

Inspecting the Practices of Halal Risk Control Among Large and Medium-Sized Halal Cosmetic Manufacturers: Towards an Integrated Framework

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ABSTRACT

Large and medium-sized halal cosmetics manufacturers are required to establish halal risk-control mechanisms as part of their Halal Assurance System (HAS). Although MHMS 2020 establishes baseline guidelines for Halal Risk Control (HRC), the flexibility embedded in the regulatory framework enables manufacturers to adapt HRC implementation to their specific operational contexts. However, this flexibility leads to inconsistent compliance across the supply chain. This study examines HRC practices within HAS among large and medium-sized cosmetic manufacturers and proposes an integrated reference framework grounded in current industry practices. This study employed a qualitative research methodology to collect data through document analysis and semi-structured interviews with selected halal cosmetic manufacturers. The research revealed that significant variations persist in the operationalisation of HRC among halal cosmetic manufacturers at the stages of formulation, ingredient verification, process control, and distribution of cosmetic products. By integrating these practices, this study proposes a reference framework to standardise compliance, strengthen halal governance, and enhance regulatory oversight across the cosmetic production ecosystem.

Keywords: Halal assurance system, halal control point, halal cosmetic manufacturers, integrated framework, halal certification.

INTRODUCTION

Maintaining halal integrity throughout the cosmetic production chain remains challenging due to the complexity of raw materials and the risk of contamination (Dahiya et al, 2025; Selvakumar et al., 2025). Given the challenges of ensuring halal compliance, establishing robust, systematic regulatory and governance mechanisms is essential to effectively address these issues.

In Malaysia, the regulatory imperative is operationalised through the Malaysian Halal Certification Procedure Manual 2020 (MPPHM) and the Malaysian Halal Management System 2020 (MHMS). These mandatory references require companies in the large and medium categories to establish HAS to preserve halal integrity through continuous monitoring and compliance management (Hesim & Alkadrie, 2026; Maflahah et al., 2024). The implementation of HAS is guided by the principles of zero limit, zero defect, and zero risk (Sin et al., 2019). One of the key components of HAS is halal risk control (HRC), a preventive mechanism that identifies halal control points and establishes measures to address and mitigate unforeseen risks that may affect the halal status of products (Utama et al., 2025; Tieman, 2017). HRC is critical in cosmetic manufacturing due to the chemical complexity of ingredient requirements, the use of complex processing aids, and multi-tier supply chains (Deliaz et al., 2025). Maintaining compliance in cosmetic manufacturing requires systematic risk-control measures throughout the production process.

MHMS 2020 adopts a flexible approach to implementing HRC, allowing manufacturers to adapt halal management practices to their operational capacities (Othman et al., 2025; Rahman et al., 2024). This flexible Approach encourages innovation, but it leads to significant variability in how halal compliance is operationalised

across the cosmetics industry, potentially undermining the integrity of the entire supply chain (Tieman & Ghazali, 2014). Some manufacturers implement proactive measures, while others rely primarily on basic compliance procedures, leading to differences in how they manage risk across material sourcing, formulation development, manufacturing operations, and product storage. Such inconsistencies pose challenges for regulatory enforcement, reduce operational uniformity, and undermine confidence in halal-certified cosmetic products.

Existing studies have mostly focused on the halal certification compliance (Shah et al., 2026; Romeli et al., 2025), implementation of the Halal Assurance System (HAS) (Maflahah et.al., 2024), halal control point (Sulaiman et al., 2026), and halal supply chain management (Kurniawan et al., 2026), particularly in the food manufacturing sector. There is limited empirical research on the implementation of HRC within cosmetics manufacturing. This study will examine the implementation of HRC within the HAS among medium- and large-scale halal cosmetic manufacturers in Malaysia and propose an integrated reference framework for HRC grounded in empirical industry practices and aligned with MHMS 2020 and MPPHM 2020.

This study contributes to the halal risk management scholarship by providing empirical evidence on HRC practices among halal cosmetic manufacturers in Malaysia. The findings offer practical insights for policymakers and competent authorities to improve regulatory consistency, strengthen monitoring and enhance halal governance practices. This boosts consumer confidence in halal-certified cosmetic products and supports the long-term sustainability and competitiveness of Malaysia's halal cosmetic industry.

LITERATURE REVIEW

The Concept of Halal Cosmetics and Compliance Principles

Halal-certified cosmetic products must comply with the principle of *halalan tayyiban*, which emphasises the use of pure and clean ingredients and halal-compliant manufacturing processes (Salisu et al., 2025). The application of this principle extends across the entire cosmetic production chain, encompassing essential aspects of product preparation, from sourcing ingredients, processing, packaging, storage, and distribution (Tukiran & Anuar, 2022). By ensuring halal integrity throughout these stages, compliance with *halalan tayyiban* principles will enhance consumer trust and align with the growing demand for ethically produced goods (Razak et al., 2026; Susiang et al., 2024). However, implementing *halalan tayyiban* in cosmetic production requires a robust, systematic regulatory framework to maintain halal integrity throughout the manufacturing process. This is because cosmetic products are applied directly to the human body, which can cause dermatitis, allergic reactions, and other sensitivities, including immediate or delayed reactions after prolonged use (Alyahya et al., 2025).

Regulatory Framework for Halal Cosmetics in Malaysia

Cosmetic products in Malaysia must comply with all legal and regulatory requirements introduced by the National Pharmaceutical Regulatory Agency (NPRA) before the product owner can apply for halal certification. NPRA does not have jurisdiction over halal cosmetics. However, it is responsible for the safety aspects of cosmetic products and acts as a prerequisite for halal certification. Cosmetic manufacturers must obtain an acceptable GMP status from the NPRA and notify the NPRA of their cosmetic products before applying for halal certification. Cosmetic manufacturers must also comply with all relevant halal regulatory requirements, including MPPHM, MHMS, MS 2634:2019, and fatwa. Among these requirements, the MPPHM and MHMS provide the primary operational framework for halal certification, requiring large and medium-sized companies to establish a HAS to systematically manage and maintain continuous halal compliance.

Establishment of Halal Assurance System (HAS)

HAS is a structured halal control system designed to demonstrate halal certificate holders' commitment to halal compliance and to ensure the integrity of halal products throughout the supply chain (Abdul Fazmin, 2023). HAS can be viewed as a comprehensive management system that integrates organisational governance, operational control, and risk management practices (Hidayati et al., 2024). It consists of a set of procedures involving raw material traceability and legal documentation established by a company to maintain

comprehensive halal assurance (JAKIM, 2020; Asmawi & Lutfiady, 2026). To operationalise these controls, HAS incorporates several interrelated elements, including halal policy, halal executive, internal halal committee, internal halal audit, halal risk control, raw material control, halal training, traceability, HAS review, lab analysis, certificate, record, and documentation. Previous studies have broadly examined HAS in terms of improved traceability, stronger halal governance, and increased consumer confidence (Hashim et al., 2026; Jamaluddin & Al Haq, 2026; Puspaningtyas, 2023). However, limited attention has been given to specific halal risk control embedded within HAS.

Halal Risk Control (HRC) within HAS

HRC serves as the operational backbone of HAS, translating halal requirements into systematic, documented controls throughout the production chain (Ghazali et al., 2020). These controls are operationalised by identifying HCPs and developing HRMPs to preserve the product's halal integrity. MHMS 2020 emphasises that HRC is distinct from conventional quality frameworks like HACCP or GMP, as it focuses specifically on detecting and mitigating halal-specific non-compliances, such as unverified ingredient origins or cross-contamination

In cosmetic manufacturing, halal risk management is crucial given the complexity of formulations, ingredients, and production processes. Cosmetic products often contain synthetic compounds, alcohol derivatives, emulsifiers, glycerin, collagen, stearic acid, and animal-derived ingredients, making it difficult to identify potentially *haram* or dubious ingredients in long lists of cosmetic ingredients (Hussain-Gambles, 2020; Dahiya et al., 2025). Moreover, certain cosmetic products raise syariah concerns regarding water permeability and ritual purification (*wuduk*), particularly waterproof or long-lasting formulations that prevent water from reaching the parts of the body required for ablution (Abdullah et al., 2022; Fadhil et al., 2026). These halal risks highlight the need for effective HRC mechanisms, continuous monitoring, proactive risk identification, and systematic preventive controls throughout the production lifecycle to minimise contamination risks and maintain halal integrity.

MHMS 2020 requires manufacturers to establish written procedures for implementing HRC throughout the production process and provides a sample halal risk management plan as a practical reference. The framework identifies the principal elements to be incorporated into HRC but does not prescribe a single method for evaluating and controlling halal risks. However, limited empirical attention has been given to how halal-certified cosmetic manufacturers translate these requirements into specific control measures at different operational stages. In particular, the implementation of HRC across formulation development, material sourcing, manufacturing, packaging and labelling, storage, and distribution remains insufficiently documented in the literature. Examining these practices is therefore necessary to understand how the regulatory framework is operationalised within cosmetic manufacturing environments.

RESEARCH METHODOLOGY

This study employs a qualitative research design to evaluate HRC practices among cosmetic manufacturers and to propose an integrated reference framework grounded in industry realities. It begins with a desktop study that reviews legal, regulatory, and academic sources on halal cosmetics, including guidelines from JAKIM and NPRA. This study employs primary data collection via semi-structured interviews with eight medium- and large-sized halal cosmetic manufacturers who have consented to participate. The informants were selected through purposive sampling, and to avoid bias, the authors applied inclusion and exclusion criteria (Etikan et al, 2016; Meline, 2006; Keung et al, 2020). Data collection stopped when saturation was reached, ensuring sufficient depth and reliability of the insights.

This study retrieved data from the NPRA website (<https://npa.gov.my/index.php/en/>) and cross-referenced it with the Halal Portal database (<https://www.halal.gov.my>) to select only halal cosmetic manufacturers. The NPRA website provides general information on cosmetic manufacturers, both with and without halal certification. Meanwhile, the halal portal shows the cosmetic companies registered for halal certification. After selecting respondents from halal-certified cosmetic manufacturers, phone calls were conducted, and emails were sent to many HMs, but only a minority agreed to participate. Eight halal cosmetics manufacturers (HM) agreed to participate and appointed halal supervisors as their representatives. The ethical protocol was observed

throughout the interview session. Halal executives received a consent letter via Google Form prior to the interviews. The halal cosmetic manufacturers were coded HM1 to HM8.

Table 2: Participation information

Company	Organization size	Company base	Years in the industry
HM1	Medium	Cosmetics	more than 10 years
HM2	Medium	Cosmetics	10 years and above
HM3	Large	cosmetics and pharmaceuticals, cosmetics and food beverages	10 years and above
HM4	Medium	Cosmetics	10 years and above
HM5	Medium	Cosmetics	more than 6 years
HM6	Medium	cosmetics and pharmaceutical	10 years and above
HM7	Medium	Cosmetics	4-6 years
HM8	Large	Cosmetics	10 years and above

FINDING AND DISCUSSION

This section discusses halal risk-control practices among halal cosmetic manufacturers, based on semi-structured interviews and document analysis. The findings indicate that halal cosmetic manufacturers have implemented HRC throughout the life cycle of cosmetic products. The implementation of halal risk involves five operational stages: research and formula development, sourcing of raw materials or ingredients, manufacturing processes, packaging and labelling, and warehousing of end products. However, there are variations in how HRC is operationalised among halal manufacturers. These variations reflect the flexibility permitted by the halal regulatory framework, which allows companies to develop their own halal management practices tailored to their organisational structures, operational capabilities, and manufacturing processes.

The findings were derived from interviews with the halal executives responsible for halal management and the implementation of halal risk control within their organisations and were supported by available document analysis. Nevertheless, due to organisational confidentiality, certain internal practices could not be disclosed in detail. The following table summarises the HRC practices implemented by the participating HCMs across the identified operational stages:

Table 3: HRC practices

Stage	HRC practices across cases	Variations in implementation
Research & Formula Development	Halal requirements incorporated during formulation; ingredient-source screening; supporting-document review; avoidance or substitution of doubtful ingredients; consultation with halal executive before proceeding	Some manufacturers rely on document review and halal executive approval, while others use approved ingredient lists, internal committee approval or a formal halal pre-approval code before purchasing.
Sourcing of Raw Materials & Ingredients	Halal certificate verification; source/origin verification; SDS/MSDS, COA, composition and process-flow review; identification of critical ingredients; approved supplier controls; rejection/substitution of unsuitable materials.	Variations in the selection of raw materials, the modes of approval for raw materials, and the physical and documentary verification of raw materials upon receipt.

Manufacturing Process	SOPs/GMP compliance; hygiene and personnel controls; equipment and premises cleaning; contamination prevention; production documentation; internal halal monitoring and audits.	Variations were influenced by the product and manufacturing process, which require specific HRC, and by differences in the implementation of internal halal audits.
Packaging & Labelling	Packaging material assessment; packaging suitability; label and claim verification; consistency between approved information and marketed products.	Some manufacturers incorporate packaging into HCP controls, while others manage it mainly through regulatory and quality-control procedures
Storage	Controlled storage of raw materials and finished products; segregation; cleanliness; pest control; inventory/stock records; prevention of contamination.	Some manufacturers designate storage as an HCP, while others manage it through general GMP and warehouse procedures, approved-material controls and traceability documentation.
Distribution & Transportation	Control of transportation conditions; cleanliness; prevention of mixing with non-halal materials; maintenance of traceability	Some employ vehicle inspections, scheduled cleaning and contractual requirements for logistics providers, while others use dedicated cosmetic transportation or customer collection.

The implementation of halal risk management begins at the formula research and development (R&D) stage. This is the most critical phase, serving as the first preventive stage for determining whether the product meets halal requirements. HM8 stated, “R&D is the mother of everything, and if you take care of R&D, the halal is secured.” R&D personnel normally work with the halal executive to screen proposed ingredients by verifying their sources, halal certificates, and supporting documents. Nevertheless, the nature of the halal executive's involvement in the R&D stage varied: in some cases, the halal executive performed documentary screening and consultation, whereas in others, they exercised a more direct role in approval or gatekeeping. For example, one company implemented pre-approval code following internal approval. Some manufacturers conduct halal screening at an early stage without requiring formal approval from the halal executive. However, this study found that pre-purchase controls, verified by the halal executive, are important for preventing the entry of animal-derived ingredients or processing aids with uncertified halal status into trial formulations during product development.

The next stage of HRC involves the sourcing of raw materials and ingredients. The finding indicates that all manufacturers employed similar halal risk-control measures before procurement or use. This consistency reflects their adherence to the requirements set forth by JAKIM or JAIN. In addition to ingredient verification, manufacturers exercised supplier control through approved supplier systems, source verification and, in some cases, supplier audits. Some manufacturers conducted on-site supplier audits, while others conducted document-based audits that required suppliers to complete questionnaires and provide supporting documentation. This approach was particularly relevant for overseas suppliers, for whom physical audits were often impractical. However, documentary assessment poses an inherent limitation, as manufacturers remain dependent on the accuracy and completeness of information provided by suppliers, particularly in complex, multi-tier international supply chains.

Halal risk control also extends to the receiving stage, where incoming raw materials and ingredients are inspected and verified against approved procurement documents. Additionally, transportation is considered, with manufacturers monitoring for potential cross-contamination or exposure to non-halal substances during delivery. Neither stage can rely solely on documentation; on-site monitoring is critical to guarantee that the materials physically delivered align with sources that meet halal standards and previously approved specifications.

Furthermore, the manufacturers also implement HRC during the manufacturing process. The manufacturers integrated HRC into Good Manufacturing Practice (GMP) requirements, particularly regarding personnel

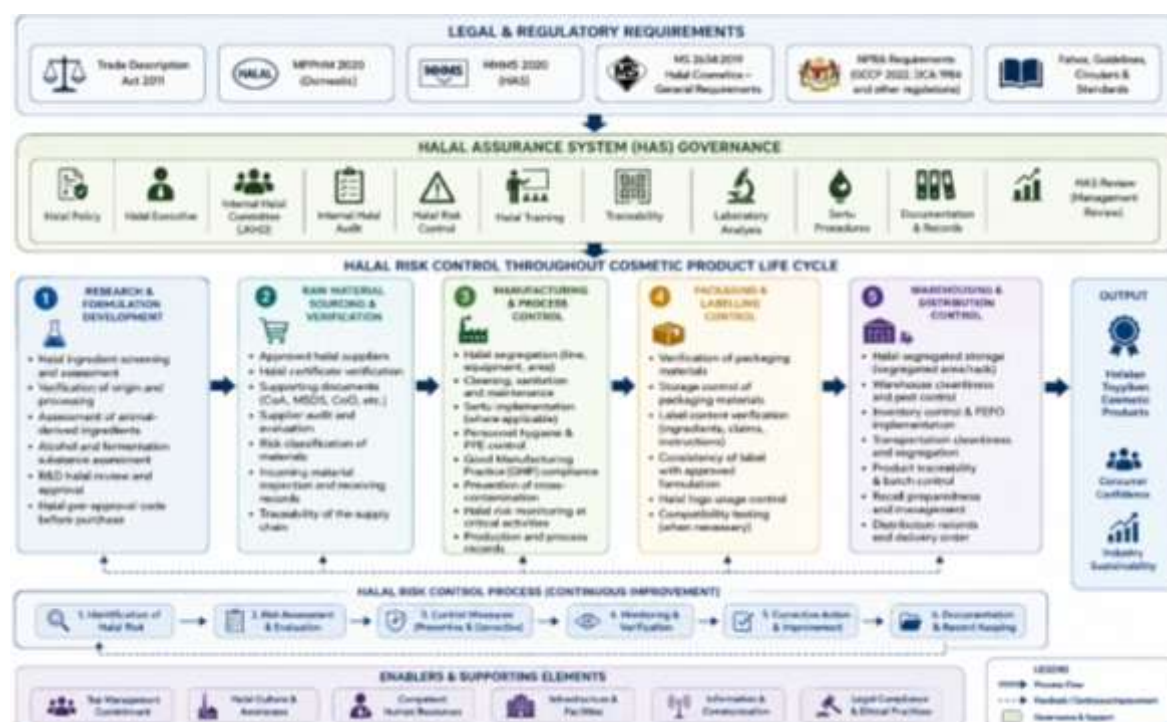
hygiene, cleanliness of premises and equipment, production SOPs, and contamination prevention. Some manufacturers perceived that compliance with GMP would also fulfil halal requirements during the manufacturing process. However, GMP compliance alone does not establish halal compliance, as halal assurance also requires adherence to Syariah-specific requirements and the management of halal-related risks.

HRC during manufacturing also encompassed personnel hygiene and entry procedures prior to accessing the production area. The manufacturers established standard Operating Procedures (SOPs) governing personnel entry and hygiene practices in the production area, which required personnel to wash their hands, change into designated production attire, and change their footwear before entering. Some manufacturers implemented additional halal-specific measures to address risks that may not ordinarily be captured under conventional hygiene and quality controls. These included verifying and documenting the sources of cleaning materials, such as brushes and soaps, and assessing materials used in processing equipment. In one practice, the deionisation process was identified as a Halal Control Point (HCP), requiring verification of the filters' source and composition to ensure they were not derived from prohibited sources.

Apart from the above, HRC also extends to packaging materials, labelling, and advertising, which must comply with Syariah requirements, standards, legislation, and regulations enforced by the relevant authorities. Cosmetic packaging serves as a product container and is also considered a powerful marketing tool. The cosmetics sector requires packaging materials that can effectively protect products and prolong their shelf life (Siddiqui, 2027). In this study, the manufacturers implemented HRC for packaging materials through various mechanisms, including inspection, quality control procedures, verification of packaging suitability, and regulatory notification requirements. Labelling and advertising are similarly controlled to avoid inappropriate or religiously sensitive elements and to ensure that product claims are accurate, truthful, consistent with the notified product and not misleading to consumers.

The discussion above demonstrates that all manufacturers implement HRC across their manufacturing operations. Variations exist in the mechanisms and degree of formalisation adopted at different stages, but such variations reflect the flexibility afforded by the existing halal requirements, as manufacturers are not confined to specific examples or methods in determining and implementing their HRC. The variation identified across manufacturers, therefore, highlights the need for a more integrated reference that consolidates existing regulatory requirements with current industry practices. This study proposes the following Integrated HRC Framework for Cosmetic Manufacturing, as presented in Figure A.

Figure A: Integrated Halal Risk Control Framework for Cosmetic Manufacturing



CONCLUSION

This study examined the implementation of HRC within the HAS among large- and medium-sized halal cosmetic manufacturers in Malaysia. The findings demonstrate that HRC is implemented throughout the cosmetic manufacturing lifecycle and that all manufacturers apply it to preserve halal integrity. However, there is considerable variation in the mechanisms, the degree of formalisation, and the operational approaches adopted at each stage. The implementation of HRC requires a combination of preventive, verification and monitoring mechanisms. Early halal screening during R&D, ingredient verification, supplier and incoming-material controls, GMP-based and Syariah-specific production practices, packaging and labelling controls, storage segregation, transport and distribution safeguards collectively contribute to maintaining halal integrity. The variations identified among manufacturers reflect the flexibility permitted under MPPHM 2020, MHMS 2020, and MS 2634:2019. While such flexibility enables manufacturers to tailor their control systems to their operational contexts, it may also lead to inconsistent interpretation and implementation of HRC practices.

Accordingly, this study proposes an Integrated Halal Risk Control Framework for Cosmetic Manufacturing that consolidates the relevant regulatory and standard requirements with current industry practices. Rather than replacing the existing halal assurance requirements, the framework is intended to operationalise them in a more coherent and industry-oriented manner. The study contributes empirically by demonstrating how HRC is currently practised within the cosmetic manufacturing environment and practically by providing a structured reference for manufacturers, particularly new and emerging halal cosmetic manufacturers.

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