Bridging the Gap: Halal Compliance Challenges in Hospitality Operations

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Abstract
Purpose: The study aims to identify the operational gap between halal certification standards and their day-to-day application in the Malaysian hospitality sector, with a focus on identifying the root causes pertaining to halal non-compliance in hotel operations and assessing the CQI interventions.
Design/methodology/approach: Following a qualitative and multi-case study design covering quarter hotels operating under a centralized governance system, data were collected from document reviews, internal halal audit records, and scheduled site observations. The root cause analysis and interventions were developed using the Fishbone Diagram and the Plan-Do-Check-Act cycle, respectively, within the framework of continuous quality improvement.
Findings: The results showed that there were four major areas of root causes of noncompliance: people, procedures, materials, and environmental factors. Interventions designed using CQI showed positive results: less non-adherence to SOP, more accurate documentation, and better traceability of halal ingredients. However, the degree of these improvements differed across hotels due to the variations in operational complexities and readiness levels at the starting point.

Research limitations/implications: The study is limited to a single hotel cluster operating in Malaysia and the Klang Valley, which might affect generalizability. Future studies should investigate the long-term impacts of CQI adoption and be applied in decentralized or non-clustered hotel settings.

Practical implications: The results are presented as a roadmap for hospitality managers, halal auditors, and policymakers toward narrowing the halal implementation gap through scalable and field-proven CQI methods. The study endorses the implementation of continuous training, usage of digital traceability tools, and a structured feedback mechanism to sustain compliance.

Originality/value: It is one of the first empirical studies that apply CQI and Fishbone root cause analysis to halal compliance within real-world hotel operations. It also introduces a new, evidence-based governance framework that reconciles regulatory standards with operational realities in the halal hospitality industry.

Keywords: Halal Compliance, Hospitality Management, Halal Certification Standards, Halal Laws, Halal Regulatory

Introduction

The global Muslim travel market is rapidly expanding, driven by a growing demand for services that adhere to Islamic principles. However, this growth is hampered by critical challenge: the gap between established halal certification standards and their consistent operational implementation in the hospitality sectors. This implementation gap is exacerbated by the absence of unified international halal standards, leading to inconsistencies and compliance complexities for hotel chains operating across borders (Harits Nu'man et al., 2023). Malaysia, a recognized global leader in the halal ecosystem with its comprehensive frameworks like the Manual Procedure for Malaysia Halal Certification (MPPHM, 2020) and Malaysian Standards (MS1500:2019), is not immune to these challenges, despite its advanced regulatory infrastructure, the Malaysian hospitality sectors frequently struggle to translate stringent halal policies into daily practice. Adherence to these standards is not merely a legal formality but a crucial determinant of consumer trust and business sustainability, particularly for attracting the valuable international Muslim tourist segment (Tieman, 2011).

Despite the existence of comprehensive halal certification protocols, Malaysian hotels frequently struggle to operationalize these requirements. Past studies have identified persistent barriers, including human error, insufficient training, poor documentation, and fragmented supply chains (Al-Mahmood & Fraser, 2023). However, the literature often treats these problems in isolation—failing to examine them as part of a systemic, operational gap between policy expectations and on-ground hotel practices. Crucially, these are not isolated but are deeply interconnected. For instance, insufficient training for the halal documentation including menu engineering (people barrier) directly leads to human error and poor documentations (process barriers), which are further compounded by an inability to verify materials from a fragmented supply chain (a materials barrier). This creates vicious cycle that undermines halal integrity. This study addresses that critical gap. It examines how centralized hotel clusters with shared procurement and governance structures continue to experience halal compliance failures, despite efforts to achieve certification.

There is a persistent misalignment between halal regulatory expectations and their consistent implementation within high-pressure hospitality environments. The lack of integrated root-cause analysis and targeted interventions has resulted in recurring non-compliance issues, especially in hotel clusters where SOPs, procurement, and staff training are meant to be

standardized. Existing research lacks in-depth, comparative, and real-world hotel case studies that explore this operational governance gap using practical quality improvement models. While prior studies have effectively diagnosed compliance challenges (e.g. (Al-Mahmood et al., 2023; Zailani et al., 2011a) and proposed conceptual framework (Razalli, 2018; Razalli et al., 2013a), they often remain diagnostic, offering limited empirical testing of prescriptive solutions for systemic improvement. Furthermore, quality improvement models like CQI and root cause analysis are well-established and achieve significant success in sectors like healthcare (Endalamaw et al., 2024; Rubenstein et al., 2014a) and manufacturing (Hekmatpanah, 2011) but they remain critically under-explored in the context of halal hospitality governance.

To the best of the authors' knowledge, this is the first empirical study to apply the Continuous Quality Improvement (CQI) methodology—utilizing the Plan–Do–Check–Act (PDCA) cycle—in combination with Fishbone Root Cause Analysis, within a real-world hotel cluster governed by centralized halal compliance systems. This novel methodological combination directly addresses the aforementioned gap by not only diagnosing root causes but also implementing and measuring targeted interventions. The study's novelty lies in its ability to move beyond descriptive challenges and instead offer a structured intervention-response framework grounded in field data, thereby making a theoretical contribution by integrating operational management theory with halal assurance principles. This contributes a practical, scalable governance model for halal hospitality management.

Despite the availability of detailed halal standards and the theoretical advantages of CQI, many hospitality operators continue to struggle with the practical implementation of these standards. The literature highlights systemic issues—fragmented regulation, untrained personnel, inconsistent SOPs, and weak internal assurance mechanisms—but lacks empirical case studies that integrate these elements in real-world hotel environments. Existing literature lacks real-world, cross-hotel comparative case studies that explore halal governance challenges under shared management and procurement systems. Most studies remain siloed, either focusing on isolated operational weaknesses or broad regulatory analyses without connecting the two. There is a need for holistic assessments that examine how regulatory expectations are translated into daily operational practices within hospitality clusters.

Literature Review
The hotel industry faces several challenges in complying with halal certification requirements, which are crucial for meeting the needs of Muslim travellers and upholding religious standards. A primary issue is the lack of understanding among hotel managers and staff regarding the halal certification process, including its significance and procedural requirements (Rahayu et al., 2023; Razalli, 2018; Zailani et al., 2011b). Beyond the complexity of standards, the journey towards halal compliance demands significant and multifaceted operational reforms. Hotels must overhaul critical areas including documentation protocols, staff policies, supply chain sourcing (raw materials), physical infrastructure, and waste management system to meet certification requirements (Razalli et al., 2013a). These operational shifts are further complicated by financial barriers; the substantial costs of certification and ongoing maintenance pose a particularly formidable challenge for smaller establishments with limited capital (Z. Md. Rodzi et al., 2023).

Compounding these internal challenges are external market perceptions. A prevalent misconception among some operators is that halal certification is redundant if their primary

clientele is non-Muslim, which undermines the commercial incentive to comply (Zailani et al., 2011b). This is often coupled with a broader lack of awareness among both staff and potential guests regarding the value of halal certification, which suppresses market demand and, consequently, internal motivation for hotels to invest in the process (Rodzi et al., 2023; Zailani et al., 2011b).

Regulatory Complexity and Fragmentation in Halal Hospitality

The global hospitality industry is increasingly adopting halal compliance to capture a share of the rapidly growing Muslim travel market. However, this effort is significantly hampered by a fragmented and inconsistent global regulatory landscape. While nations like Malaysia have established comprehensive, state-driven certification systems (e.g., MPPHM 2020 and MS 1500:2019) led by bodies such as JAKIM and HDC, making it a global halal leader (Samori et al., 2017), critical internal gaps persist. These include the lack of a specific Muslim-Friendly Hotel (MFAR) standard and fragmented regulations for tourism services and halal meat imports (Sahari et al., 2022).

This inconsistency is further exemplified elsewhere in the region. Indonesia has implemented expansive halal regulations that extend beyond food to include cosmetics and pharmaceuticals (Prathama et al., 2024), yet it also faces challenges with inconsistent local enforcement and poor inter-agency coordination, as seen in regions like West Java (Hamzah et al., 2024). The most significant overarching barrier remains the absence of unified international halal standards (Harits Nu'man et al., 2023). This lack of harmony creates market inefficiencies, hinders cross-border operations for international hotel chains, and erodes consumer trust due to difficulties in verifying compliance and a lack of supply chain transparency (Maulidia et al., 2024).

Consequently, hotel managers face direct operational challenges, forced to navigate a complex web of overlapping, unclear, and often evolving requirements without the benefit of tailored, sector-specific guidance. This regulatory fragmentation translates directly into heightened compliance risk and operational complexity on the ground, resulting in uncertainty in daily procedures, training gaps among staff, and an increased risk of non-compliance despite good intentions. In summary, Malaysia's strong national system is offset by global inconsistencies and regional enforcement gaps, which trickle down to create confusion at the operational level within hotel environments.

Operational and Talent Challenges in Halal Hotel Management

Halal compliance in hospitality is not merely a matter of certification. It depends heavily on the integrity of day-to-day operations. (Tieman, 2011) and others emphasize that internal vigilance and systemic practices are vital for sustainable halal assurance. While legal frameworks are essential, halal assurance must be embedded in daily hotel operations across departments, including procurement, kitchen, and service functions. Among the most frequently cited operational barriers are human error, staff unawareness of SOPs, and breakdowns in supply chain traceability (Ab Talib & Hamid, 2014). Many hotels lack halal-competent staff; food handlers often operate without formal halal training, and internal audits frequently reveal incomplete documentation or procedural lapses (Ab Talib & Hamid, 2014; Othman et al., 2016).

The absence of standardized Shariah-Compliant Hotel (SCH) criteria further complicates service consistency (Nor-Zafir, 2015). Some hotel managers also underestimate the broader

scope of Islamic hospitality, limiting compliance to food while neglecting essentials such as prayer facilities or alcohol-free environments (M. M. Battour et al., 2010; Trisnaningtias et al., 2021). Emerging technologies like blockchain and Non-Fungible Tokens (NFTs) show promise for enhancing halal traceability. However, these tools raise concerns about Islamic permissibility, cybersecurity risks, and high implementation costs (Aysan & Syarif, 2025). Similarly, green halal initiatives, though promising, demand extensive capital investment and stakeholder coordination (Raimi, 2025; Saba et al., 2025).

In essence, while regulatory tools are available, true compliance rests on the human and procedural backbone of hospitality operations—an area that remains under-resourced, poorly understood, and highly variable in execution.

Theory Related to CQI
CQI
This study utilized the CQI approach to addressing the halal compliance challenge. CQI provides a strategic framework for addressing persistent operational failures in the halal hospitality sector. Rooted in the PDCA model, CQI emphasizes iterative improvement, contextual adaptation, and data-guided interventions (Deming, 1986; Rubenstein et al., 2014b). CQI has achieved widespread success in healthcare, education, and manufacturing, improving service delivery, employee engagement, and systemic accountability (Applegate, 2004; Endalamaw et al., 2024). In hospitality, its application remains limited but promising. Challenges to CQI implementation include cultural resistance, rigid hierarchies, and poor follow-through (Sobek II & Ghosh, 2007). Leadership support, cross-departmental collaboration, and measurable Key Performance Indicator (KPIs) are essential for CQI success. Starting with small-scale interventions and scaling progressively helps build momentum and ownership among staff (Fifolt et al., 2022). CQI is not just a tool but a management philosophy that aligns well with the dynamic and cross-functional nature of halal governance. In this study, CQI was operationalized through the PDCA cycle. This involved identifying recurring non-compliance issues during the Plan phase, implementing targeted interventions such as retraining programs or documentation updates during the Do phase, conducting follow-up audits and outcome reviews in the Check phase, and finally institutionalizing effective changes in the Act phase. For instance, in Hotel H2, a failed mock sertu audit prompted a full CQI cycle. The hotel responded by launching a structured retraining initiative for all food handlers, leading to significant procedural improvements, as further detailed in Section 4.7. This structured approach enabled each hotel in the study to iteratively refine its halal assurance practices using field data, thereby aligning operational realities with national halal certification standards.

Fishbone Theory
The Fishbone Diagram, alternatively termed the Ishikawa or cause and effect diagram, constitutes a seminal methodology in root cause analysis, conceived to systematically delineate and classify the underlying determinants of a defined problem. Its schematic architecture facilitates the deconstruction of complex issues into discrete causal categories, thereby offering a structured heuristic for diagnostic inquiry and the advancement of continuous improvement protocols (Hekmatpanah, 2011; Xu et al., 2018). While its provenance lies in industrial quality management, where it has proven instrumental in mitigating production anomalies, minimizing waste, and elevating product quality and consumer satisfaction, its utility has transcended sectoral boundaries.

The tool's analytical rigor has prompted adoption in diverse fields such as healthcare and education. Within clinical environments, it is deployed to elucidate the originals of diagnostic inaccuracies and operational inefficiencies, addressing both cognitive and systemic failures to bolster patient safety and optimize surgical workflows (Li et al., 2013; Reilly et al., 2014). Similarly, in educational contexts, it serves to diagnose a spectrum of institutional challenges from faculty development to infrastructural constraints and foster improved pedagogical outcomes by leveraging visual, analytical processing (Ahmed, 2020; Shinde et al., 2018). This transdisciplinary applicability underscores the diagram's robust versatility as a diagnostic instrument for interrogating multifaceted problems and formulating precise, evidence based interventions across professional domains.

Conceptual Framework of the Study

This study adopted a two-tier analytical framework to diagnose operational deficiencies and evaluate intervention efficacy across the four hotel properties. This integrated methodology synergistically combined root cause analysis with Continuous Quality Improvement (CQI) to systematically examine and enhance halal compliance protocols. The first tier involved a Root Cause Analysis (RCA) utilizing the Fishbone (Ishikawa) Diagram. This models categorized factors contributing to non-compliance into six core domains: Materials, Methods, Manpower, Machinery, Environment, and Management (Razalli et al., 2013b). Data to populate these categories were derived from a triangulation of sources, including internal audit records, structured observational site visits, and documentation of halal management. This diagnostic approach yielded a structured visualization of systemic compliance bottlenecks, which subsequently informed the development of targeted, site-specific interventions.

The second tier operationalized the CQI process through a Plan-Do-Check-Act (PDCA) cycle. The interactive cycle commenced with the **Plan** phase, which entailed the identification of specific compliance failures, such as failed mock sertu procedures, documentation inaccuracies, or unverified ingredients based on prior audits findings (Hassan et al., 2015). In the **Do** phase, customized corrective actions were implemented, encompassing initiatives like staff retraining programs, procedural redesign, enhanced supplier vetting, and digital systems upgrades. The **Check** phase involved conducting follow-up audits and performance reviews to quantify improvements against key metrics, including SOP adherence rates, reduction in documentation errors, and decreased audit processing times. Finally, the **Act** phase focused on the institutionalization of successful strategies into SOPs to ensure long-term compliance sustainability.

For illustration a full PDCA cycle at hotel 2 was initiated following a surprise audit that revealed significant procedural shortcomings. A subsequent structured retraining initiative led to a 38% increase in SOP adherence and a 42% reduction in non-conformities within a two-month period. Comparable CQI iterations were deployed across the other properties, with all improvements rigorously tracked via audit logs and performance dashboards. In summary, this combined analytical approach entailing systematic root cause diagnosis followed by iterative CQI interventions facilitated both comprehensive problem identification and empirical solution validation. This position the study within a robust, practical, and interactive governance framework directly applicable to halal hospitality operations.

Methodology
Research Design
This study employed a qualitative research design to explore halal governance across four distinct hotel properties under a unified management structure, allowing for cross-property comparisons and the identification of both compliance strengths and weaknesses (Yin, 2013). Given the limited empirical research on halal practices in hospitality, particularly regarding service-oriented non-compliance, this approach enables an in-depth exploration of contextual operational realities (Hassan et al., 2015). Hence, the qualitative approach seemed appropriate to be utilized, as it reflects a situation rather than just a numerical perception of the study.

Informant Selection
This study employed a purposive sampling strategy to select four hotels within Malaysia's Klang Valley. The primary selection criterion was their operation under a shared cluster-based model, characterized by centralized halal governance, integrated procurement systems, and standardized SOPs. This common structure makes the cluster a representative case study of Malaysia's premium hospitality sector and provides a controlled environment for examining how halal policies are translated into daily practice. While findings are context-specific, they offer insights that may be transferable to similar hotel clusters with comparable governance models.

The study setting is a multi-property hotel group in Klang Valley, a key Islamic tourism destination. All participating hotels share JAKIM certification and unified supply chains, creating an ideal controlled environment for systemic halal assurance analysis (Mohamed et al., 2022). The research focus is particularly significant given that, as of 2017, only approximately 9.5% of Malaysian hotels held halal certification (Razalli, 2018).

This article presents a retrospective case study analysis of a Continuous Quality Improvement (CQI) initiative that was implemented as part of the hotels' internal operational and halal governance processes. As such, the activities described were conducted under the hotels' own quality management and audit protocols, not as a prospective academic research project involving human subjects. For the purpose of publication, the analysis and reporting of this case study adhere to the ethical principles of confidentiality and data anonymity. All data utilized were collected as part of routine internal audits. No personal employee data was used or reported. The identities of the hotel properties have been anonymized using codes (H1, H2, etc.), and informed consent for the use of the anonymized, aggregated operational data was obtained from the management of the hotel group.

Data Collection
Primary data were collected via two complementary methods over a six-month period to ensure triangulation:
- Document Review: Internal halal audit reports, corrective action records (CAR), and documentation from JAKIM inspections and third-party audits covering the preceding 12 months were analyzed. This method is established in prior research for identifying systemic gaps in Halal Assurance Systems (HAS) and staff competency (Hassan et al., 2015; S. Z. S. Marzuki et al., 2012)
- Structured Observational Visits: A total of 12 site visits (three per hotel) were conducted using checklists aligned with MS 1900:2021 to observe kitchen practices, ingredient verification, staff adherence to SOPs, and record-keeping for traceability. Observational

data provide critical contextual accuracy to compliance evaluations (S. Z. S. Marzuki et al., 2012).

The data collection process, alongside the subsequent analysis, is summarized in Figure 1 to provide a clear overview of the methodological workflow.
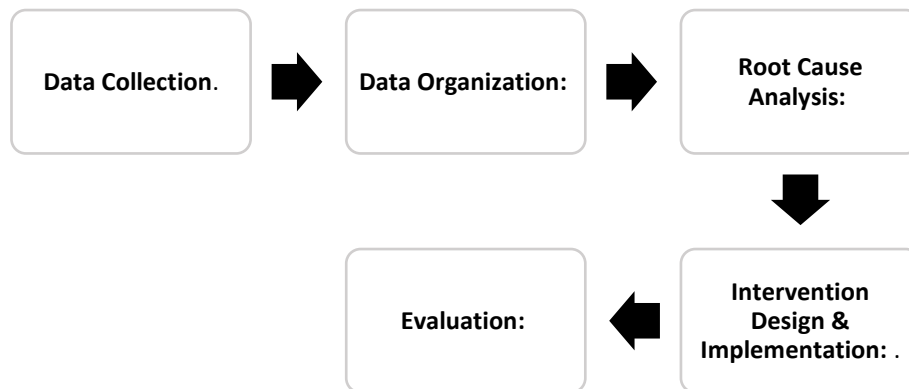

Figure 1: Methodology Flowchart

The research process followed a structured CQI cycle:
1. Data Collection: Inputs from Document Review and Structured Observations.
2. Data Organization: Collected data was organized into the six pre-defined Fishbone categories (People, Process, Materials, Environment, Equipment, Policy).
3. Root Cause Analysis: A Fishbone (Ishikawa) diagram was constructed to visualize and identify the root causes of compliance gaps.
4. Intervention Design & Implementation: Targeted interventions were developed based on the root causes and implemented using the PDCA (Plan-Do-Check-Act) cycle.
5. Evaluation: The effectiveness of interventions was evaluated through follow-up audits and observations, leading to further refinement.

Data Analysis
A traditional thematic analysis was employed. Instead, data were analysed using a structured, deductive approach based on the Continuous Quality Improvement (CQI) framework. Information from all sources was systematically organized into six pre-defined categories of the Fishbone (Ishikawa) diagram: People, Process, Environment, Equipment, Materials, and Policy. This method efficiently identified root causes and performance gaps without the need for inductive thematic coding. The construction of Fishbone diagrams provided a clear visual representation of non-compliance factors, which directly supported the development of targeted interventions. This deductive qualitative analysis, guided by operational management categories, is well-suited for applied research goals (Yin, 2018).

Methodological Rigor
Methodological rigor was ensured through several strategies. Triangulation was achieved by combining data from documents and observations. Member checking was conducted to validate the accuracy and credibility of the findings; all four quality managers (one from each participating hotel) reviewed the preliminary results and confirmed their representativeness. A detailed audit trail, including raw data, analysis notes, and refinement steps, was maintained to

ensure transparency and replicability. These practices align with established best practices for rigorous qualitative and case study research (Yin, 2013).

Findings and Discussion
The findings of this study clearly showed that there are seven major themes of recurring halal compliance challenges across the participating hotels, namely (a) Human Error (b) Limited Halal Competency, (c) Incomplete Documentation (d) Standard Operating Procedure (SOP), (e) Supply Chain Vulnerabilities, (f) Service Pressure, and (g) Infrastructure Constraints.

Description of the Informants
The data presented in Table 1 highlight the key structural characteristics of the four participating hotels, all of which are located within a centralized halal governance cluster. These infrastructural factors are crucial for understanding the complexity and risk exposure associated with halal compliance. Hotel H1 and H4, both large five-star properties, exhibit higher operational complexity with 353 and 488 rooms, respectively, and a broader array of F&B outlets, each operating multiple restaurants, lounges, and more than five halal-certified kitchens. The presence of numerous halal-certified kitchens indicates a proactive commitment to halal assurance but also introduces significant management challenges in enforcing consistent practices and documentation across multiple service points.

In contrast, H2 and H3, while equally committed to halal standards, operate on a leaner scale with fewer guest volumes and outlets. A notable feature of H3 is its operation of five halal-certified kitchens to support only one restaurant and one lounge, strongly indicating a core function in banqueting services. This necessitates exceptionally precise zoning and workflows to prevent cross-contamination. The fact that all four hotels maintain a high number of halal-certified kitchens (5 to 6) demonstrates that halal compliance is deeply embedded throughout their culinary operations. This deep integration, while commendable, exponentially increases the compliance monitoring burden.

Table 1: Key Structural Characteristics of the Four Participating Hotels

Hotel	Star Rating	Room Capacity	Total Restaurants	Total Bar/Lounge	Halal-Certified Kitchens
H1	5-star	353	2	2	6
H2	5-star	152	2	2	5
H3	4-star	249	1	1	5
H4	5-star	488	3	3	5

The data in Table 2 reveals a critical structural vulnerability: a consistently low number of certified halal officers (n=2 per property) is tasked with overseeing a widely varying number of food handlers. Collectively, the eight certified halal officers across the four properties were responsible for overseeing 288 food handlers, yielding a total expert-to-handler ratio of 1:36. However, this aggregate figure obscures significant operational disparities. The ratio per property varied drastically, from a manageable 1:13 (H3) to a critically high 1:60 (H1), indicating that halal governance staffing models were not scaled to the size of the hotel's operations. Furthermore, a reliance on one highly experienced officer (12 years) per property, supported by a less experienced counterpart (2-4 years), presents a potential key-person risk to the sustainability of halal governance.

Table 2: Staff Demographics and Halal Roles Across Hotel Properties

Hotel Code	Total Staff with Halal Awareness Training	Food Handlers	Internal Halal Committee (IHC)	Ratio Food Handler vs IHC	Certified Halal Officers	Average Years of Halal Officer's Experience
H1	168	119	13	1:60	2	4 & 12 years
H2	100	47	15	1:24	2	2 & 12 years
H3	72	26	16	1:13	2	3 & 12 years
H4	226	96	14	1:48	2	2 & 12 years
Total	**566**	**288**	**58**	**1:36**	**8**	

The comparative analysis underscores that a hotel's infrastructure and operational scale fundamentally determine its halal compliance risk profile. This reveals a critical systemic misalignment: the complexity of a property's food and beverage operations is often inversely proportional to its allocation of specialized human resources. Consequently, large-scale hotels with extensive services (H1, H4) face the most severe expertise bottlenecks, despite requiring sophisticated, multi-layered monitoring systems. In contrast, smaller properties like H3, while benefiting from a more favorable staff-to-handler ratio, remain vulnerable to risks arising from staff multitasking within condensed operational workflows. Therefore, to bridge this gap, infrastructural complexity must be the primary driver for risk assessments and staffing models. This strategic alignment is essential to ensure halal compliance systems are not only integrated but also scalable and sustainable. The following sections will explore the specific operational challenges that emerge from this structural misalignment.

Major Themes: Compliance Challenges
Several underlying factors drive halal non-compliance within the hotel industry. A primary cause is a Lack of Awareness and Understanding, where managers often deem certification unnecessary—particularly with a predominantly non-Muslim clientele—thereby diminishing their incentive to adhere to standards (Zailani et al., 2011b). This is exacerbated by an insufficient grasp of both the requirements and advantages of halal certification, leading to a passive rather than proactive approach to compliance (N. A. Karim et al., 2022; Zailani et al., 2011b). Economic and Operational Challenges also present significant barriers, as the process is frequently viewed as expensive and administratively burdensome, necessitating potential operational changes, specialized training, and infrastructure investments that discourage pursuit of certification (N. A. Karim et al., 2022).

Furthermore, when the market demand for halal-certified services is perceived as limited, hotels often conclude that the financial returns do not justify the costs of compliance (Zailani et al., 2011b). Finally, Regulatory and Institutional Factors, such as ambiguous or limited guidelines from authorities like JAKIM or the Kelantan Islamic Religious Affairs Department (JAHEAIK), result in inconsistent application of halal standards (Musa et al., 2019). Moreover, insufficient institutional support and lack of clear incentives further weaken hotels' motivation to comply (N. A. Karim et al., 2022). Lastly, Cultural and Social Factors include the prioritization of local customs and environmental regulations over halal requirements (Nurshadira et al., 2023), as well as prevailing biases and misconceptions regarding the necessity or value of halal certification, which influence decision-making among hotel management (Nurshadira et al., 2011).

Human Error and Limited Halal Competency

The most significant obstacles to halal compliance were predominantly related to human resources. A common issue was the neglect of essential SOPs, especially during peak service hours when operational pressure intensified. A lack of familiarity with key protocols, such as verification methods and mock sertu (cleansing) drills, was observed, particularly in Hotels H2 and H3. Furthermore, the human resource structure for halal governance was strained, with each property allocating only two certified halal officers to oversee multiple certified kitchens and outlets. This challenge was exacerbated by frequent turnover in these critical positions, which consistently undermined training initiatives and fractured institutional knowledge. Collectively, these factors underscore a critical misalignment between the existing staff capabilities and the stringent regulatory demands for ensuring daily halal integrity.

Incomplete Documentation and SOP Lapses

Deficiencies in documentation were a common challenge observed in all hotels. For instance, Hotel H1 faced postponements in certifying its halal menu as a result of incomplete supplier documentation and errors in payment processing. Similarly, an internal review at Hotel H4 identified irregularities in the labelling of halal zones and incomplete records of standard operating procedures. Although these shortcomings are frequently administrative in nature, they led to delays in certification and unsuccessful audits. These breakdowns point to broader systemic vulnerabilities in areas such as internal oversight, feedback mechanisms, and document management fundamental process-related failures within the Fishbone analytical framework.

Supply Chain Vulnerabilities

Hotel H3's recertification audit revealed that 17% of ingredients lacked valid halal certification from vendors—posing a high-risk compliance gap. Despite having formal procurement procedures, hotels lacked active vendor vetting mechanisms or blacklisting protocols for repeat non-compliant suppliers. These material-based failures underscore the fragility of upstream traceability and the need for stronger procurement governance.

Service Pressure and Infrastructure Constraints

Environmental factors, such as peak-hour workload and kitchen layout design, were linked to procedural breakdowns in all four hotels. In H4, checklist compliance rates fell significantly during lunch and dinner rush periods. Audits noted insufficient signage, poor zoning clarity, and inconsistent SOP reminders in kitchen spaces—elements that can act as environmental cues to reinforce halal behavior. These results affirm that within certified settings, operational and time-sensitive pressures can compromise halal adherence unless proactively addressed through design-led interventions.

When analyzed using the Fishbone framework, it becomes evident that challenges within the People and Process categories occur frequently and exert a strong influence on compliance. Conversely, issues related to Materials and the Environment, while less common, pose substantial systemic threats with potentially serious consequences. This organized categorization guided the development of the Continuous Quality Improvement (CQI) strategies presented in later parts, clarifying where operational halal management requires the most focused attention.

To effectively guide intervention planning, a strategic quadrant (Figure 2) was created to map each domain according to its rate of occurrence and its consequential severity. This

visualization demonstrated that People and Process-related challenges are not only common but also highly impactful, necessitating immediate and ongoing corrective measures. Meanwhile, Materials and Environment-related risks, though less frequent, call for infrastructural adjustments and proactive risk-mitigation protocols due to their potential gravity.
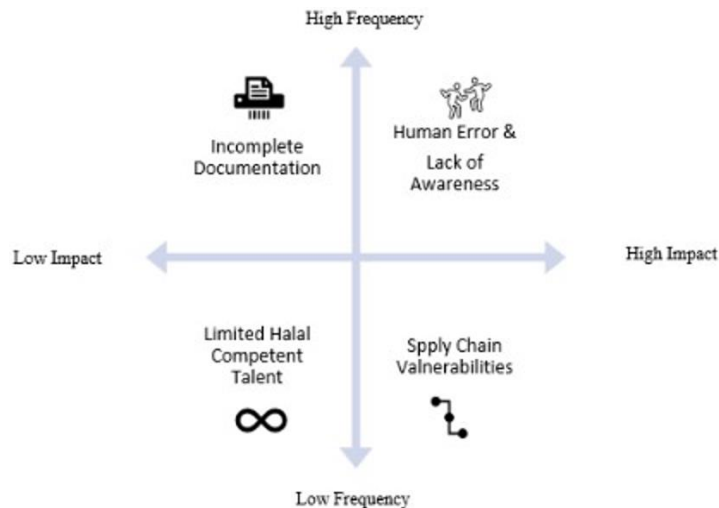

Figure 2: Strategic Prioritization Quadrant for Halal Compliance Domains

Domains in Figure 3 are mapped based on frequency and impact, guiding the prioritization of CQI interventions across hospitality operations. It illustrates the root cause analysis conducted using the Fishbone (Ishikawa) method. Triangulated data from internal audits, site observations, and document reviews were systematically categorized into four core domains responsible for compliance breakdowns: People, Process, Materials, and Environment.

Figure 3: Root causes of Halal Non-Compliance in Hospitality Operations

This diagnostic structure was critical for identifying operational drivers and strategic consequences, ultimately forming the foundation for the tailored CQI interventions designed to address each specific category of failure.

(a) People-Related Causes

The study revealed that inadequate training programs and insufficient knowledge of halal among staff were primary contributors to procedural lapses (Nur Hafizah et al., 2021). Data on staff demographics (Table 2) quantified this challenge, revealing a critical bottleneck in expertise. While compulsory halal awareness training was provided to all staff and each hotel maintained an internal halal committee (totalling 58 members across all properties), formal certification was concentrated in very few individuals. Specifically, a cohort of 288 food handlers was overseen by only 8 certified halal officers, creating expert-to-handler ratios as high as 1:60 in H1.

This structural imbalance meant that certified experts were too overstretched to provide consistent, hands-on supervision. For example, at H2, its two certified officers were responsible for 47 food handlers managing five halal kitchens, indicating a team with limited capacity for mentoring. This expertise shortfall was directly observed: checklists confirmed inconsistent execution of sertu procedures and a lack of staff confidence during mock drills, as general awareness training proved insufficient without adequate expert reinforcement. High staff turnover compounded these gaps, as new hires were often deployed before receiving complete orientation on halal standards (A. Karim et al., 2021). Furthermore, an over-reliance on one highly experienced officer (12 years) per property, supported by a less experienced counterpart (2-4 years), created a key-person risk, where the departure of a senior individual would leave compliance systems vulnerable. These findings are consistent with prior industry data that attribute 34% of halal certification breaches in Malaysian hotels to human resource constraints (Sabidin, 2016), specifically highlighting the risk of lean expert teams supporting a large workforce.

(b) Process-Related Causes

Weak documentation and fragmented monitoring systems emerged as pervasive flaws in the process. Internal audits revealed that 60% of recorded non-conformities were due to missing, outdated, or inconsistent SOPs across sites (Adham et al., 2022). For instance, H4 lacked marked halal zones in kitchen layouts during its March 2024 internal audit and had no updated logs for supplier verification. H1 experienced delays in their halal menu application due to submission errors and missing documentation, resulting in a prolonged approval timeline of approximately 160 days. The absence of real-time tracking mechanisms further limited these hotels' ability to enact timely corrective actions, a limitation also emphasized by (Wahyuni et al., 2024).

(c) Material-Related Causes

A key finding was that gaps in the halal supply chain, particularly insufficient verification of ingredients, posed a major risk to food integrity. This was clearly demonstrated during an audit at H3, where 17% of supplied items lacked up-to-date halal certification. This issue, which was identified by quality assurance teams, confirms existing literature on broken traceability in halal systems. The core problem lay not in the absence of procurement rules, but in the failure to enforce them effectively; without a blacklist for non-conforming vendors, hotels inadvertently continued to source from unreliable suppliers, repeatedly compromising the halal status of their food.

(d) Environment-Related Causes

Rushed conditions during peak service times directly undermined halal compliance across all hotels. Observational data confirmed that procedures for avoiding cross-contamination were

frequently bypassed when operational pressure increased. This was most evident at H4, a large-scale operation with three restaurants and three lounges, where checklist adherence fell significantly during high volume. Compounding this issue, the environmental design was inadequate; only one property featured consistent halal signage and reminders in key kitchen zones to guide staff. This lack of visual cues, combined with time pressure, created a high-risk environment, supporting previous studies that found such factors can reduce compliance by 40% (M. Battour et al., 2023; A. Marzuki et al., 2024).

Theoretical and Practical Implications

The findings reinforce prior research, indicating that halal assurance is not merely a procedural checklist, but a dynamic, cross-functional system that requires continuous organizational commitment and innovation (Prathama et al., 2024). The updated Fishbone (Ishikawa) mapped the root causes of non-compliance to four critical domains: people, processes, materials, and environment, highlighting that corrective efforts must extend beyond surface-level interventions. These insights justify a cyclical, systems-based approach as illustrated in Figure 4: Cycle of Practical Solutions and Best Practices.
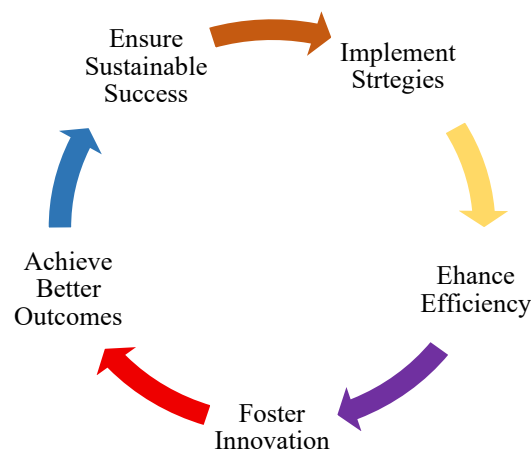

Figure 4: Cycle of Practical Solutions and Best Practices

This cycle emphasizes that effective halal governance begins with implementing targeted strategies, then evolves through efficiency gains, innovation, measurable improvements, and ultimately, sustainable compliance success. Each stage is interdependent and supported by actionable interventions.

i.   Competency-Based Halal Training

Competency-Based Training (CBT) remains a foundational element in implementing effective halal assurance systems. It focuses on equipping personnel with job-specific skills essential for maintaining procedural integrity and minimizing human error (Harwati et al., 2021). The CDC's Training of Trainers (TOT) model is particularly well-suited for hospitality chains, enabling the scalable dissemination of training through internal champions. At hotel properties, structured retraining efforts (as in H2's April–May 2024 corrective program) show that CBT can address high-frequency issues such as SOP non-adherence, especially during peak service times. The study's findings, which encompass data from officers with experience ranging from 2 to 12 years, also suggest that pairing seasoned officers with less experienced teams can enhance peer learning. Among the key Recommendations are to:

- Develop tailored competency models aligned with halal SOPs and MS 1500:2019.
- Leverage certified trainers to standardize quality across sites (Azanza & Madriaga, 2021).
- Implement regular skills audits and refresher sessions (Lau & Pang, 2018).

ii. Digitized Traceability Systems: Enhancing Efficiency and Reducing Errors

Digital solutions such as blockchain or Quick Response (QR) based tracking tools can drastically improve traceability and reduce administrative delays. For instance, in H1, the 160-day delay in certification was primarily due to documentation errors, which can be mitigated through real-time submission tracking and template-driven portals. Hotels like H4 have already begun implementing digital halal checklists in kitchens and storage areas, showcasing early-stage integration of tech-enabled traceability. These systems enhance audit preparedness, reduce human error, and facilitate better data aggregation across sites.

iii. Supplier Vetting and Blacklisting: Achieving Better Procurement Outcomes

Supply chain risk was confirmed as a high-impact, lower-frequency issue (Figure 2). H3 reported 17% of ingredients lacking verified halal documentation, underscoring gaps in vendor compliance. A standardized blacklisting mechanism, regularly updated and enforced collaboratively across brands, can eliminate repeat offenders and streamline halal sourcing (JAKIM, 2023). Hotels are also advised to create vendor performance dashboards tied to halal verification timelines, certificate validity, and responsiveness to audit flags.

iv. Halal-Conscious Environmental Design: Fostering Innovation in Operations

Environmental design elements such as clear Labelling, halal-only utensils, and zoned workspaces can reinforce SOP adherence under high-pressure kitchen conditions. During site visits, the research team observed that kitchens equipped with visual prompts (e.g., color-coded zones and signage) demonstrated 40% higher procedural compliance, supporting (A. Marzuki et al., 2024) findings on the role of environmental cues. Design innovations, such as digital wall checklists or prep station certification stamps, can create "compliance nudges" that make the right choice the easy choice.

Practical Solutions and Best Practices

Based on the cyclical model and grounded findings, the following best practices are recommended in Table 3:

Table 3: Best Practices Recommendations

Best Practice	Expected Outcome
1. Enhanced training and retraining programs	● Reduces procedural lapses during peak hours
2. Digital halal documentation systems	● Minimizes rejection risks and audit delays
3. Centralized supplier blacklisting	● Improves traceability and sourcing integrity
4. Quarterly sertu drills and recalls	● Enhances emergency preparedness
5. Embedded halal checkpoints in daily SOPs	● Promotes habitual compliance

These practices support continuous feedback loops in halal governance, aligning with the "Cycle of Practical Solutions and Best Practices" (Figure 4), which begins with targeted interventions and evolves into sustainable compliance outcomes.

Case Vignette: H2

To humanize the findings and offer a vivid representation of operational disparity, Hotel H2 serves as a standout case vignette. During a surprise inspection in March 2024, the hotel demonstrated poor readiness, with mock sertu rituals misapplied and key SOPs disregarded by frontline staff. Following this, a retraining initiative was introduced from April to May 2024, targeting all food handlers. Post-training audits revealed a significant improvement: procedural adherence increased by 38%, and non-conformity reports decreased by 42% compared to the prior quarter.

This quantifiable improvement confirms the impact of competency-based interventions when supported by clear documentation and operational oversight. It also emphasizes the importance of repetitive drills and regular refresher sessions to maintain compliance in high-pressure hospitality settings.

Comparative Outcomes Across Hotel Cluster

This matrix in Table 4 presents a comparative summary of the halal compliance issues, CQI-based interventions, and resulting performance improvements across the hotel cluster. Each intervention followed the PDCA cycle, and outcomes were tracked using post-intervention audits. The matrix illustrates how tailored solutions, ranging from retraining to digital traceability helped close the compliance gap between regulatory requirements and operational realities.

Table 4: Comparative Summary of Halal Compliance Interventions and Results by Hotel

Hotel	Key Challenge Addressed	CQI Intervention	Pre-Intervention Metric	Post-Intervention Outcome	(%) Change
H1	Delays in documentation & halal menu approval	Digital documentation system; SOP revision	Halal menu approval: 160 days	Approval in 112 days	↓ 30% faster
H2	SOP non-adherence; mock sertu failure	Competency-based retraining; mock drills	42% SOP non-conformity	SOP adherence ↑ 38%; non–conformity ↓ 42%	↓ 38 improve adherence ↓ 42% in NC count
H3	Unverified ingredients in procurement	Supplier vetting checklist; vendor blacklist	17% of ingredients lacked halal certification	Reduced to 6% unverified ingredients	↓ 65% gap closure
H4	Poor checklist compliance; weak zone labelling	Digital halal checklist; kitchen signage	60% procedural lapse during peak hours	Reduced to 33% lapse	↓ 27% reduction

Post-intervention assessments revealed measurable improvements across all four participating hotels. However, the magnitude and speed of impact varied depending on hotel size, baseline preparedness, and the complexity of the intervention. Hotel H2, which implemented an immediate and focused retraining program, demonstrated the most significant gains. SOP

adherence improved by 38%, and non-conformity reports dropped by 42% within two months. In contrast, Hotels H1 and H4, both large five-star properties with complex food and beverage operations, required longer CQI cycles to produce visible outcomes. Nevertheless, documentation reviews at H1 showed a 30% in procedural errors, shortening the halal menu approval process from 160 to 112 days. Similarly, H4's introduction of digital halal checklists and visual signage contributed to a 27% improvement in procedural compliance, particularly during peak service hours.

Hotel H3 tackled a critical procurement vulnerability, reducing its percentage of uncertified ingredients from 17% to 6% after formalizing a supplier vetting protocol and internal verification checklist. While the intervention required coordination with external suppliers, the outcome was both substantial and sustainable.

Collectively, these findings reaffirm the practical value of CQI cycles, not only in diagnosing halal assurance weaknesses but also in enabling context-specific, iterative improvements. Each hotel's CQI journey was shaped by its unique operational complexity, staff capacity, and management responsiveness, reinforcing the necessity of tailored, rather than uniform, strategies. The measurable impact of these interventions supports the argument for integrating CQI principles into Malaysia's halal certification renewal framework, especially within high-volume hospitality environments.

Thematic Synthesis
Thematic synthesis from the findings highlights seven critical pillars that underpin the effort to bridge the gap between halal certification standards and operational realities:
1. Human Error
2. Limited Halal Competency
3. Incomplete Documentation
4. SOP Lapses
5. Supply Chain Vulnerabilities
6. Service Pressure
7. Infrastructure Constraints

These themes provide a scaffold for future research and policy design, reinforcing that halal compliance must evolve from a static checklist to a dynamic, embedded governance process.

Limitations and Long-Term Sustainability
While the study provides compelling evidence of CQI's effectiveness in bridging halal compliance gaps, several limitations must be acknowledged. First, the study focused on a single hotel cluster within Malaysia's Klang Valley, which may limit the generalizability of findings to hotels operating in different governance structures or regions. Second, the interventions were observed over a relatively short period (6 months). While improvements were measurable, long-term adherence remains unverified. Third, the methodological approach presents potential limitations. The Hawthorne effect (Miller & Landsberger, 1959), where participant behavior may change temporarily due to the awareness of being studied, cannot be ruled out. Furthermore, the presence and involvement of the research team could have introduced observer bias, where the collection and interpretation of data were unconsciously influenced by the researchers' expectations and their role in facilitating the CQI interventions. Finally, external factors such as staff turnover and operational pressures may erode gains unless continuous reinforcement mechanisms are institutionalized. Future studies should investigate

follow-up audits beyond 12 months and explore how CQI principles can be integrated into national halal certification renewal frameworks to ensure sustainability.

Conclusion
This study diagnosed the persistent operational gap between halal certification standards and daily practice within a cluster of Malaysian hotels. By applying a integrated Fishbone-PDCA framework, it identified root causes across the People, Process, Materials, and Environment domains and implemented targeted CQI interventions that yielded measurable improvements in compliance metrics. The contributions of this work are threefold, encompassing theoretical, practical, and policy realms.

Theoretical Contribution
This study provides a novel theoretical contribution by integrating operational management theory with halal assurance principles. It demonstrates the successful application of the Continuous Quality Improvement (CQI) methodology and Fishbone root cause analysis—frameworks proven in healthcare and manufacturing—to the context of halal hospitality governance. This cross-disciplinary synthesis offers a new, robust theoretical lens for understanding and addressing operational compliance gaps not as isolated failures, but as interconnected systemic issues.

Practical Contribution
For industry practitioners, this research provides a scalable, evidence-based roadmap for enhancing halal integrity. The study offers actionable strategies, such as competency-based training models, digital traceability systems, standardized supplier vetting protocols, and halal-conscious kitchen design. The documented results—including a 38% increase in SOP adherence, a 42% reduction in non-conformities, and a 30% faster certification approval—provide a compelling business case for adopting a CQI approach. The case vignette and comparative matrix offer tangible benchmarks for hotel managers to evaluate and improve their own operations.

Policy Contribution
For regulatory bodies and policymakers (e.g., JAKIM, HDC), this study offers critical insights for strengthening the national halal ecosystem. The findings advocate for moving beyond a focus on certification audits towards promoting ongoing operational excellence. Key policy recommendations include:
- Integrating CQI principles into the halal certification renewal framework to ensure sustained compliance.
- Developing scalable staffing guidelines that mandate expert-to-handler ratios based on operational complexity.
- Creating incentives or support programs for hotels to adopt digital management systems that enhance traceability and transparency.
- Standardizing vendor blacklisting mechanisms across the industry to secure the halal supply chain.

In summary, this paper bridges the critical disconnect between policy and practice by providing a holistic, scalable model for halal governance. To secure Malaysia's leadership in the global halal economy, we urge policymakers to integrate CQI principles into national certification standards and call upon hotel operators to adopt these iterative frameworks, transforming halal compliance from a static certificate into a dynamic, sustainable competitive advantage.

AI Disclosure Statement

In the course of preparing this work, the principal author (Sharifah Azwani) utilized CHATGPT to enhance the writing style and to check for grammar and spelling errors using Napki.AI to create diagrams. After using this tool, the author(s) carefully reviewed and revised the content as necessary and assumed full responsibility for the final publication.

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