajj catering services. These operations often remain reactive instead of proactive (preventive and predictive); this is further reflected in the limited adoption of blockchain-based halal compliance technology in Indonesia.²⁴ Only a few studies have comprehensively evaluated how Hajj organizers and catering partners

and A. Cakravastia, "A Review of Halal Supply Chain Research: Sustainability and Operations Research Perspective," *Cleaner Logistics and Supply Chain*, Vol. 6 (2023), Article 100096; A. Aljohani, S. Nejaïm, M. Khayyat, and O. Aboulola, "E-Government and Logistical Health Services during Hajj Season," *Bulletin of the National Research Centre*, Vol. 46, No. 1 (2022), Article 112.

¹⁹Marwan Albahar et al., "Exploring Hajj Pilgrim Satisfaction with Hospitality Services through Expectation-Confirmation Theory and Deep Learning," *Heliyon* 9, no. 11 (2023): e22192, <https://doi.org/10.1016/j.heliyon.2023.e22192>; Thowayeb H. Hassan et al., "THE IMPACT OF RELIGIOUS TOURISTS' SATISFACTION WITH HAJJ SERVICES ON THEIR EXPERIENCE AT THE SACRED PLACES IN SAUDI ARABIA," *GeoJournal of Tourism and Geosites* 43, no. 3 (2022): 1013–21, <https://doi.org/10.30892/gtg.43321-915>.

²⁰ Mohamed, Abdul Rahim, and Ma'aram, "The Effect of Halal Supply Chain Management on Halal Integrity Assurance," pp. 1734–1750.

²¹ Hakiye Aslan, "The Influence of Halal Awareness, Halal Certificate, Subjective Norms, Perceived Behavioral Control, Attitude and Trust on Purchase Intention of Culinary Products among Muslim Costumers in Turkey," *International Journal of Gastronomy and Food Science* 32 (June 2023): 100726, <https://doi.org/10.1016/j.ijgfs.2023.100726>.

²² Alhashim et al., "Food Safety Knowledge and Attitudes."

²³ L. A. H. F. Dashti, T. Jackson, A. West, and L. Jackson, "Enhancing Halal Food Traceability: A Model for Rebuilding Trust and Integrity in Muslim Countries," *Journal of Islamic Marketing*, Vol. 15, No. 12 (2024), pp. 3382–3408; M. R. Mustapha, F. Ahamad, N. Y. Hazahari, and N. Samsudin, "Ethical Issues in the Halal Food Supply Chain: A Systematic Bibliometric Review," *Journal of Islamic Marketing*, Vol. 15, No. 12 (2024), pp. 3804–3819.

²⁴ E. Karyani, I. Geraldina, M. G. Haque, and A. Zahir, "Intention to Adopt a Blockchain-Based Halal Certification: Indonesia Consumers and Regulatory Perspective," *Journal of Islamic Marketing*, Vol. 15, No. 7 (2024), pp. 1766–1782.

identify potential risks from the planning stage, risk assessment, and mitigation strategies. Equally, although halal supply chain scholarship in Islamic business has advanced risk and traceability frameworks for commercial food industries, it has rarely been extended to the publicly organized, faith-based service economy of Hajj catering. This study addresses this empirical gap by conducting an evaluative study focused on the 2026 Hajj operations, serving as a relevant and timely unit of analysis while providing empirical insights into current risk management practices regarding food services within the halal supply chain of Hajj operations.

Beyond these empirical gaps, a more fundamental gap concerns the adequacy of ISO 31000 itself. ISO 31000 is a secular-technical standard: it defines risk as the effect of uncertainty on objectives and evaluates it through likelihood and consequence, but it is neutral as to what those objectives should be. In the Hajj ecosystem, however, there is a spiritual dimension of risk that such a standard cannot map on its own. A meal of doubtful halal status or one contaminated during storage threatens not only the physical safety of pilgrims (*ḥifẓ al-naḥs*) but also the purity of their consumption and the validity and solemnity of their worship (*ḥifẓ al-dīn*); likewise, failure to deliver contracted services wastes public and pilgrims' funds (*ḥifẓ al-māl*). *Maqāṣid al-sharī'ah* therefore supplies the normative objectives against which risks should be evaluated and prioritized, while ISO 31000 supplies the procedural discipline for identifying, analyzing, treating and monitoring them. This study integrates the two into a *Maqāṣid*-based risk governance model in which each ISO 31000 risk is mapped to the Sharia objective it threatens and to a Sharia-based mitigation strategy.

Based on the research background, this research is crucial for several reasons. First, the provision of meals is a component of Hajj services that directly impacts pilgrim safety and comfort; consequently, mismanagement can lead to serious health risks and even disrupt the solemnity of the Hajj process. Second, an evidence-based evaluation of meal-related risk management is essential to support better policymaking by Hajj organizers, particularly in navigating the regulatory dynamics of Saudi Arabia, which keep changing every year. Third, this research is expected to contribute academically to the development of practical risk management in the context of Hajj, while also serving as a practical reference for stakeholders such as the Ministry of Hajj and Umrah, the Hajj Organizing Agency, and catering partners in designing more effective risk mitigation strategies and Sharia-compliant procurement contracts for future Hajj operations, thereby strengthening governance of the halal food supply chain as a segment of Indonesia's Islamic economy.

Accordingly, this study aims to: (1) Identify the types of risks arising during the provision of meals for Indonesian Hajj pilgrims during the 2026 Hajj operations, specifically across the planning, procurement, distribution, and serving stages; (2) Analyze the implementation of risk management stages, namely identification, assessment, and mitigation, undertaken by organizers and catering partners to address these risks; (3) Evaluate the effectiveness of the implemented risk management strategies; and (4) Formulate several recommendations to improve Hajj operations in the following years. Finally, this study is exploratory-evaluative in nature; thus, it does not formulate statistical hypotheses. Instead, this study aims to answer research questions regarding the extent to which meal-related risk management has been effectively implemented and which areas require further strengthening to ensure the continuous improvement of the quality of Indonesian Hajj services.

Research Method

This research is an evaluative case study design with a qualitative-descriptive approach. It employs the ISO 31000:2018 risk management framework as the primary analytical lens. This design was selected because the study aims to conduct an in-depth evaluation of the implementation of risk management stages. The framework consists of identification, analysis, evaluation, and treatment. The unit of analysis is the meal supply chain for Indonesian Regular Hajj pilgrims during the 2026 Hajj operations. The reporting of findings adheres to the Standards for Reporting Qualitative Research (SRQR) guidelines, reflecting the study's exploratory-evaluative nature and the fact that it does not test statistical hypotheses.

The study participants consisted of stakeholders directly involved in the Hajj pilgrim meal supply chain. The participants are:

1. personnel from the Meal Service Provision Team under the Hajj Organizing Committee (PPIH) for Saudi Arabia (Makkah and Madinah Working Areas);
2. official representatives of catering providers/partners according to KMHU Decree Number 43 of 2026; and
3. an expert panel in risk management and food safety who participated in the risk assessment process.

Informants were selected via purposive sampling based on criteria requiring direct involvement and experience managing catering services during at least one Hajj season. Seven informants (an expert panel) participated in a focus group discussion (FGD) to assess the likelihood and impact of each identified risk, utilizing a 1–5 ordinal scale in accordance with the ISO 31000 risk assessment framework.²⁵ The assessment instrument was not subjected to conventional psychometric validity and reliability testing (such as Cronbach's Alpha) because it relied on consensus-based expert judgment; data validity was instead reinforced through source triangulation (documents, interviews, and field observations) and member checking of the risk mapping results. Aside from participants, this study also includes document analysis. The documents analyzed are all regulatory documents, operational reports, and documents from stakeholders involved in providing catering services for the regular Hajj pilgrimage during the 1447 H/2026 CE season.

The primary instruments used in this study include: (1) a semi-structured interview guide to explore risk perceptions among PPIH personnel and catering partners; (2) a risk assessment worksheet based on a 5x5 likelihood-impact matrix, referencing ISO 31000:2018; (3) a risk management implementation maturity checklist adapted from the ISO 31000 maturity model, using a 1–5 scale; and (4) regulatory documents KMHU Number 24 of 2025 and KMHU Number 43 of 2026, serving as instruments for document analysis to verify applicable operational standards for food services.

Data collection was carried out in three stages. The first stage (January–March 2026) involved analyzing regulatory documents and Hajj operational reports from previous years to develop an initial risk identification framework. The second stage (April–May 2026) involved interviews and focus group discussions (FGDs) with PPIH officers, catering partners, and an expert panel to identify risks, assess likelihood and impact, and map risks into a risk register. The third stage (June–July 2026, during the peak of Hajj) involved field observations and verification of Key Risk Indicators (KRI) data through meal test reports, WhatsApp complaint channels, and the Hajj call center.

²⁵ Parviainen et al., “Implementing Bayesian Networks for ISO 31000.”

Data were analyzed using thematic analysis for qualitative data from interviews and focus group discussions, and descriptive analysis for ordinal risk assessment data (likelihood-impact scores and implementation maturity scores). Identified risks were mapped on a heat map matrix, ranked by severity to produce a list of the top five extreme risks, and documented in a risk register containing a description of the risk, likelihood-impact level, responsible party, and mitigation plan. The analysis was conducted without inferential statistical hypothesis testing, consistent with the exploratory-evaluative nature of the research.

The scope of the study is limited to meal services for Regular Hajj pilgrims and does not cover the special Hajj scheme. The assessment of likelihood and impact is qualitative and expert-based, thereby potentially subject to assessor subjectivity, and the risk assessment results have not been validated against large-scale quantitative incident data.

Results

The results of the risk identification and assessment regarding meal provision for Regular Hajj pilgrims during the 2026 Hajj operations are presented through the following eight visualizations. These are structured according to the ISO 31000 risk management process stages: establishing the context and identifying risks, analyzing and evaluating risks, treatment (mitigation), and monitoring and review. Risks are mapped across the four stages of the meal provision process (planning, procurement, distribution, and serving), as outlined in the objectives of this study.

Figure 1. Distribution of Risks by Process Phase

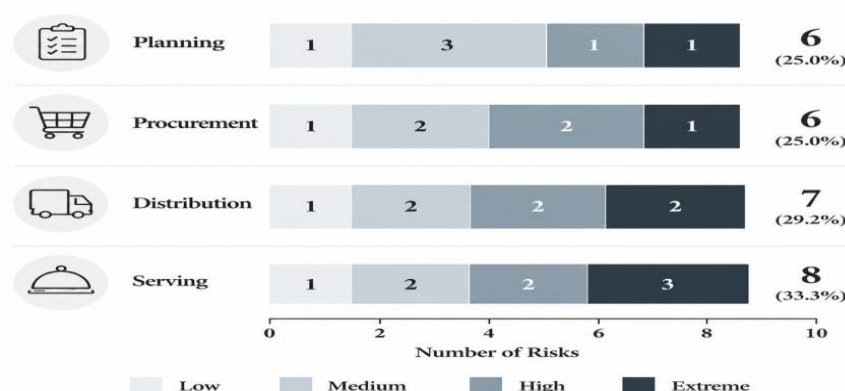


Figure 1 illustrates the distribution of risks identified at each stage of the Hajj meal supply process. A higher number of risks were identified during the distribution and serving stages compared to the planning and procurement stages; this aligns with the operational characteristics of the Hajj peak period, which is constrained by time and location, particularly regarding fresh meal services in the Makkah and Madinah regions. The concentration of risks at these two stages is in line with Alnafisah et al.²⁶ Their article found that delays in serving and storage during peak periods constitute critical points in the Hajj meal supply chain.

²⁶ Alnafisah et al., "Food Safety Practices during Hajj."

Figure 2. Risk Heat Map

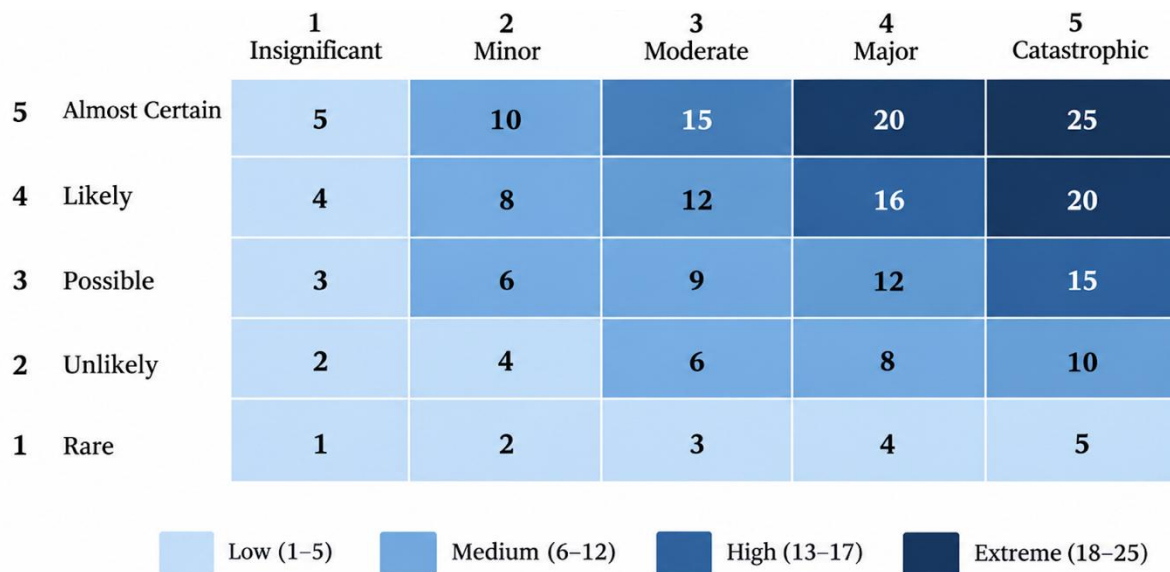


Figure 2 shows a risk mapping on a likelihood and impact matrix on a scale of 1–5. This mapping aligns with the assessment framework of ISO 31000 assessment framework.²⁷ Most identified risks fall within the medium-to-high zones; the higher the score, the more urgently the risk requires priority attention. This mapping forms the basis for prioritizing mitigation measures in the next risk management stage.

Figure 3. Risk Summary

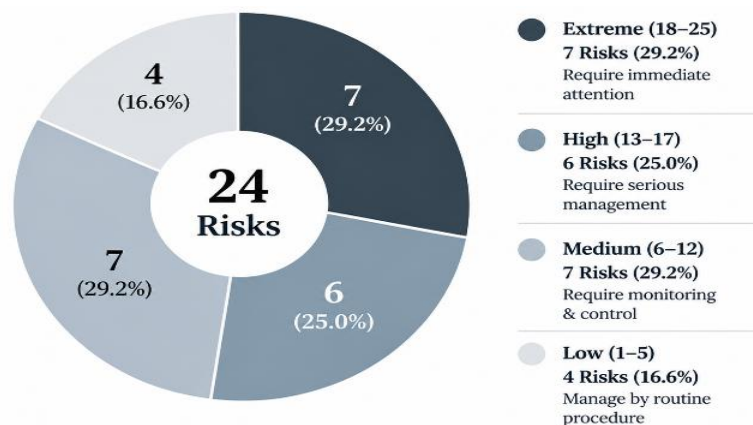


Figure 3 sums up the number of risks based on four key categories: food safety, logistics/distribution, standards compliance (halal, hygiene, safety), and pilgrim satisfaction. Food safety and logistics/distribution categories are responsible for the majority of identified risks. This is consistent with previous literature indicating that these two aspects are primary concerns in catering operations for mass gathering events.²⁸

²⁷ Parviainen et al., “Implementing Bayesian Networks for ISO 31000.”

²⁸ Tofighi et al., “Estimating Social Contacts in Mass Gatherings for Disease Outbreak Prevention and Management”; Msrahi and Turkistani, “Assessment the Association between Foodborne Disease and Food Safety Knowledge and Practices among Pilgrims during Hajj in Saudi Arabia.”

Figure 4. ISO 31000 Implementation Overview



Figure 4 displays the overall application of the ISO 31000 stages to the meal provision process. The stages include context establishment, risk identification, risk analysis and evaluation, risk treatment, and continuous monitoring and review. The risk identification and analysis stages have been effectively implemented through meal testing mechanisms and supervision by the Hajj Organizing Committee (PPIH), whereas the risk treatment and monitoring stages still show room for improvement, particularly regarding the documentation of follow-up mitigation actions.

Figure 5. Implementation Maturity



Figure 5 shows a risk management implementation maturity level of 3.2/5 (moderate category). It indicates that risk management has been implemented; however, the implementation still requires strengthening in terms of consistency and documentation. This finding reinforces the gap analysis results, showing that risk management practices for Indonesian Hajj catering remain responsive (reactive) in nature and are not yet fully integrated with formal frameworks such as ISO 31000.

Figure 6. Top 5 Extreme Risks

	Risk	Likelihood (1–5)	Impact (1–5)	Risk Score (L×I)
1	 Delay in food distribution to hotels	5	5	25
2	 Poor food quality (taste, temperature, appearance)	5	4	20
3	 Mismatch between menu and portion with contract	4	5	20
4	 Limited number of Indonesian chefs	4	4	16
5	 Kitchen equipment malfunction	4	4	16

Figure 6 presents the five risks with the highest severity. The extreme risks are dominated by the risk of distribution delays during peak times of Armina, the poor quality of food, and the mismatch between the menu and portion with the contract; with risk scores of 25 and 20. These five risks are the top priority in formulating mitigation strategies because they directly impact the safety and comfort of the pilgrims' worship.

The results of interviews and focus group discussions with Hajj Organizing Committee (PPIH) staff and catering partners confirm that critical periods for meal provision occur not only during the peak ARMUZNA phase but also during the transition periods of *Wukuf* and departure to Mina. During these times, pilgrims receive ready-to-eat meals instead of freshly prepared ones; however, most of the pilgrims are not accustomed to this type of meal, as the texture of the rice is often cold or hard when consumed. As this ready-to-eat meal scheme has only been implemented over the last three Hajj seasons, pilgrim acceptance remains low.

Furthermore, catering partners said that not all raw ingredients come from Indonesia; some are still supplied by local markets in Saudi Arabia. This problem creates additional challenges in maintaining consistent flavors and quality standards. These findings align with the Ministry of Religious Affairs' Inspectorate General field evaluation of the 2025 Hajj operations, which recorded a pilgrim satisfaction score of 83.04 as of mid-May 2025. During this time, some confirmed complaints included rice texture, spiciness levels, and the suitability of menus for the elderly.²⁹ The National Working Meeting on the Evaluation of the 1446 H/2025 M Hajj Pilgrimage also noted that, while the procurement of meal services in the ARMUZNA area was generally conducted in accordance with procedures, it recommended a contract review for catering providers failing to meet standards in the upcoming season.³⁰

²⁹ Ministry of Religious Affairs of the Republic of Indonesia, Pilgrims' Smiles as the Target: The Inspectorate General of the Ministry of Religious Affairs Strengthens Oversight of 2025 Hajj Services.

³⁰ Ministry of Religious Affairs of the Republic of Indonesia, 2025 Hajj Supervision Results: Services Improved, Pilgrims Well Served.

Figure 7. Risk Register Snapshot

No.	Risk Description	Process Phase	Cause	Likelihood (1-5)	Impact (1-5)	Risk Score (LxI)	Risk Level	Existing Controls	Proposed Mitigation	Risk Owner
1	Delay in food distribution to hotels	 Distribution	Traffic congestion, vehicle breakdown, late preparation.	5	5	25	Extreme	Vendor coordination, delivery schedule	Real-time tracking, Buffer time, Route planning, SLA enforcement	Catering Vendor
2	Poor food quality (taste, temperature, appearance)	 Serving	Cooking inconsistency, quality of raw materials, holding time.	5	4	20	Extreme	QC inspection, temperature check	Chef training, Standard recipe, Holding time control, Regular QC	Catering Vendor
3	Mismatch between menu and portion with contract	 Planning	Poor planning, inaccurate data, communication gap.	4	5	20	Extreme	Menu planning, Contract review	Accurate forecasting, Data validation, Regular coordination	Catering Vendor
4	Limited number of Indonesian chefs	 Serving	Difficulty in recruitment, high turnover.	4	4	16	High	Chef deployment	Chef pool development, Retention program	Catering Vendor
5	Kitchen equipment malfunction	 Serving	Equipment age, maintenance not optimal.	4	4	16	High	Maintenance schedule	Preventive maintenance, Spare parts availability	Catering Vendor

Figure 7 shows an extract of the risk register. The risks are identified and described; their likelihood and impact levels are shown; the responsible parties (Provisioning Team/Catering Provider) and mitigation plans are identified. This risk register serves as a documentation tool that enables the organizers to monitor the management status of each risk continuously, in accordance with the monitoring and review principles of ISO 31000.

Figure 8. Key Risk Indicators



Figure 8 shows Key Risk Indicators (KRIs) that are monitored on a periodic basis. These include the level of compliance of the catering provider with meal test standards, the volume of pilgrim complaints received through WhatsApp and the Hajj call center, and the timeliness of distribution of fresh meals. These KRIs are a tool for organizers to identify potential risk escalation at an early stage before it affects services for the pilgrims. Beyond food safety, these KRIs double as governance and economic

indicators: caterer compliance with meal-test standards proxies contractual (*ijārah*) performance and *ḍamān* exposure; complaint volume through WhatsApp and the Hajj call center proxies the reputational and service-quality cost borne by the organizer; and distribution timeliness proxies operational efficiency and the risk of penalty or re-procurement spending. Monitored this way, the KRIs connect Sharia-compliant contract governance to the preservation of public funds (*ḥifẓ al-māl*) and pilgrim *maṣlahah*, rather than to technical food-safety control alone.

Discussion

Taken together, the findings indicate that the risk management of the meal provision for Indonesian Hajj pilgrims in the 2026 operations has included several stages of ISO 31000, namely risk identification and analysis through regulatory mechanisms such as meal tests and supervision by the Hajj Organizing Committee (PPIH) as regulated in KMHU Decree Number 43 of 2026. However, the level of implementation maturity is at the “moderate” level (Figure 5), indicating that risk management remains predominantly reactive, consistent with the gaps identified in the gap analysis. The high concentration of risks in the distribution and servicing stages (Figure 1) and the prevalence of food safety and logistics risks (Figure 3) are consistent with the findings of Alnafisah et al.³¹ and Msrahi & Turkistani,³² who show that delays and violations of hygiene standards are regular problems in Hajj activities every year. This points out that the risks associated with Hajj meals are relatively similar across the seasons, and therefore, enhancing a documented, preventive mitigation framework, rather than corrective responses after incidents, is important.

The findings on pilgrim satisfaction with meal services align with the latest official data. The 2025 Indonesian Hajj Pilgrim Satisfaction Index (IKJHI) survey recorded a satisfaction score of 89.41 for meals outside the ARMUZNA period. However, the score for meals during the ARMUZNA period decreased by 1.21 points to 83.56 compared to the previous year.³³ This supports the finding in Figure 1 that the risks related to meal services are concentrated during the peak Armuzna period. Hutomo and Fathurahman observed a similar pattern,³⁴ showing that accommodation and meal services remain areas of concern in the Hajjsequal model for pilgrims from the Special Capital Region of Jakarta. Technology-based services like the Eatmarna application³⁵ and IoT-based solutions for Umrah and Hajj services³⁶ could support a WhatsApp complaint system and a Hajj call center, as identified in Figure 8, and strengthening of these services may be required. Moreover, Hassan et al.³⁷ found that

³¹ Alnafisah et al., “Food Safety Practices during Hajj.”

³² Msrahi and Turkistani, “Assessment the Association between Foodborne Disease and Food Safety Knowledge and Practices among Pilgrims during Hajj in Saudi Arabia.”

³³ Statistics Indonesia, *The 2025 Indonesian Hajj Pilgrim Satisfaction Index (IKJHI) Reached 88.46 (Highly Satisfactory), an Increase of 0.26 Points Compared with 2024*.

³⁴ Yoga Tri Hutomo and Heri Fathurahman, “Analisis Kualitas Pelayanan Penyelenggaraan Ibadah Haji Menggunakan Model Hajjsequal Pada Jemaah Haji Provinsi Daerah Khusus Jakarta,” *Jurnal Pendidikan Indonesia* 6, no. 1 (2025): 193–202, <https://doi.org/10.59141/japendi.v6i1.6944>.

³⁵ Thowayeb H. Hassan et al., “The Impact of Eatmarna Application Usability on Improving Performance Expectancy, Facilitating the Practice of Rituals and Improving Spirituality Feelings during Umrah Amid the COVID-19 Outbreak,” *Religions* 13, no. 3 (2022): 268, <https://doi.org/10.3390/rel13030268>.

³⁶ Muhammad Binsawad and Marwan Albahar, “A Technology Survey on IoT Applications Serving Umrah and Hajj,” *Applied Computational Intelligence and Soft Computing* 2022 (August 2022): 1–10, <https://doi.org/10.1155/2022/1919152>.

³⁷ Hassan et al., “The Impact of Eatmarna Application Usability on Improving Performance Expectancy, Facilitating the Practice of Rituals and Improving Spirituality Feelings during Umrah Amid the COVID-19 Outbreak.”

the quality of pilgrims' spiritual experience affects their satisfaction with religious services post-pandemic. Hence, the enhancement of meal service risk management should not ignore the worship comfort dimension but should also focus on more than just technical and operational aspects.

Strengthening this year's evaluation would be most effective if explicitly contrasted with the results of catering service evaluations from previous Hajj seasons. The 2025 IKJHI score shows a decline in satisfaction regarding meals in ARMUZNA compared to the prior year.³⁸ This indicates that issues during this critical period are recurring rather than isolated to a single season; consequently, mitigation recommendations must be formulated as part of a continuous, multi-season improvement process rather than merely as annual reactive measures. The findings regarding pilgrims' limited readiness for ready-to-eat meals must also be viewed in light of the relatively recent implementation of the scheme introduced only three seasons ago, meaning the adaptation curve for both pilgrims and catering providers (including regarding rice temperature and texture) remains in a learning phase and requires an evaluation distinct from that of the longer-established fresh meal service. The limited supply of raw materials from Indonesia highlights the need to improve cross-border supply chain coordination to reduce food safety risks, which the existing regulatory framework does not sufficiently cover.

The interpretation of these findings is improved by comparing them with risk management practices at other mass gathering events. Almehmadi and Alqahtani,³⁹ in a detailed narrative review, suggest that emergency response readiness for religious mass gatherings generally relies on reactive measures, consistent with the moderate level of maturity shown in Figure 5. AlJahdali et al.⁴⁰ used Geographic Information System (GIS) analysis to improve the health services during the Hajj in Makkah, while Kheimi et al.⁴¹ highlighted the need for strategies to improve protection against possible disease outbreaks during the Hajj season. Both studies emphasize the need for data-driven approaches and ongoing surveillance, as demonstrated by the Key Risk Indicators (Figure 8). Cross-contextual comparisons are also relevant to other religious mass gatherings: in their study of the Gangasagar Mela in India, Sharma et al.⁴² stressed the importance of raising awareness of environmental health risks at large religious gatherings. Conversely, Pimenta et al.⁴³ demonstrated in their research in Rio de Janeiro that structured health surveillance strategies applied across the pre-, during, and post-event stages could be adopted to improve risk monitoring systems for Hajj operations in Indonesia.

³⁸ Statistics Indonesia, *The 2025 Indonesian Hajj Pilgrim Satisfaction Index (IKJHI) Reached 88.46 (Highly Satisfactory), an Increase of 0.26 Points Compared with 2024*.

³⁹ Mater Almehmadi and Jaber S. Alqahtani, "Healthcare Research in Mass Religious Gatherings and Emergency Management: A Comprehensive Narrative Review," *Healthcare* 11, no. 2 (2023): 244, <https://doi.org/10.3390/healthcare11020244>.

⁴⁰ Imad A. AlJahdali et al., "Strategic Enhancement of Healthcare Services During the Hajj Season in Makkah: A Comprehensive Geographic Information System (GIS) Analysis," *Cureus*, ahead of print, August 28, 2024, <https://doi.org/10.7759/cureus.68030>.

⁴¹ Abdulaiziz Mustafa Kheimi et al., "Protection Enhancement Strategies of Potential Outbreaks during Hajj," *American Journal of Disaster Medicine* 19, no. 1 (2024): 71–77, <https://doi.org/10.5055/ajdm.0454>.

⁴² Avinash Sharma et al., "Raising Awareness and Mitigating Risk of Transmission of Antimicrobial Resistance during the Upcoming 2024 Gangasagar Religious Mass Gathering," *New Microbes and New Infections* 56 (January 2024): 101213, <https://doi.org/10.1016/j.nmni.2023.101213>.

⁴³ Isiyara Taverna Pimenta et al., "Health Surveillance at Mass Gatherings: Experience Report from the Strategic Health Surveillance Information Center in the City of Rio de Janeiro, 2024," *Epidemiologia e Serviços de Saúde* 34 (2025): e20250212, <https://doi.org/10.1590/s2237-96222025v34e20250212.en>.

The maturity level of ISO 31000-based risk management implementation observed in this study aligns with patterns identified in other sectors in Indonesia. Fahlevi et al.,⁴⁴ in a case study of hotels in Balikpapan, found that ISO 31000 implementation still faces challenges at the risk treatment stage due to limited digitalization, paralleling the documentation gap shown in Figure 7. Nasution et al.,⁴⁵ studying a specialized child development hospital, demonstrated that ISO 31000:2018 implementation is effective during the risk identification stage but requires strengthening in the monitoring and review phases, while Prasetyo et al.⁴⁶ combined ISO 31000 with Bow Tie Analysis to enhance risk analysis in higher education institutions. These cross-sector findings reinforce the argument that the gap between risk identification and risk treatment or monitoring is a common issue across Indonesian organizations, rather than one specific solely to the context of Hajj operations. The resilience framework proposed by Emami, Lorenzoni, and Turchetti⁴⁷ for health systems is also relevant for replication in Hajj catering services, particularly when designing risk escalation pathways extending from the operational level of the PPIH to the KMHU. In comparison, Aldahawi⁴⁸ showed that big data analytics strategies for crowd management could be expanded to monitor meal distribution points during peak periods; this aligns with the meal testing mechanisms stipulated in KMHU Decree Number 43 of 2026.

The aforementioned findings can be re-examined through the *maqāṣid al-sharī'ah* framework outlined in the Introduction. The concentration of risk during the distribution and serving stages, particularly during the critical period in ARMUZNA, combined with the pilgrims' lack of readiness regarding ready-to-eat meals, essentially poses a threat to the principle of *ḥifẓ al-naḥs* (preservation of life), a core objective of Sharia.⁵⁰ According to this perspective, the implementation of ISO 31000 does not merely serve as a managerial tool to meet food quality and safety standards but also as an operational manifestation of the religious obligation to safeguard the lives of the Guests of Allah (*ḍuyūf al-Raḥmān*). Consequently, strengthening risk handling and monitoring currently categorized as "moderate" can be viewed as a step toward perfection (*tahsīniyyāt*) in fulfilling *maqāṣid*, aligning with the principle of ease (*taysīr*) emphasized in studies on Hajj moderation in ARMUZNA.⁵¹ The uneven sourcing of ingredients from Indonesia is also relevant to the dimensions of both *ḥifẓ al-naḥs* and *ḥifẓ al-māl* (preservation of wealth), given that consistency in food quality

⁴⁴ Mohammad Reza Fahlevi et al., "Analisis Manajemen Risiko Berbasis ISO 31000 Pada Studi Kasus Hotel Jakarta Di Balikpapan," *SPECTA Journal of Technology* 9, no. 1 (2025): 36–51, <https://doi.org/10.35718/specta.v9i1.1324>.

⁴⁵ Titi Anggraeni Nasution et al., "Sistem Manajemen Risiko Berbasis ISO 31000:2018 Di RS Khusus Tumbuh Kembang GSH," *Cerdika: Jurnal Ilmiah Indonesia* 5, no. 5 (2025): 1832–46, <https://doi.org/10.59141/cerdika.v5i5.2593>.

⁴⁶ Beny Prasetyo et al., "IT Risk Management Analysis Based on ISO 31000 and Bow Tie Analysis (BTA) in Higher Education Institution," *Indonesian Journal of Information Systems* 7, no. 1 (2024): 84–96, <https://doi.org/10.24002/ijis.v7i1.9673>.

⁴⁷ Seyedeh Gelareh Emami et al., "Towards Resilient Healthcare Systems: A Framework for Crisis Management," *International Journal of Environmental Research and Public Health* 21, no. 3 (2024): 286, <https://doi.org/10.3390/ijerph21030286>.

⁴⁸ Hanaa Ali Aldahawi, "Big Data Analytics Strategy Framework: A Case of Crowd Management During the Hajj Pilgrimage, Mecca, Saudi Arabia," *Bioscience Biotechnology Research Communications* 14, no. 4 (2021): 1975–84, <https://doi.org/10.21786/bbrc/14.4.88>.

⁵⁰ 'Abd al-Raḥmān Ibrāhīm al-Kaylānī, *Qawā'id al-Maqāṣid 'inda al-Imām al-Shāṭibī; 'Araḍan Wa Dirāsatan Wa Tahlīlan*.

⁵¹ Khaeruddin and Yuni, *Problematika Moderasi Haji: Suatu Tinjauan Maqashid Untuk Memudahkan Dan Menyempurnakan Ritual Haji Armuzna*.

and halal integrity is closely linked to the pilgrims' trust in the organizers. From a *fiqh al-mu'āmalah* standpoint, these findings also reframe the organizer–caterer relationship as an *ijārah* (service procurement) contract bearing obligations of *ḍamān* (guarantee) and *amānah* (trust); weak risk treatment therefore represents not only an operational shortfall but a governance gap in the halal supply chain, carrying economic consequences (contract penalties, reputational cost, and inefficient public spending) for Indonesia's Islamic service economy.

Why the Risks Occur and How to Resolve Them: A *Maqāṣid*-Based Risk Register

The risk data become meaningful only when their root causes are explained. First, the extreme distribution-delay risk arises structurally from the compression of demand in Armina, where hundreds of thousands of pilgrims must be served within a few hours in a confined area while kitchen and transport capacity cannot be expanded proportionally. Second, deteriorating food quality and menu or portion non-conformity arise because production is outsourced to Saudi caterers and some raw materials are purchased in local Saudi markets, weakening the organizer's direct control over the chain and making quality dependent on contract enforcement. Third, low acceptance of ready-to-eat meals reflects a scheme introduced only three seasons ago, for which neither pilgrims nor caterers have completed the adaptation curve. Fourth, and underlying all three, *ḍamān* is enforced ex post through complaints and contract review rather than ex ante through monitoring, so that risks recur each season. From a Sharia standpoint, resolving these risks requires more than technical correction: each risk must be evaluated by the *maqāṣid* objective it threatens and treated through instruments of *fiqh al-mu'āmalah*, such as contractual specifications (*shurūṭ*), liability (*ḍamān*), the option to rescind (*khiyār*) and the principle of blocking the means to harm (*sadd al-dharā'ī*). Table 1 presents the resulting *Maqāṣid*-based risk register.

Table 1. *Maqāṣid*-Based Risk Register for Hajj Meal Provision

Risk Type (ISO 31000)	Maqāṣid Perspective	Sharia-Based Mitigation Strategy
Distribution delays during the Armina peak (logistics/operational risk)	Threat to <i>ḥifẓ al-nafs</i> (hunger and exhaustion of elderly pilgrims in extreme heat) and <i>ḥifẓ al-dīn</i> (disruption of wuqūf and the solemnity of rituals)	Delivery-time KRIs written into the <i>ijārah</i> contract as <i>shurūṭ</i> with <i>ḍamān</i> penalties; staggered dispatch and buffer stock of ready-to-eat meals, in line with the principle of <i>taysīr</i>
Food contamination and hygiene or storage failure (food safety risk)	Threat to <i>ḥifẓ al-nafs</i> (food poisoning) and <i>ḥifẓ al-dīn</i> (loss of the <i>ṭayyib</i> quality of permissible food)	<i>Ḥalālan ṭayyiban</i> controls based on HACCP as contractual specifications; time–temperature logging and meal tests before distribution; caterer bears <i>ḍamān</i> for proven negligence
Halal-integrity risk from locally sourced raw materials (supply risk)	Threat to <i>ḥifẓ al-dīn</i> (consumption of doubtful, <i>shubḥah</i> , food) and <i>ḥifẓ al-māl</i> (pilgrims' trust and funds)	Approved-supplier list with recognized halal certification and traceability documents, applying <i>sadd al-dharā'ī</i> ; periodic halal audits of caterers' supply chains
Menu and portion non-conformity with contract (compliance risk)	Threat to <i>ḥifẓ al-māl</i> (payment for services not delivered,	Enforcement of <i>shurūṭ</i> through meal tests; price deduction or <i>khiyār</i> to rescind for repeated

	breach of <i>ijārah</i>) and <i>ḥifẓ al-nafs</i> (inadequate nutrition)	non-conformity; public reporting as <i>amānah</i> to pilgrims
Low acceptance and poor quality of ready-to-eat meals (service-quality risk)	Threat to <i>ḥifẓ al-nafs</i> (inadequate food intake of elderly pilgrims) and <i>ḥifẓ al-dīn</i> (lack of energy to complete rituals)	Menu co-design with pilgrims' tastes and texture needs; improved heating and packaging; pre-departure education; acceptance rate monitored as a KRI (<i>maṣlahah</i> -oriented feedback)

Source: Authors' analysis based on the risk register (Figure 7), interviews, and focus group discussions.

Beyond Hajj-specific studies, these findings can also be compared with research from other Muslim countries. In contrast to Mohamed et al.,⁵² who found that halal supply chain management practices significantly strengthen halal integrity assurance in the Malaysian food industry, this study shows that in Indonesian Hajj catering, halal integrity is still treated largely as a compliance condition of the catering contract rather than as a risk that is actively monitored: none of the current KRIs (Figure 8) measure halal integrity along the chain. Likewise, in contrast to Aslan,⁵³ who found that Muslim consumers in Turkey rely on halal certification bodies to guarantee the quality, hygiene and safety of food, this study shows that certification alone cannot address the risks that dominate Hajj catering—time, temperature and distribution failures that arise after certified food leaves the kitchen—so that halal assurance must be extended from the product to the entire service process. Digital technologies reviewed for halal supply chains, such as traceability and real-time monitoring systems,⁵⁴ offer a practical route for this extension, and traceability models developed for Muslim countries (Dashti et al., 2024) could be adapted to the Hajj catering chain.

Contractual Governance: The Catering *Ijārah* through a *Fiqh al-Mu'āmalah* Lens

The Sharia-based mitigation strategies in Table 1 rest on the contractual relationship between the organizer and its caterers. Reading the 2026 operational architecture through *fiqh al-mu'āmalah* clarifies that the meal supply chain is constituted by an *ijārah* (service-procurement) contract between the Hajj organizer and its catering partners, in which KMHU Decree Number 43 of 2026 functions as the agreed specifications (*shurūṭ*) governing halal, hygiene, portion, and delivery standards. Within this contract, the risk register's assignment of each risk to a responsible party (the Provisioning Team or the Catering Provider; Figure 7) is, in *mu'āmalah* terms, an allocation of *ḍamān* (liability): the provider bears *ḍamān* for deviations in food safety and portion conformity, while the organizer retains *ḍamān* for supervision and timely distribution. The recommendation from the 1446 H/2025 National Working Meeting to review the contracts of providers failing to meet standards operationalizes this liability as a corrective, penalty-bearing mechanism rather than a mere administrative note, indicating that the *ijārah* already embeds a rudimentary *khiyār* (option to renegotiate or rescind) for non-conformity.

⁵² Mohamed et al., "The Effect of Halal Supply Chain Management on Halal Integrity Assurance for the Food Industry in Malaysia."

⁵³ Aslan, "The Influence of Halal Awareness, Halal Certificate, Subjective Norms, Perceived Behavioral Control, Attitude and Trust on Purchase Intention of Culinary Products among Muslim Costumers in Turkey."

⁵⁴ Budi Harsanto et al., "Digital Technology 4.0 on Halal Supply Chain: A Systematic Review," *Logistics* 8, no. 1 (2024): 21, <https://doi.org/10.3390/logistics8010021>.

Framed this way, the study's moderate maturity score (3.2 of 5) is not only an operational finding but a governance finding: the weakness in risk treatment and monitoring signals that *ḍamān* is presently enforced reactively (ex. post contract review) rather than preventively (ex. ante monitoring), carrying economic consequences such as repeat-season quality failures, penalty and re-procurement costs, and erosion of pilgrim *maṣlahah* and trust in a publicly funded service economy. Embedding the documented risk register and Key Risk Indicators into the contract as explicit specifications and monitoring covenants would align the *ijārah* with the *maqāṣid* objective of *ḥifẓ al-māl* (preserving both the pilgrims' and the state's wealth) alongside *ḥifẓ al-nafs*, thereby converting Sharia-compliant procurement from a normative aspiration into an enforceable instrument of Islamic economic governance. This directly answers calls to move the halal sector beyond formal Sharia compliance toward strategic, expectation-driven governance.⁵⁵

Positioned against prior literature, this study adapts the ISO 31000 framework to evaluate food services at large-scale religious gatherings. This adaptation complements existing literature that has predominantly focused on health risks and crowd management. It further contributes to Islamic economics and business scholarship by extending halal supply chain risk management, so far concentrated on commercial food industries, certification, and Islamic finance, into the operational governance of a large-scale, faith-based public service economy.⁵⁶

From a methodological perspective, the study illustrates how the combination of regulatory document analysis and expert judgment offers an efficient approach to risk management assessment in large-scale seasonal operational settings such as the Hajj pilgrimage, where large-scale primary data collection is challenging within a limited operational period. Other researchers studying risk management for similar religious mass gatherings such as Umrah, Kumbh Mela, or Arbaeen may replicate this approach, adapting it to the specific regulatory and cultural context of each country.

In practice, this research produces three deliverables that can be directly used by the Hajj organizers: (1) a documented risk register that maps the risks based on the process stages (planning, procurement, distribution, and service delivery); (2) an ISO 31000 implementation maturity checklist for annual evaluations; and (3) recommended Key Risk Indicators (KRIs) that can be integrated into the reporting systems of the Hajj Organizing Committee (PPIH) and the Ministry of Hajj and Umrah to support data-driven decision-making for the next Hajj season.

Conclusion

This study shows that the implementation of risk management based on ISO 31000 concerning meal arrangements for Indonesian Hajj pilgrims for the 2026 operations has reached a sufficient level of risk identification and analysis, thereby answering the study's first and second objectives, but risk treatment and monitoring are still at a moderate maturity level (scoring 3.2 on a 5-point scale). The findings confirm that Indonesian Hajj meal risk management remains responsive (reactive) and is not yet fully integrated into a formal framework: extreme risks cluster at the distribution and serving stages during the Armina peak, and they persist because

⁵⁵ Razali et al., "Beyond Sharia Compliance."

⁵⁶ Saber Yezli et al., "Gastrointestinal Symptoms and Knowledge and Practice of Pilgrims Regarding Food and Water Safety during the 2019 Hajj Mass Gathering," *BMC Public Health* 21, no. 1 (2021): 1288, <https://doi.org/10.1186/s12889-021-11381-9>; Majed M. Al-Hayani et al., "Trauma and Injuries Pattern During Hajj, 1443 (2022): A Cross-Sectional Study," *Cureus*, ahead of print, July 12, 2023, <https://doi.org/10.7759/cureus.41751>.

mitigation relies on ad hoc complaint handling rather than documented treatment and monitoring. Beyond its operational reading, the study reframes Hajj meal provision as a matter of Islamic economic governance: the organizer–caterer relationship is an *ijārah* contract in which the allocation of risk constitutes *ḍamān*, so that embedding documented risk registers and Key Risk Indicators into contractual monitoring serves the *maqāṣid* objectives of *ḥifẓ al-nafs* and *ḥifẓ al-māl* while safeguarding pilgrim maṣlahah and public funds within Indonesia's halal service economy. Its contribution therefore sits within the scholarship on halal supply chain governance and *fiqh al-mu'āmalah* rather than within operational risk management alone. The high concentration of risk during the distribution and serving stages, especially during the peak period in Armina, shows the need to strengthen the preventive mitigation mechanism through systematically documented risk registers and Key Risk Indicators (KRIs).

Theoretically, this study enriches Islamic risk management theory in three ways. First, it extends ISO 31000 by adding a normative layer in which each risk is classified not only by likelihood and impact but also by the *maqāṣid* objective it threatens, so that contamination or doubtful-sourcing risks are recognized as threats to *ḥifẓ al-dīn* and *ḥifẓ al-nafs* rather than merely as quality deviations. Second, it links Supply Chain Risk Management with the concept of halal integrity by showing that, in the Hajj ecosystem, operational failures in distribution and storage simultaneously become halal-integrity and spiritual risks. Third, it positions the *ijārah* contract and the principle of *ḍamān* as the governance mechanism through which risk treatment is assigned and enforced, thereby moving Islamic risk management from a descriptive ethical discourse toward an operational, auditable model.

Managerially, the Ministry of Hajj and Umrah (which took over Hajj administration from the Ministry of Religious Affairs) is advised to (1) make a standardized *Maqāṣid*-based risk register and Key Risk Indicators a mandatory annex to every catering contract, with performance penalties and incentives tied to KRI thresholds; (2) require time-temperature records and halal traceability documents from Saudi caterers for all ready-to-eat and Armina meals; (3) integrate the WhatsApp complaint channel and the Hajj call center into a single digital dashboard so that incidents are logged, treated and closed within defined response times; and (4) conduct joint pre-season risk workshops with catering partners. Catering providers in Saudi Arabia are advised to establish halal assurance officers on each production line, schedule production in shorter batches before the Armina peak to limit holding time, and verify the halal status of locally sourced ingredients through recognized certification bodies.

This study has several limitations. It covers only one Hajj season (2026) and the Regular Hajj scheme, and the risk scores rely on documentary data and on the qualitative judgment of a seven-member expert panel rather than on actual incident records or the field experience of pilgrims and catering partners, so the findings may not be generalizable to other seasons or to the Special Hajj scheme, and may not capture inter-seasonal variations driven by changes in Saudi policy, extreme weather or regional geopolitics. Future research should collect primary data from pilgrims and catering partners through surveys and in-depth interviews; validate the proposed model quantitatively, for example by testing the relationships between risk governance practices, halal integrity and pilgrim satisfaction using SEM-PLS; use multi-season incident data to build predictive KRI models; extend the scope to the Special Hajj and Umrah schemes; and compare the model with the catering governance of other countries such as Malaysia and Turkey.[]

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