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# A Risk-Based Auditing Framework for Halal Certification Systems: Bridging Gaps in the Current Halal Assurance Practices

Rahmawati Umar[1]*, Idris Parakkasi[2]
[1]Sekolah Tinggi Ilmu Ekonomi YPUP
[2]Universitas Islam Negeri Alauddin
**Corresponding Author:** Rahmawati Umar, rahmawatiumar@stie.ypup.ac.id

A R T I C L E I N F O

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A B S T R A C T

As the global halal industry expands across food, pharmaceuticals, and cosmetics, the need for credible, efficient, and scalable halal certification systems has become increasingly urgent. Central to these systems is the halal audit, which verifies compliance with religious and regulatory standards. However, current halal auditing practices remain uniform and checklist-based, lacking differentiation based on the relative risk of ingredients, processes, or suppliers. In contrast, risk-based auditing has become a key component in modern quality and management systems such as ISO 9001, ISO 31000, and ISO 22000. Despite this trend, risk-based methodologies have yet to be formally integrated into halal certification protocols. This conceptual study addresses that gap by proposing a risk-based halal auditing framework grounded in international risk management principles and tailored to the operational and religious realities of halal certification. The framework incorporates risk identification, evaluation, classification, and prioritization mechanisms, enabling auditors to allocate resources strategically. By aligning audit intensity with assessed risk levels, the model promotes greater efficiency and maintains—if not enhances—the integrity of halal assurance systems. The study contributes to both theoretical discourse and practical applications in halal governance and offers regulators, certifying bodies, and industry stakeholders a tool for optimizing certification practices. Limitations and opportunities for empirical validation are also discussed.

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## INTRODUCTION

The global halal industry has transformed significantly, now yielding over USD 2 trillion in consumer spending, with projections exceeding USD 3 trillion by 2026, driven by both Muslim demographics and ethical demands from non-Muslim consumers (Kassim & Polar, 2024). This growth highlights the relevance of halal certification as a critical compliance and marketing tool, ensuring adherence to sharia law while enhancing market access (Hanim & Noorman, 2023).

Central to this certification is the Halal Assurance System (HAS), which serves as a structured framework for maintaining halal standards throughout production and distribution. Notably, Indonesia's HAS 23000, developed by LPPOM MUI, exemplifies rigorous audit practices alongside similar frameworks globally, such as Malaysia's MS1500:2019 (Osman & Saeed, 2023; Tieman, 2020). These systems enforce traceability, documentation, and periodic audits—practices integral for the ongoing assessment of halal compliance (Novianti et al., 2021). Through these structured evaluations, halal control measures are continually monitored and improved, ensuring a robust halal assurance strategy across various jurisdictions.

Existing halal auditing practices exhibit significant structural limitations primarily due to the reliance on uniform audit protocols. Most certification systems apply standardized inspection procedures regardless of the specific risks associated with various raw materials or processes, leading to inefficient resource allocation and potential lapses in compliance (Maulana et al., 2023). For instance, treating a plant-based flavoring agent similarly to porcine-derived gelatin disregards the heightened risk posed by the latter, which can increase the likelihood of consumer trust violations through mislabeling or contamination incidents. However, specific empirical evidence supporting this statement needs to be cited accurately, which is absent in the referenced sources here.

Moreover, the administrative burdens and inefficiencies necessitated by a checklist approach can undermine market credibility and drive up operational costs, resulting in an over-auditing or under-auditing dilemma (Schreuder & Smuts, 2023). High-profile halal scandals underscore these systemic flaws, revealing how inadequate auditing can lead to significant repercussions, including regulatory sanctions and product recalls, thereby jeopardizing both businesses and consumer confidence in halal certifications. These claims are reinforced by our current understanding of audit failures in the industry. In today's interconnected marketplace, where supply chains are complex and global, the limitations of static audit models become even more evident, necessitating an urgent reevaluation and adaptation to ensure the integrity of halal products (Manan et al., 2017).

In contrast, risk-based auditing has become a foundational element in modern management systems across various domains. International standards such as ISO 31000:2018 (Risk Management), ISO 19011:2018 (Auditing Management Systems), and ISO 22000:2018 (Food Safety Management Systems) emphasize the need to evaluate audit targets based on the probability of non-compliance (likelihood) and the severity of its consequences (impact). This

method allows organizations to prioritize audit focus on areas with higher risk exposure, thereby improving efficiency, responsiveness, and credibility. In sectors such as pharmaceuticals, banking, and environmental governance, risk-based auditing has proven instrumental in enhancing compliance outcomes while optimizing resource deployment.

Theoretical frameworks positing that audit systems facilitate compliance and foster institutional trust are increasingly relevant in the halal industry. Halal certifications operate at the intersection of theological mandates and regulatory oversight, necessitating an intricate balance among legal, ethical, and religious considerations (Izzah & Irfany, 2024). However, a significant gap exists in the application of risk-sensitive methodologies within halal auditing practices despite the proven efficacy of such approaches in other regulatory contexts (Purusottama et al., 2023). The current standardized audit models fail to differentiate between various risk profiles associated with different ingredients and processes, potentially compromising both the operational efficiency of certification systems and the credibility of halal governance (Secinaro & Calandra, 2020).

Most existing research has concentrated on elements such as standard development and consumer awareness while overlooking innovations in audit methodologies, particularly those that could integrate risk-based principles tailored for halal contexts, such as ingredient verification and contamination controls (Ismail, 2024). The absence of a formalized model for combining these principles with halal-specific audit processes stands as a critical oversight, emphasizing the need for scholarly attention in this area. Given the growing concerns about product integrity and consumer trust, this research gap presents an urgent opportunity for developing more robust auditing frameworks that address the complexities inherent in halal certification systems (Adham et al., 2022).

This research gap is especially problematic in light of recent regulatory developments, such as Indonesia's Law No. 33/2014 on Halal Product Assurance, which mandates that all consumer products marketed in the country must eventually be halal-certified. The institutionalization of halal certification on a national scale requires auditing frameworks that are not only credible and consistent, but also scalable and efficient—particularly given the sheer volume of products, SMEs, and supply chains involved. Without differentiated audit strategies, regulatory bodies may struggle to implement effective oversight, leading to bottlenecks, delays, and potential regulatory failure.

This study responds to that gap by proposing a conceptual framework for risk-based auditing within halal certification systems, with a specific emphasis on integrating established risk management standards into the context of HAS 23000. The framework is designed to classify audit components—such as ingredients, processes, documentation, and suppliers—into tiered risk levels and to assign auditing priorities accordingly. It includes mechanisms for risk identification, semi-quantitative evaluation, classification, and audit planning, enabling certifying bodies to tailor audit procedures based on the calculated risk profile of each entity.

The contribution of this study is threefold. Theoretically, it advances the literature on halal assurance systems by introducing a normative audit model grounded in risk governance theory. Practically, it provides halal certification bodies and policymakers with a tool for increasing audit efficiency and reliability. Strategically, it offers a foundation for potential international harmonization of halal audit procedures through risk-aligned benchmarks. The framework also has the potential to support digital innovation (e.g., blockchain traceability, AI screening tools) by providing a structured decision-making basis for automated audit triage systems.

The remainder of this article is structured as follows. Section 2 presents a comprehensive review of relevant literature on halal certification systems, existing auditing practices, and the principles of risk-based auditing. Section 3 describes the conceptual methodology employed in constructing the proposed framework. Section 4 details the framework itself, including its components, logic, and classification mechanisms. Section 5 discusses the theoretical, practical, and regulatory implications of the model, and outlines limitations and future research directions. Section 6 concludes with a synthesis of the study's contributions and its relevance for the evolving global halal ecosystem.

## THEORETICAL REVIEW

Halal certification serves as a vital mechanism for ensuring that products, processes, or services comply with Islamic dietary laws and ethical guidelines. This formal recognition is especially critical in halal-sensitive markets like Southeast Asia, the Middle East, and parts of Europe, where Muslim consumers seek assurance of religious compliance (Sadiyah & Erawati, 2024). The significance of halal certification extends beyond fulfilling consumer expectations; it also opens avenues for businesses seeking to access these lucrative markets, thus intertwining religious observance with commercial opportunity (A. H. Aziz & Moniruzzaman, 2022).

At the operational level, halal certification is governed by multifaceted frameworks that integrate religious jurisprudence with quality assurance and supply chain governance principles. One of the foremost frameworks is the Halal Assurance System (HAS 23000), developed by the Indonesian Assessment Institute for Foods, Drugs, and Cosmetics (LPPOM MUI). This framework details mandatory components for an effective halal management system, which includes establishing a halal policy, enforcing material control, maintaining production facility standards, adhering to written procedures, implementing traceability systems, and conducting internal audits (Oemar et al., 2022). HAS 23000 aligns with international food safety standards while being anchored in foundational religious principles, ensuring comprehensive compliance with halal standards (Novianti et al., 2022).

Similar certification systems have been established globally, including Malaysia's MS1500:2019, which outlines guidelines for producing, preparing, handling, and storing halal food. This system is implemented by the Department of Islamic Development Malaysia (JAKIM) and is recognized both domestically and internationally (Adham et al., 2022). In the Gulf Cooperation Council (GCC)

region, the GSO 2055-2 standard harmonizes halal product requirements across member countries, while specific regulations such as the UAE's UAE.S 2055-1 and the SMIIC standards set by the Organisation of Islamic Cooperation (OIC) provide critical specifications and promote mutual recognition (Noordin, 2021).

Despite the foundational role of audits in these certification systems, challenges persist within halal auditing practices. Most audits rely on uniform protocols that fail to differentiate between varying risk profiles associated with different entities. This one-size-fits-all approach presents evident inefficiencies and may hinder the scalability of certification practices within expansive ecosystems (Najmi et al., 2023). Auditors typically conduct assessments focused predominantly on compliance verification, which unfortunately overlooks the complexities inherent in halal production processes and the unique risks that may arise from specific ingredient combinations and supply chain intricacies (Hasan & Latif, 2024).

A notable concern in this context is the uniform treatment of low-risk and high-risk materials, which does not account for the substantial differences in potential for non-compliance. For instance, a halal-certified bottled water company might undergo the same audit protocol as a manufacturer of complex meat products, despite the latter presenting a greater risk profile due to ingredient diversity, potential supplier discrepancies, and biological contamination hazards (Ikawati & Rahman, 2022). This generalized methodology can impose burdensome costs on businesses—especially small and medium enterprises (SMEs)—without corresponding returns in compliance assurance (Purbasari et al., 2023). The lack of clear risk assessment methodologies in audit practices prevents certification bodies from determining appropriate priorities, frequencies, and audit depths based on established empirical indicators, complicating the situation further (Novianti et al., 2022).

Another major shortcoming in current halal auditing practices is the inherent subjectivity in the evaluation process. Variability in auditors' interpretations of standards—shaped by individual expertise, training, and regional differences—can yield inconsistent outcomes. This inconsistency diminishes the credibility of halal certifications and complicates mutual recognition across different jurisdictions (Anwar et al., 2024). Although efforts to standardize audit procedures have been initiated through auditor certification schemes and audit manuals, these measures have not fully resolved the issue of interpretive discretion that continues to characterize on-site evaluations (Anggi & Rahayu, 2022).

Recent studies emphasize that while many businesses comply with halal standards on a technical level, existing audit methodologies often lack the analytical depth necessary for effective risk detection and prevention (Ibrahim et al., 2023). As halal-certified products proliferate and grow in complexity, the limitations of static, checklist-based auditing methods become increasingly pronounced, indicating a need to reevaluate existing practices to enhance the integrity of halal certifications and consumer trust (Oemar et al., 2023).

Risk-based auditing (RBA) is a methodology increasingly recognized as essential for enhancing the effectiveness of audit practices across various sectors,

including financial services, food safety, and public health. RBA directs audit resources toward areas with the highest risk of non-compliance, thus providing a more strategic means of evaluation and oversight (Alijoyo, 2021b). This approach aims to improve audit efficiency and achieve better governance outcomes by focusing on the actual threats posed by various processes, materials, and organizational structures, rather than applying the same scrutiny across the board (Harsanto et al., 2024).

The foundational principles of RBA are encapsulated in ISO 31000:2018, which offers a comprehensive framework for understanding and managing risks, defining risk as the "effect of uncertainty on objectives" (Widianti et al., 2024). ISO 19011:2018 complements these principles by furnishing guidelines specifically for auditing management systems with an emphasis on risk considerations in audit planning and execution. This alignment ensures that auditing methodologies are not only compliant with standards but are also dynamically responsive to the various levels of risk associated with different entities and processes (Mamuaja & Cahyono, 2024).

Furthermore, ISO 22000:2018, which governs food safety management systems, leverages RBA principles through the integration of hazard analysis and critical control point (HACCP) approaches to mitigate foodborne risks effectively. This paradigm shift toward recognizing risk variation allows organizations to prioritize auditing efforts based on a systematic assessment of various factors, leading to a more nuanced understanding of compliance and safety risks (Al-Mhdawi et al., 2023). For instance, in the pharmaceutical sector, RBA dictates that inspections of manufacturing facilities are prioritized based on product sensitivity and compliance history, echoing the necessity for risk-aware auditing frameworks across different industries (Khan et al., 2020).

In the halal certification context, despite the evident synergy between RBA and halal auditing—both aiming to uphold compliance with legal and religious standards and enhance process integrity—there remains a noticeable absence of RBA application. This oversight highlights a broader lag in methodological innovation in halal auditing, as the current frameworks predominantly adopt a checklist-based approach that overlooks the nuanced risk profiles across various products and processes (Adiningtyas & Yunus, 2024). Existing halal standards articulate compliance requirements but lack systematic approaches for risk classification and prioritization. This gap becomes particularly critical given the increasing complexity of the halal supply chain and the diverse risks presented by different ingredients and suppliers (Alijoyo, 2021a).

A more structured audit methodology that integrates RBA principles could potentially rectify these deficiencies. Current halal audit practices, which typically rely on uniform inspection protocols regardless of the inherent risk associated with particular substances, remain insufficient. For example, the same auditing criteria may be applied to a straightforward bottled water product as to a complex meat product, despite the latter's significantly higher risk of non-compliance due to ingredient variety and potential for cross-contamination (Alijoyo, 2021a). Such inefficiencies not only create unnecessary burdens for

businesses, especially SMEs, but also hinder the ability of certifying bodies to allocate resources effectively.

Moreover, the subjectivity inherent in traditional audit practices often results in inconsistent outcomes, further complicating the auditing landscape. Auditors' interpretations can fluctuate based on their training and regional variations in practice, diminishing trust in the credibility of halal certifications (Indarti et al., 2020). While strides toward standardization have been made, such efforts have yet to fully address the dynamic nature of halal auditing, which should evolve in response to emerging methodologies and technological advancements such as blockchain, AI, and IoT (Hendayani & Febrianta, 2020).

This study posits that the introduction of a conceptual framework for risk-based halal auditing—grounded in established risk management paradigms but tailored to the specific operational, religious, and institutional dimensions of halal certification—could greatly enhance integrity and public trust in halal products. By emphasizing audit differentiation, resource optimization, and strategic foresight without undermining religious principles, this approach promises to address many of the limitations currently hampering halal certification systems (Norimarna, 2021).

In conclusion, adopting RBA in halal auditing offers a vital opportunity to improve the robustness of certification processes, ensuring that they are not only compliant but also relevant in an evolving marketplace. Establishing a formalized risk assessment methodology can enable certifying bodies to prioritize their auditing efforts based on empirical risk indicators, thereby enhancing the overall effectiveness and credibility of halal certification.

## METHODOLOGY

This study adopts a conceptual research methodology aimed at developing a structured framework for risk-based auditing within halal certification systems. Rather than relying on empirical data collection, the research draws on analytical reasoning, content analysis of existing standards, and theoretical synthesis. This approach is particularly suitable for exploring normative and strategic innovations in governance systems, especially in areas—such as halal auditing—where procedural reforms have been limited but are urgently needed.

The framework was constructed through a multi-step process. First, an extensive review of both academic literature and official regulatory documents was conducted. The academic literature covered halal certification systems, auditing practices, risk-based management, and audit methodologies. Primary sources included peer-reviewed articles, books, and technical reports published in journals such as Food Control, Journal of Islamic Marketing, Journal of Risk Research, and Total Quality Management. Regulatory and professional documents included HAS 23000 from LPPOM MUI (Indonesia), MS1500:2019 from JAKIM (Malaysia), GSO 2055-2 from the Gulf Standards Organization, and the international standards ISO 31000:2018, ISO 19011:2018, and ISO 22000:2018.

The literature review served two purposes: first, to understand the structural and procedural dimensions of existing halal auditing systems; second,

to extract principles and mechanisms from risk-based auditing approaches that could be adapted to the halal context. For halal certification systems, particular attention was given to audit procedures, material control requirements, frequency guidelines, and auditor competency frameworks. From risk-based standards, the focus was on methodologies for identifying risk sources, calculating risk levels, and prioritizing audit actions based on risk exposure.

Following the literature synthesis, a comparative analysis was performed to identify areas of alignment and divergence between halal auditing practices and risk-based auditing principles. This comparative process revealed several parallels, such as the shared emphasis on preventive controls, documentation integrity, and traceability. However, it also highlighted key gaps: notably, the absence of structured risk categorization in halal audits and the lack of formalized mechanisms for audit prioritization based on risk scores.

To address these gaps, the study adopted a model-building approach, drawing upon the theoretical and normative elements identified in the previous stage. The construction of the framework was guided by the following design logic. First, it had to be compatible with existing halal standards, particularly HAS 23000, to ensure practical applicability. Second, it needed to reflect the core logic of risk-based auditing, specifically the dual-axis model of evaluating risk as a function of likelihood and impact. Third, the framework had to include a mechanism for translating risk assessment into actionable audit strategies, such as differentiated sampling, frequency adjustment, and targeted site inspections.

The first step in the framework development involved the identification of halal-relevant risk domains. Based on both standards and literature, four domains were defined: ingredient risk, process risk, documentation risk, and supplier risk. For each domain, risk indicators were identified. For example, ingredient risk could be determined by the presence of animal-derived materials, alcohol solvents, or flavor enhancers with ambiguous origins. Process risk could involve shared production lines without adequate cleaning validation, while documentation risk might relate to missing certificates of analysis or outdated halal declarations. Supplier risk could involve vendors that lack recognized halal certification or have a history of non-compliance.

Once the domains and indicators were established, a semi-quantitative risk evaluation model was developed. This model used a scoring system where each risk was assessed on two dimensions: the likelihood of non-compliance (ranging from rare to very likely) and the impact of non-compliance (ranging from negligible to catastrophic). The product of these scores resulted in a risk score (RS), which served as the basis for classification. A three-tier classification system was adopted: low risk (RS 1–5), moderate risk (RS 6–12), and high risk (RS 13–25).

With the classification system in place, the next phase of the framework involved defining audit strategies tailored to each risk tier. For low-risk items, standard documentation review and occasional sampling were deemed sufficient. Moderate-risk items warranted enhanced document validation and more frequent sampling. High-risk items required full traceability checks, site inspections, laboratory testing, and possibly third-party verification. These

strategies were designed to reflect both the operational complexity and religious sensitivity of halal certification.

To ensure the internal coherence and plausibility of the framework, a validity check was conducted through triangulation. The conceptual model was cross-verified with multiple sources: first, against standard auditing protocols from ISO 19011 and ISO 22000; second, with actual audit procedures described in halal certification manuals (e.g., LPPOM MUI audit guidelines); and third, against academic case studies of audit failures and halal integrity breaches. This triangulation process confirmed that the proposed framework was not only theoretically sound but also responsive to real-world auditing challenges.

While the framework remains conceptual in nature, it is designed to be operationalizable in applied settings. Its components—risk domains, scoring matrix, classification tiers, and audit strategies—can be adapted by certification bodies, integrated into digital audit tools, or used as the basis for auditor training programs. Moreover, the model provides a starting point for future empirical validation, whether through pilot implementation, simulation studies, or expert interviews with halal auditors.

By using a conceptual model-building methodology rooted in comparative analysis, standard synthesis, and theoretical triangulation, this study delivers a framework that fills a methodological void in halal assurance systems. The approach allows for structured innovation without requiring immediate field data, which is especially important in regulated environments where empirical access may be limited. It also ensures that the resulting model is theoretically grounded, practically oriented, and policy-relevant—a necessary combination for catalyzing change in an industry that sits at the intersection of faith, law, and commerce.

## RESEARCH RESULTS

### *Risk-Based Framework for Halal Certification Auditing*

This section presents the conceptual framework developed to introduce risk-based auditing into halal certification systems. Drawing on principles from ISO risk and audit standards, as well as halal certification protocols such as HAS 23000, the framework is designed to facilitate differentiated audit strategies based on the assessed risk profile of materials, processes, documentation, and suppliers. The model consists of five stages: (1) Risk Identification, (2) Risk Evaluation, (3) Risk Classification, (4) Audit Strategy Development, and (5) Audit Execution and Feedback. Each component builds upon the last to guide auditors in allocating attention and resources based on the likelihood and impact of non-compliance. The architecture of the proposed framework is illustrated in the flowchart below:

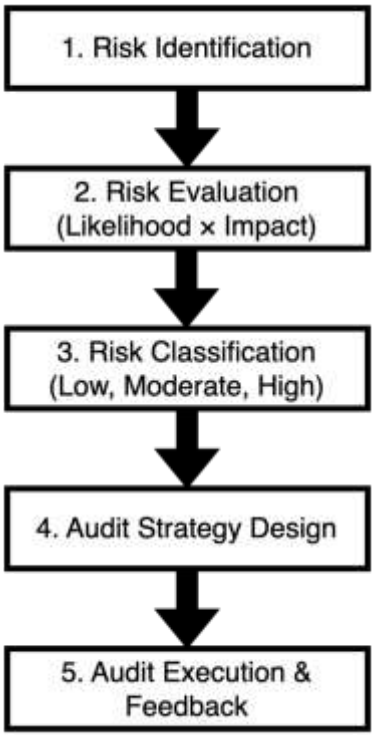


*Figure 1. Conceptual Framework for Risk-Based Halal Auditing*

This process-oriented structure ensures that audit strategies are no longer uniform but are tailored to risk levels, thus allowing certification bodies to optimize both time and technical effort. The first step of the framework involves the identification of potential halal risk factors within the auditee's operation. Based on literature synthesis and standard analysis, four core risk domains were established:

1. **Ingredient Risk**: Focuses on the nature and source of raw materials. Ingredients derived from animals, fermentation processes, or alcohol-based solvents are considered higher risk than plant-based or synthetic components with known halal status.
2. **Process Risk**: Addresses risks emerging from production practices, especially those involving shared equipment, lack of cleaning validation, or outsourced manufacturing.
3. **Documentation Risk**: Involves the reliability and completeness of documents such as halal certificates, Material Safety Data Sheets (MSDS), and Certificates of Analysis (COA).
4. **Supplier Risk**: Refers to the credibility and certification status of upstream suppliers. Vendors without recognized halal certification or a history of non-compliance increase overall risk exposure.

Each domain is assessed independently but may influence the aggregate risk score used for classification. After identifying potential risk factors, each is evaluated on two axes:

- **Likelihood (L)**: The estimated probability that a given non-compliance or deviation from halal standards could occur.
- **Impact (I):** The severity of consequences if such non-compliance were to materialize.

Both parameters are scored on a scale from 1 (low) to 5 (very high). The **Risk Score (RS)** for each item is calculated using a simple multiplicative formula: RS = L × I

This yields scores ranging from 1 (least critical) to 25 (most critical), allowing auditors to rank audit targets based on quantified risk.

***Table 1. Likelihood and Impact Scales for Risk Evaluation***

| Level | Likelihood (L) | Impact (I) |
|---|---|---|
| **1** | Rare | Negligible impact on halal integrity |
| **2** | Unlikely | Minor non-compliance; easily correctable |
| **3** | Possible | Moderate effect; internal process failure |
| **4** | Likely | Significant non-conformance; potential recall |
| **5** | Very likely | Severe breach; religious or legal violation |

This scoring mechanism provides a transparent and replicable method for evaluating risks, consistent with the logic of ISO 31000 and ISO 22000. Based on the Risk Score, audit components are classified into one of three tiers:

- **Low Risk (RS = 1–5)**
- **Moderate Risk (RS = 6–12)**
- **High Risk (RS = 13–25)**

This classification enables auditors to group audit targets and apply differentiated audit protocols accordingly.

***Table 2. Risk Classification Matrix***

| Risk Score (RS) | Risk Tier | Typical Audit Components | Examples |
|---|---|---|---|
| 1–5 | Low | Basic verification | Salt, water, sugar, bulk grain suppliers |
| 6–12 | Moderate | Enhanced documentation review | Flavors, preservatives, plant extracts |
| 13–25 | High | Intensive audit with site visit or testing | Gelatin, enzymes, outsourced processing |

This matrix also serves as a basis for resource allocation, guiding the depth and breadth of audit activities.

Once the classification has been established, auditors can apply targeted strategies for each risk tier:

- **Low Risk:**
  - Standard document checks
  - Desk-based review
  - No sampling or lab testing required unless anomalies are found
- **Moderate Risk:**
  - Detailed review of documentation
  - Periodic sampling
  - Verification of supplier halal status
- **High Risk:**
  - Full traceability audit
  - On-site inspection
  - Laboratory analysis
  - Independent third-party certification validation

This stage translates abstract risk scores into operational audit plans that are proportional and risk-responsive. The final component of the framework involves executing the audit plan and integrating findings into a feedback system. Audit outcomes—such as confirmed non-compliance, documentation gaps, or supplier inconsistencies—are recorded in a risk repository, which is used to update future audit planning cycles. This ensures that the audit system evolves in a learning-oriented manner.

Certifying bodies may also implement audit frequency adjustments based on repeated high-risk findings, with a system that flags entities for more frequent inspections if risk patterns persist. This creates a virtuous cycle of compliance reinforcement, regulatory responsiveness, and continuous system improvement. Several features distinguish this framework from conventional halal audit models:

1. **Risk Sensitivity**: Introduces structured differentiation of audit effort based on material and process risk.
2. **Scalability**: Can be applied to diverse sectors (food, cosmetics, pharmaceuticals) and firm sizes.
3. **Standards Compatibility**: Aligns with HAS 23000 and ISO 19011 audit principles, facilitating institutional integration.
4. **Traceability Enhancement**: Strengthens documentation and supply chain transparency by making traceability a key audit factor.

The framework maintains full compliance with **religious obligations,** ensuring that critical elements of halal assurance—such as absence of *haram* inputs, proper slaughter procedures, and integrity of documentation—are preserved within a modernized audit structure.

## DISCUSSION

The risk-based halal auditing framework proposed in this study represents a significant shift in how halal certification audits can be conceptualized and operationalized. It challenges the long-standing reliance on

checklist-based, uniform auditing procedures and introduces a structured mechanism for prioritizing audit efforts based on empirical risk dimensions. This section evaluates the implications of the framework across four critical domains: (1) comparative analysis with traditional halal auditing practices, (2) theoretical contributions to the study of audit governance in religious regulatory systems, (3) practical and institutional relevance, and (4) limitations and directions for future research.

Conventional halal auditing is built around a standardized approach. Auditors apply a fixed set of procedures to all audited entities regardless of the actual risk posed by their materials, processes, or suppliers. This uniformity, while administratively straightforward, imposes several constraints. It leads to inefficient resource allocation, particularly when low-risk operations (e.g., bottled water production) are audited with the same rigor as high-risk facilities (e.g., animal-based gelatin manufacturing). Moreover, it increases the risk of audit fatigue among both auditors and businesses, undermining the system's credibility and scalability.

By contrast, the proposed framework introduces structured risk differentiation into the audit process. Rather than applying equal scrutiny across the board, the framework allows auditors to tailor their strategies according to the level of risk. This is achieved through a semi-quantitative scoring mechanism that evaluates both likelihood and impact, consistent with ISO 31000 and ISO 22000 principles. In practical terms, this means that high-risk inputs like porcine-derived enzymes would trigger more rigorous oversight—such as lab testing and supplier verification—whereas low-risk materials like water or sugar might only require documentation checks.

Such differentiation not only improves audit efficiency but also enhances the effectiveness of compliance monitoring. Auditors can concentrate their efforts where non-compliance is more likely and more damaging, thus increasing the probability of detecting material violations. From the auditee's perspective, the approach is more proportionate and justifiable, which may improve cooperation and reduce resistance to regulatory oversight.

From a theoretical standpoint, this framework contributes to the literature on audit governance, risk regulation, and religious compliance systems. Audits are not merely technical procedures but institutional instruments that mediate between norms (e.g., shariah compliance) and operational reality. In the context of halal regulation, auditing plays a unique role by enforcing religious rules through secular tools such as traceability checks, documentation systems, and on-site inspections. As such, halal auditing operates within a hybrid governance domain—combining elements of bureaucratic, professional, and theological authority.

The proposed framework enhances halal auditing by integrating a risk-governance layer, aligning with principles of regulatory proportionality and evidence-based oversight prevalent in sectors like public health and environmental law. By introducing measurable risk criteria into the audit planning process, it addresses critiques surrounding the methodological rigor and subjectivity of halal audits(Islam et al., 2023; Nursita et al., 2024).

This framework also provides a fresh perspective on religious compliance within a data-informed regulatory ecosystem. While the religious legitimacy of halal standards remains unwavering, their enactment can—and should—be informed by adaptive strategies that improve efficiency without compromising theological tenets. Consequently, this approach resonates with responsive regulation theory, which posits that regulatory interventions should be adjusted based on the behavior and risk profiles of regulated entities (Yuli & Wojtyla, 2020).

The emphasis on risk-based auditing (RBA) as a pathway to enhance halal compliance addresses gaps identified in the existing literature. Scholars suggest that preventing misconduct in halal practices necessitates a structured approach that prioritizes high-risk elements within the halal supply chain (Nahidloh & Qadariyah, 2021; Yudha et al., 2020). By acknowledging the synchronized roles of government, industry, and academia, this framework enables comprehensive cooperation to advance halal industry objectives and strengthen overall compliance (Al-Mahmood & Fraser, 2023).

Finally, leveraging technological advancements such as blockchain and IoT can significantly improve the scalability of halal auditing practices, ensuring that emerging threats are promptly addressed, as discussed by (Susanty et al., 2024). In conclusion, by fostering a risk-based framework tailored specifically to halal auditing, we can anticipate a more credible and effective halal assurance system, bolstering consumer trust and compliance integrity (Arrahman & Yanti, 2022; A. R. A. Aziz & Hussin, 2024).

The adoption of this risk-based framework has important practical implications for halal certification bodies, auditors, regulators, and producers. For certifying agencies, the framework offers a tool to manage increasing workloads in a scalable and strategic manner. Agencies in high-volume jurisdictions such as Indonesia, Malaysia, and the United Arab Emirates often face resource constraints due to surging demand for certification services. A risk-based system enables these institutions to triage audits, assigning their most experienced personnel to high-risk cases while automating or streamlining procedures for low-risk audits.

Auditors can also benefit from a clearer set of guidelines for risk assessment, which can reduce subjectivity and inconsistency in audit outcomes. The scoring matrix and classification tiers provide a transparent basis for audit decisions, which may enhance professional credibility and facilitate audit standardization across jurisdictions.

For businesses—particularly SMEs—a risk-based system could lead to cost savings and process clarity. Companies with straightforward, low-risk operations would no longer face the same audit burden as complex, high-risk manufacturers. This differentiation may increase acceptance of halal certification, reduce audit fatigue, and support greater integration of halal assurance systems into existing quality management programs.

At the regulatory level, the model can inform policy design by providing a framework for audit frequency modulation, resource planning, and performance monitoring. For example, national halal authorities could use

cumulative risk profiles to establish inspection schedules or decide on conditional certification renewals. The system could also support digitalization initiatives, such as AI-assisted pre-screening of audit targets or blockchain-based verification of supply chain data.

A further benefit of adopting a risk-based approach lies in its potential to facilitate international harmonization of halal certification systems. One of the persistent challenges in the global halal market is the lack of mutual recognition agreements (MRAs) among certification bodies, often due to differences in auditing practices, religious interpretations, or institutional capacity.

A shared risk-based framework could serve as a technical bridge, enabling regulatory alignment without requiring theological consensus on every issue. For example, countries may differ in their rulings on specific ingredients, but they can agree on general auditing procedures that prioritize high-risk processes and materials. This approach aligns with the broader objective of the Standards and Metrology Institute for Islamic Countries (SMIIC) to promote standardization across OIC member states.

Moreover, the transparency and replicability of the risk-based model make it suitable for cross-border application. Certification bodies can compare risk classification systems, audit procedures, and compliance outcomes using a common vocabulary and logic. This would not only enhance trust between institutions but also reduce the cost and complexity of halal trade, particularly for exporters seeking access to multiple jurisdictions.

Despite its contributions, this study has several limitations that must be acknowledged. First, the proposed framework is conceptual and has not yet been tested in operational environments. While its components are grounded in established standards and academic literature, empirical validation is needed to confirm its practicality, reliability, and stakeholder acceptance. Future studies could implement the model in pilot audits, simulation exercises, or expert focus groups to evaluate its effectiveness.

Second, the framework relies on a semi-quantitative risk scoring system, which, while transparent, may still involve a degree of subjectivity—particularly in evaluating likelihood and impact scores. Developing standardized scoring rubrics and training auditors in their use will be essential to ensure consistency.

Third, the current model focuses on four risk domains—ingredients, processes, documentation, and suppliers—which are well-established in the food sector but may not fully capture risk dimensions in other halal-certified industries such as pharmaceuticals, cosmetics, or logistics. Future adaptations of the framework could include sector-specific risk indicators or modular components tailored to industry-specific concerns.

Fourth, the model does not yet incorporate real-time data or dynamic risk adjustments, features that are increasingly relevant in the context of Industry 4.0 and digital halal ecosystems. Integrating the framework with digital platforms—such as blockchain for traceability or AI for document screening—could enhance its responsiveness and scalability.

Finally, broader adoption of the model will depend on institutional buy-in, including from religious authorities, industry stakeholders, and

policymakers. While the framework preserves the theological core of halal certification, its operational changes may require new guidelines, training curricula, and possibly updates to national certification laws or standards. These institutional challenges should be explored in future interdisciplinary research involving legal scholars, Islamic jurists, and regulatory economists.

## CONCLUSIONS AND RECOMMENDATIONS

This study has developed and presented a conceptual framework for risk-based auditing in halal certification systems, responding to a critical gap in both scholarly literature and industry practice. While halal certification has become an essential component of global food and consumer goods regulation, its auditing mechanisms have remained largely static—relying on uniform, checklist-driven procedures that treat all entities, materials, and processes with equal scrutiny. Such an approach is increasingly insufficient in a world where halal supply chains are growing in volume, complexity, and strategic significance.

The proposed framework draws on principles from international standards such as ISO 31000, ISO 19011, and ISO 22000, integrating them with halal-specific risk domains related to ingredients, processes, documentation, and suppliers. By introducing a structured, semi-quantitative scoring system for evaluating risk based on likelihood and impact, the framework enables the classification of audit targets into low, moderate, and high-risk categories. These categories then inform differentiated audit strategies—ranging from basic document checks to intensive traceability assessments and lab testing—thereby improving both the efficiency and the integrity of halal certification processes.

Beyond its practical utility, the framework contributes theoretically to the study of governance in religious regulatory systems, positioning halal auditing as a domain where faith-based mandates can be operationalized through evidence-based oversight. The model aligns with emerging approaches to responsive and proportional regulation, offering a way to reconcile theological rigor with strategic adaptability. In doing so, it bridges the gap between normative religious compliance and the technical demands of modern risk management.

The framework also holds significant implications for regulatory harmonization across national and international halal certification bodies. A risk-based approach offers a common technical foundation that can facilitate cooperation between certifying institutions—even in the absence of full consensus on all religious interpretations. As global trade in halal products continues to expand, such harmonization becomes increasingly critical to reducing redundancy, minimizing transaction costs, and building consumer and institutional trust.

Nevertheless, the model remains conceptual and requires empirical validation. Future research should focus on piloting the framework in real-world audit scenarios, testing its usability, consistency, and stakeholder acceptance. Further refinements may be necessary to adapt the model to sector-specific contexts such as pharmaceuticals, cosmetics, or halal logistics. Additionally,

opportunities exist to integrate the framework with digital auditing tools, such as blockchain-based traceability systems or AI-driven document screening.

In conclusion, this study provides a timely and practical contribution to the evolution of halal assurance systems. By embedding risk-based thinking into audit protocols, it offers a path forward for more efficient, scalable, and credible halal certification—without compromising the religious principles that underpin its legitimacy.

## FURTHER STUDY

Further research is needed to test the validity and implementation of this risk-based halal audit framework in real-world contexts. Piloting in sectors such as food, cosmetics, pharmaceuticals, and halal logistics will help assess its consistency, effectiveness, and acceptance by auditors and industry players. In addition, in-depth studies can explore the integration of this framework with digital technologies such as blockchain systems and artificial intelligence to enhance audit transparency and efficiency.

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