

HOW CAN HALAL CERTIFICATION SERVICES ADVANCE TOWARD DIGITAL MATURITY? A PUBLIC INNOVATION PERSPECTIVE

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ABSTRACT

Halal certification services for MSMEs have become increasingly important amid the strengthening of halal certification obligations, the acceleration of public service digitalization, and the growing demand for services that are simpler, faster, and more responsive. This condition creates an urgent need to examine the extent to which halal certification services have progressed toward digital maturity from a public innovation perspective. This study aims to analyze the movement of halal certification services for MSMEs toward digital maturity by focusing on process integration, ease of access, quality of assistance, and user orientation. The theoretical framework draws on public innovation, public service quality, and digital maturity. This study employs a qualitative approach with a case study design based on document analysis and secondary data, using documentation techniques, purposive sampling, and thematic analysis. The findings show that halal certification services have been digitalized and institutionally strengthened, yet their level of maturity remains developing because process integration, service standardization, and user experience have not been fully consistent. These findings indicate that digital transformation in service delivery requires institutional capacity, not merely the existence of digital platforms.

Keywords: Halal Certification for MSMEs; Digital Maturity; Public Innovation

INTRODUCTION

Public sector digital transformation has moved beyond the mere automation of procedures, as it fundamentally reconfigures service architecture, work processes, and the creation of public value (Carter et al., 2024). Digital maturity should therefore be understood as an organizational capacity to align technology, processes, and human resources, rather than simply as the level of application adoption (Novienty et al., 2025). Digital government maturity models that overlook citizens tend to fail in capturing the core of service transformation that is inclusive and responsive to user needs (Waara, 2025). Government-led digitalization programs require knowledge orchestration and cross-actor coordination in order to genuinely generate public value, particularly in the small-business sector (Shirish et al., 2025). Ultimately, the success of public service transformation is shaped more by the quality of implementation and institutional arrangement than by the mere presence of technology itself (Szedmák et al., 2025).

Halal certification has evolved from a merely normative compliance instrument into a mechanism for building market trust, ensuring legal certainty, and strengthening the position of micro, small, and medium enterprises in the national economy (Yuanitasari et al., 2025). The efficiency expected from digitalization, however, continues to face persistent barriers, including limited income, manual administrative practices, low digital literacy, inadequate facilities, and insufficient supporting documents among micro and small enterprises (Yuanitasari et al., 2025). Business actors' willingness to enter the self-declare scheme is also shaped by their knowledge, awareness, readiness, and perceived ease of the process, indicating that the issue extends beyond regulation alone (Dawam et al., 2023). The digitalization of halal certification has been shown to shorten processing time, reduce administrative burdens, and expand market access when digital services are genuinely usable for MSMEs in practice (Syarofi & Syam, 2025). The core challenge, therefore, has shifted from the formal obligation to obtain certification toward the capacity of public service systems to transform certification into a digital experience that is simple, affordable, and trustworthy (Syarofi & Syam, 2025; Yuanitasari et al., 2025).



Regional facilitation data indicate that halal certification services for MSMEs have been implemented continuously throughout 2017–2024, suggesting that the demand for such services is both real and consistently maintained within the agenda of local government agencies (Dinas Perdagangan & Perindustrian Kota Bandung, 2025). Regional planning documents set performance targets for 80 small and medium industry products to obtain certification or standardization in 2024 and 90 products in 2025, accompanied by dedicated budget allocations, thereby indicating measurable service pressures in this area (Dinas Perdagangan & Perindustrian Kota Bandung, 2024). Service demand intensified after halal certification became mandatory for food products, beverages, slaughter products, and slaughtering services on 18 October 2024, making the acceleration of facilitation increasingly urgent (Badan Penyelenggaran Jaminan Produk Hala (BPJPH), 2024). At the national level, service delivery has also shifted toward digital channels through updates to the SIHALAL system and the provision of online guidance, meaning that the certification process can no longer be understood as a conventional administrative procedure (BPJPH, 2025). What emerges, therefore, is no longer the absence of a facilitation program, but rather a gap between service expansion, compliance demands, and the depth of digital maturity, particularly in terms of process integration, the standardization of assistance, and ease of use at the MSME level (Dinas Perdagangan & Perindustrian Kota Bandung, 2024; (BPJPH, 2025).

According to Santoso & Rachman (2023), the digitalization of halal certification has gained an increasingly solid policy foundation and legal certainty, such that the certification process is no longer perceived as an ordinary administrative procedure, but rather as part of a broader public service transformation based on digital systems. Dawam et al. (2023) found that the decision of micro and small business actors to participate in the halal certification scheme is strongly influenced by government policy support, whereas internal business factors exert only a more limited effect on their readiness to engage in the process. Consistent with Rizkaprilisa et al. (2024), the main obstacles in halal certification services arise at the implementation stage, particularly in the limited knowledge of business actors regarding registration procedures, insufficient understanding of how to use SIHALAL, and the lengthy assistance process, which in many cases exceeds three months. Taken together, these findings suggest that the issue of halal certification for MSMEs lies not only in regulatory obligation, but also in service capacity, institutional support, and the ability of digital systems to effectively reach and serve users.

Previous studies share common ground with this article in that they position halal certification for MSMEs as a strategic issue closely linked to public service delivery, institutional support, and business actors' adaptation to increasingly digitalized processes. A further similarity lies in the recognition that the success of halal certification is not determined solely by regulatory obligation, but also by ease of access, procedural clarity, the quality of assistance, and the effectiveness of service implementation. This shared emphasis suggests that halal certification for MSMEs has evolved into an interconnected administrative, organizational, and service issue. However, earlier studies have largely focused on the regulatory dimension of digitalization, the factors shaping business actors' willingness to participate, and the operational barriers emerging in the assistance process and system use. By contrast, this article takes halal certification services themselves as the primary object of analysis. Its attention is directed not merely to legal compliance or business actors' intentions, but to how such services are designed, delivered, and developed toward digital maturity within the framework of public innovation. This position brings the article closer to an assessment of local service capacity in supporting the transformation of halal certification services in a more systematic manner.

The originality of this study lies in its perspective, *which treats halal certification for*



MSMEs not merely as an administrative obligation or a facilitation program, but as a digital public service whose level of maturity must be assessed. The study does not stop at asking whether the service has been digitalized; rather, it addresses the more fundamental question of how mature the service is in terms of process integration, procedural simplification, assistance mechanisms, and user orientation. Its novelty also resides in linking the transformation of halal certification services to the perspective of public innovation, thereby moving beyond the technical dimension of digital applications to highlight institutional capacity in producing services that are more effective, responsive, and sustainable. In this way, the study offers a more specific and operational lens for explaining how digital maturity is developed within halal certification services for MSMEs.

The urgency of this study has become more pronounced because the mandatory halal certification requirement for micro and small enterprises producing food and beverages has been postponed, making the current transition period a critical phase for assessing service readiness before the obligation is fully enforced. According to BPJPH, halal certification registration services have shifted to a one-stop digital system through SIHALAL, while the broader service transformation agenda has been directed toward system integration, process acceleration, and the reduction of repetitive data entry. This condition indicates that the main challenge no longer lies in the mere availability of a digital platform, but rather in the level of service maturity in delivering processes that are integrated, accessible, efficient, and effective for MSMEs. Pressure at the local level is also evident in the existence of facilitation data on halal certification for MSMEs from 2017 to 2024, as well as in local performance targets that continue to push for an increase in the number of small and medium industry products obtaining certification or standardization, from 80 in 2024 to 90 in 2025. Taken together, these conditions make this study important, as an evaluation of the digital maturity of halal certification services can provide a stronger basis for strengthening public innovation, improving assistance arrangements, and refining service design for MSMEs.

This study aims to analyze how halal certification services for MSMEs are progressing toward digital maturity from the perspective of public innovation, by examining the extent to which digitally enabled service processes are able to create services that are more integrated, simple, accessible, responsive, and user-oriented. This focus is intended to understand service maturity not merely in terms of the existence of a digital system, but also in relation to institutional capacity in managing service flows, assistance, coordination, and user experience more effectively. Through this objective, the study is expected to provide a more comprehensive understanding of the readiness of halal certification services for MSMEs in responding to the demands of public service transformation at the local level.

Public Innovation Theory

Public innovation refers to the process through which new ideas, practices, or approaches are generated and implemented within public organizations to improve both service delivery mechanisms and outcomes. Novelty in public innovation does not necessarily imply something entirely unprecedented in a universal sense; rather, it may involve the adoption or adaptation of approaches that are new within a specific organizational or service context. Public innovation extends beyond administrative procedural changes, as its central meaning lies in the capacity of such changes to generate greater value for society. This perspective positions innovation as an integral response of public institutions to evolving citizen demands, increasing problem complexity, and ongoing pressures for organizational transformation. The relevance of this theoretical lens to the present study lies in viewing halal certification services for MSMEs as a domain of service innovation that requires not only procedural improvement but also the



creation of public value through services that are simpler, faster, and more accessible (Hartley et al., 2024).

- Service innovation
- Service process improvements
- Public value generated
- Institutional response to user needs
- Organizational adaptation to change

Public Service Quality Theory

Service quality theory conceptualizes quality as the outcome of a comparison between users' expectations and the actual experience they receive when utilizing a service. This perspective emphasizes that service quality is not determined solely by administrative outputs, but also by how the service is delivered, perceived, and experienced by users. Over time, this concept has been operationalized through the SERVQUAL model, which systematically evaluates the core dimensions of service performance. The approach remains highly relevant in the public sector, where service success is ultimately assessed by the institution's ability to meet citizens' needs in a reliable, timely, assuring, and humane manner. This theoretical lens is particularly pertinent to the present study, as the maturity of halal certification services should be reflected in the experiences of MSMEs as end users who directly benefit from the service process (Parasuraman et al., 1985, 1988).

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

Digital Maturity Theory

Digital maturity refers to the level of advancement achieved by an organization in developing and managing digital transformation in a comprehensive manner. This concept goes beyond the mere presence of digital technologies, encompassing the organization's ability to align processes, structures, human resources, and governance within a more integrated system of operation. Digital maturity is generally understood as a staged condition that reflects what an organization has accomplished לאורך its digital transformation journey. This perspective underscores that digital maturity is not equivalent to partial digitalization, but rather to the institutional capacity to utilize technology strategically, consistently, and adaptively in support of organizational objectives. This theoretical framework is highly relevant to the present study, as halal certification services cannot be assessed solely based on the existence of digital platforms, but must be evaluated in terms of how far such services have matured in integrating processes, simplifying access, and enhancing service effectiveness for MSMEs (Hawrysz et al., 2025; Thordsen & Bick, 2023). Indicators:

- Service process integration
- System and data interoperability
- Digital flow standardization
- Service human resource capabilities
- Evaluation-based continuous improvement

METHODS

This study employs a qualitative approach with a case study design supported by document analysis and secondary data. This approach was chosen because the study focuses on



how halal certification services for MSMEs are progressing toward digital maturity within the context of public service delivery, thus requiring an in-depth understanding of processes, mechanisms, and institutional capacity rather than a statistical examination of relationships among variables. A case study design is particularly relevant because it enables the phenomenon to be explained contextually within the real environment of public service practice. Data were collected through documentation techniques and secondary data tracing, drawing on the *Daftar Fasilitas Sertifikasi Halal UMKM* dataset available on Open Data Kota Bandung, the 2024 Work Plan of the Bandung City Department of Trade and Industry, and official information from BPJPH regarding halal certification mechanisms, the use of SIHALAL, and one-stop registration services. This technique was selected because official documents provide stable information, can be revisited for verification, and are capable of revealing service development from both administrative and operational perspectives (Bowen, 2009; Hyett et al., 2014; Johnston, 2014).

The sampling technique used in this study is purposive sampling, namely the deliberate selection of data sources based on their relevance, source authority, depth of information, and direct connection to the research focus. This selection was directed toward documents that specifically contain information on halal certification facilitation for MSMEs, local performance targets, and the development of digital services supporting the certification process. Data were analyzed using thematic analysis combined with a descriptive reading of secondary data. The analytical process began with reading and reviewing all documents, followed by coding sections related to service process integration, ease of access, quality of assistance, user orientation, and elements of public innovation. These codes were then grouped into major themes to explain how halal certification services for MSMEs are moving toward digital maturity, and were further strengthened by simple descriptive tabulation of facilitation data trends so that the interpretation would remain grounded in a clear empirical basis (Bowen, 2009; Braun & Clarke, 2006; Johnston, 2014; Palinkas et al., 2015).

RESULT AND DISCUSSION

Overview and Transformation of Halal Certification Services for MSMEs

The documentary findings indicate that halal certification services for MSMEs are organized within a multi-actor structure involving BPJPH as the service authority, SIHALAL as the main digital channel, PPH facilitators as initial verification agents, and local government as the actor responsible for expanding facilitation access for business operators. Within this structure, SIHALAL functions not merely as a supporting application, but as the formal entry point connecting registration, document uploading, and electronic certificate submission through a one-stop service system. The role of local government is also clearly evident, as the City of Bandung not only provides programmatic support but also records this facilitation trajectory in the official *Daftar Fasilitas Sertifikasi Halal UMKM* dataset for the 2017–2024 period. The Open Data Kota Bandung organizational page presents a summary of 918 entries for this dataset, while the 2024 Work Plan of the Department of Trade and Industry sets a target of 80 small and medium industry products to obtain halal certification, SNI, quality testing, and TKDN certification in 2024, increasing to 90 in 2025. This pattern suggests that halal certification services for MSMEs have shifted from a fragmented administrative service into one that is increasingly organized, digitalized, and embedded within the local government's performance agenda (BPJPH, 2024; Dinas Perdagangan & Perindustrian Kota Bandung, 2025).

Santoso and Rachman argue that the digitalization of halal certification has strengthened service certainty because regulatory frameworks and system design have increasingly encouraged certification processes to operate in a more structured manner within a digital



ecosystem. Consistent with Dawam et al. (2023), government policy support emerges as a highly decisive external factor influencing business actors' decisions to enter the halal certification scheme, particularly under the self-declare mechanism. Rizkaprilisa et al. (2024) likewise emphasize that difficulties in using SIHALAL, limited procedural knowledge, and the lengthy assistance process remain major weaknesses in service implementation on the ground. These findings reinforce the view that service transformation cannot be demonstrated solely by the availability of a digital platform, but must instead be assessed through the capacity of the system and service actors to reduce access barriers for MSMEs. This direction is consistent with studies that position halal certification as an arena in which policy, service delivery, and facilitation are closely intertwined within the broader process of public service digitalization (Dawam et al., 2023; Rizkaprilisa et al., 2024; Santoso & Rachman, 2023).

The service structure observed in this case demonstrates that halal certification for MSMEs has moved beyond the conventional service model that depended heavily on face-to-face interaction and the physical transfer of documents. SIHALAL occupies a central position because it reshapes the point of service entry, the rhythm of submission, and the form of interaction between business actors and service authorities. Local government is also no longer situated at the margins of the process, as regional facilitation now functions as a bridge connecting MSME needs with an increasingly digital national service system. This condition makes halal certification services operate as a layered service arrangement that combines a digital platform, substantive assistance, and local institutional support. Such a transformation is significant, yet it does not automatically indicate that the service has already achieved digital maturity.

Service development also reflects a gradual strengthening in the design of facilitation. The 2023 Work Plan of the Bandung City Department of Trade and Industry still stated a target of 150 halal certification documents, whereas the 2024 Work Plan shifted the focus toward a more integrated indicator, namely the number of small and medium industry products obtaining halal certification, SNI, quality testing, and TKDN certification, with targets of 80 in 2024 and 90 in 2025. This shift in indicators suggests that halal certification is increasingly being positioned as part of a broader agenda of standardization and product competitiveness enhancement, rather than as a stand-alone administrative service. At the national level, BPJPH has also emphasized that applications are submitted through *ptsp.halal.go.id* and SIHALAL so that the process becomes one-stop, more practical, and accessible from any location. This direction of development indicates that the simplification of access and procedures has become part of the service strategy, although its effectiveness still depends on user readiness and the consistency of facilitation support (BPJPH, 2024; Dinas Perdagangan & Perindustrian Kota Bandung, 2024)

Halal certification services for MSMEs have therefore undergone a substantive shift in service structure, access mechanisms, and the positioning of involved actors. This transformation is reflected in the strengthened role of SIHALAL as the formal service channel, the integration of regional facilitation into performance agendas, and the transition from an administrative model toward a more standardized digital service approach. The findings also indicate that service transformation is still unfolding amid implementation constraints, particularly where system convenience is not consistently matched by user readiness, the quality of facilitation, and the overall simplification of the service experience. This condition underscores that the mere presence of a digital platform is insufficient to claim service maturity, as maturity requires stronger process integration, effective coordination among actors, and a more consistent user-oriented approach. This point subsequently directs the analysis toward a more fundamental question, namely the extent to which halal certification services for MSMEs have genuinely progressed toward digital maturity in the practice of public service delivery (BPJPH, 2024;



Dawam et al., 2023; Rizkaprilisa et al., 2024).

Digital Maturity in Halal Certification Services for MSMEs

The data indicate that service process integration has begun to take shape within a relatively clear digital workflow, as the self-declare application progresses through a sequence that includes SIHALAL account creation, application submission, document verification by BPJPH, validation by PPH facilitators, halal fatwa deliberation, and finally the issuance and download of certificates within the same system. Service interoperability has also strengthened with SIHALAL positioned as a one-stop access channel through *ptsp.halal.go.id*, further supported by system updates and the provision of user manuals for both regular and self-declare schemes. The standardization of the digital workflow is reflected in increasingly structured stages; however, regional performance documents still note that the transition from previous administrative processes to mechanisms under BPJPH has affected the speed of facilitation services. Supporting service capacity is evident through the combined roles of BPJPH as the authority, PPH facilitators as intermediaries, and local government facilitation, which positions halal certification as part of the performance targets for small and medium industry products. Continuous improvement and user orientation are also emerging through SIHALAL updates and the availability of guidance materials, although regional documents still highlight the need for user education, as business actors continue to experience confusion in navigating the service process (BPJPH, 2025; Dinas Perdagangan & Perindustrian Kota Bandung, 2024; Yuanitasari et al., 2025).

Santoso & Rachman (2023) argue that the digitalization of halal certification strengthens service certainty, as regulatory frameworks and system design increasingly structure certification processes within a formal digital ecosystem. In line with this, Dawam et al. (2023) demonstrate that government policy support serves as the most decisive external driver of business actors' willingness to enter the self-declare scheme, indicating that institutional capacity remains central to service expansion. These findings are consistent with current conditions, which show that services have moved toward more standardized, digitalized workflows supported by institutional facilitation. However, Rizkaprilisa et al. (2024) provide a more critical perspective, reporting that 80% of business actors are unaware of how to register for halal certification, 63% assume their products are already halal without the need for certification, and more than half of facilitators identify low user understanding as the main obstacle in the certification process. This contrast suggests that digital maturity cannot be assessed solely through the presence of platforms and regulations, as user readiness and the quality of service interaction remain decisive in determining whether the system functions in a mature manner or is still operating within a transitional phase (Dawam et al., 2023; Rizkaprilisa et al., 2024; Santoso & Rachman, 2023).

These conditions indicate that halal certification services for MSMEs cannot yet be categorized as fully digitally mature. Process integration is indeed established, but it remains largely procedural, as service continuity still depends heavily on the coordination of roles among actors, the quality of facilitation, and the ability of business actors to correctly follow digital procedures. System interoperability has not yet fully materialized as seamless data exchange among central authorities, facilitators, and local government actors, given that regional facilitation efforts still operate as parallel programmatic support rather than being fully embedded within the national system. Workflow standardization has improved compared to earlier periods, yet procedural clarity does not always translate into ease of use for users with limited digital literacy. This position suggests that the digital maturity of halal certification services is more accurately understood as an ongoing, incremental process rather than a finalized



state.

The trajectory of service development continues to exhibit a positive trend. BPJPH has persistently updated the SIHALAL system, provided more detailed user guidelines, and introduced additional service features within the same platform, while local governments have shifted halal certification from a stand-alone administrative target toward a more integrated component within the broader product standardization agenda for small and medium industries. The transition from a target of 150 halal certification documents in the 2023 Work Plan to indicators based on the number of products obtaining halal certification, SNI, quality testing, and TKDN in the 2024–2026 planning framework reflects a repositioning of the service as an instrument of competitiveness rather than merely a form of legal compliance. This development suggests a strengthening of supporting service capabilities and continuous improvement, as certification is no longer treated solely as a certificate issuance process but as part of a broader effort to enhance MSME product quality. Such a direction is critical, as higher levels of digital maturity can only be achieved when process integration, system interoperability, mechanism standardization, facilitation capacity, and user experience evolve simultaneously rather than in isolation (BPJPH, 2025; Dinas Perdagangan & Perindustrian Kota Bandung, 2025).

Halal certification services for MSMEs, therefore, have established a foundation for digital maturity, although this foundation remains in a developmental stage. Their primary strengths are reflected in the emergence of a more centralized digital workflow, strengthened procedural standardization, the presence of facilitation support, and the increasing alignment between regional facilitation efforts and product performance agendas. At the same time, limitations persist, particularly in the form of uneven coordination among actors, varying levels of user readiness, and continuing barriers that affect both the speed and accessibility of services. This situation indicates that the digital maturity of halal certification services cannot be sufficiently explained from a purely technical perspective, as the value of the service is ultimately determined by the extent to which these changes produce tangible ease, certainty, and benefits for MSMEs. This point leads to a further analytical question, namely whether the evolving digital maturity can already be interpreted as a manifestation of public innovation in halal certification services for MSMEs.

Digital Maturity as a Form of Public Innovation in Halal Certification Services

Table 1. Digital Maturity Findings and Their Manifestation as Public Innovation in Halal Certification Services for MSMEs

Subpoints	Forms of findings in the field	Meaning as public innovation	Temporary position
Service Process Integration	Registration, document upload, verification, assistance, and certificate issuance are now directed through SIHALAL/PTSP.	Services are no longer scattered, but are beginning to be integrated into a single process chain.	Developing
System and Data Interoperability	There is a working relationship between BPJPH, PPH facilitators, and regional facilitators, but data flow and coordination are not yet fully integrated.	Innovation emerges as a service ecosystem, not a single system.	Developing, not yet fully developed



Digital Flow Standardization	The self-declaration and regular flow are becoming more standardized, user guides are available, and procedures are more defined.	Services become more consistent and easier to replicate.	Developing towards maturity
Service Support Capabilities	There is institutional support from BPJPH, facilitators, and regional governments through targets and facilitation.	Public innovation is supported by collaboration between actors.	Developing
Continuous Improvement and User Orientation	SIHALAL has been updated, and manuals are provided, but challenges remain for business actors in terms of literacy and understanding.	Institutions are becoming responsive, but the benefits of innovation are not yet felt evenly.	Developing, not yet fully developed

Source: Processed by researchers, 2025

Service process integration

Field findings indicate that halal certification services for MSMEs no longer operate as a series of fully fragmented procedures, as the registration process has been consolidated through *ptsp.halal.go.id* and the SIHALAL platform. Business actors are no longer required to submit physical documents directly to BPJPH offices to initiate applications; instead, they create accounts, complete data entry, and submit certification requests electronically. Within the self-declare scheme, the system has also begun to structure the sequence of interactions among business actors, PPH facilitators, verification processes, and certificate issuance into a more connected workflow. This condition reflects a degree of service innovation in terms of process consolidation, as interactions that were previously dispersed are now framed within a formal digital pathway. However, this integration remains in a developmental phase, as the smooth functioning of the service continues to depend on the ability of each actor to perform their roles consistently within the system.

System and data interoperability

Field findings indicate that digital services have begun to support coordination among actors, yet they do not fully demonstrate comprehensive interoperability. BPJPH provides the primary service channel, PPH facilitators perform substantive verification functions, and local governments act as facilitators that expand access for MSMEs. This pattern suggests that the service no longer operates as a single, isolated mechanism, but rather as an ecosystem connecting multiple actors. However, its limitations are evident in the fact that regional facilitation still appears more as programmatic support and performance targeting that run parallel to the national system, rather than being fully integrated into a unified flow of data and services. This implies that public innovation has progressed toward a collaborative model, but has not yet achieved seamless data integration and fully synchronized coordination.

Standardization of digital flows

Field findings indicate that service flows are becoming more standardized because BPJPH has established a one-stop shop mechanism, separating regular and self-declaration channels,



and equipped SIHALAL with a downloadable user manual. This guideline clarifies service stages and reduces procedural uncertainty. On the regional side, the shift from the target of "150 halal certification sheets" in the 2023 Work Plan to the indicator of SME products obtaining halal certification, SNI, quality testing, and TKDN in the 2024–2026 Work Plan also demonstrates a more integrated standardization in the performance agenda. This change demonstrates that halal certification is no longer treated as a stand-alone administrative activity but is beginning to be integrated into the product quality development system. This indicates innovation in the aspects of process certainty and consistency of service mechanisms.

Service support capabilities

Field findings indicate that the digital maturity of halal certification services is not determined solely by the SIHALAL platform, but also by the capacity of the actors supporting the service. BPJPH exercises control over the system and procedural framework, PPH facilitators provide initial verification support, while local governments facilitate MSMEs through programs and budgetary assistance. Within regional policy documents, halal certification has been incorporated into the performance targets for small and medium industry products, indicating that the service has been embedded within broader local industrial development strategies. This positioning suggests that public innovation emerges not only from technological adoption, but from the organizational capacity to build institutional support systems that enable the service to function effectively. Nevertheless, service quality remains highly dependent on the effectiveness of facilitation and the ability of business actors to navigate the available processes.

Continuous improvement and user orientation

Field findings reveal ongoing efforts toward continuous improvement, as the SIHALAL system has been updated and complemented with more detailed user guidelines for both regular and self-declare schemes. This indicates that institutions are becoming increasingly responsive to user needs rather than allowing the system to operate without refinement. However, prior studies consistently show that many business actors remain unfamiliar with registration procedures, have limited understanding of SIHALAL, and still require intensive facilitation support. This situation suggests that user orientation has begun to be incorporated at the system level, yet its benefits have not been evenly experienced across all MSMEs. From a public innovation perspective, this reflects a form of responsiveness that is emerging, but has not yet fully achieved inclusivity.

Implications for Regional Public Services

The most immediate implication for local public service delivery lies in the need to shift service design from an administrative facilitation model toward an integrated digital service that is accessible, measurable, and performance-oriented. Halal certification registration is now conducted through a one-stop system via *ptsp.halal.go.id* and SIHALAL, while the City of Bandung has institutionalized MSME halal certification facilitation within an official dataset covering the 2017–2024 period, comprising 918 recorded entries on the Open Data platform. The 2024 Work Plan of the Department of Trade and Industry further establishes performance targets of 80 small and medium industry products obtaining certification or standardization in 2024, increasing to 90 in 2025, thereby embedding halal certification within the logic of regional service performance rather than treating it as a supplementary program. Consequently, local governments are required to design services that extend beyond application assistance, integrating information provision, facilitation mechanisms, performance targets, and user experience within a coherent service architecture. This direction underscores that the quality of local public services will be largely determined by the capacity of local governments to translate national systems into



operational service designs that are more practical and user-friendly for MSMEs (BPJPH, 2025; Dinas Perdagangan & Perindustrian KotaBandung, 2025, 2024).

Santoso & Rachman (2023) argue that the digitalization of halal certification enhances procedural certainty, as certification processes are increasingly structured within a more formal and organized digital service framework. In line with this, Dawam et al. (2023) demonstrate that government policy support constitutes a critical external determinant of business actors' participation in halal certification schemes, indicating that institutional quality remains central to service effectiveness. At the same time, Rizkaprilisa et al. (2024) present a more critical perspective, highlighting low levels of business actors' understanding of registration procedures, limited familiarity with SIHALAL, and the prolonged duration of facilitation processes, suggesting that the presence of digital platforms does not automatically resolve service barriers. These findings collectively reinforce the importance of strengthening MSME facilitation while emphasizing that central-local integration and frontline service capacity remain decisive in translating digitalization into tangible benefits. Accordingly, the implications of this study extend beyond system improvement to encompass the need for more educative, responsive, and collaborative local service models.

These conditions indicate that local governments cannot remain merely providers of formal facilitation, but must assume the role of translating national service systems into service experiences that MSMEs can meaningfully navigate. Service design must bridge the gap between standardized systems at the central level and the diverse capabilities of business actors at the local level. Facilitation should not be treated as a supplementary component, as it serves as the critical interface connecting the logic of digital systems with users' ability to follow processes correctly. Central-local integration therefore becomes essential, because without consistent coordination, services may appear modern at the system level while remaining confusing at the user level. At this point, the meaning of public innovation lies in the capacity of local institutions to deliver services that are simpler, closer to users, and more supportive, rather than merely more digital.

The direction of development, therefore, needs to advance along four interrelated dimensions. First, local governments should refine halal certification service design by providing locally grounded information channels connected to SIHALAL, developing more simplified guidance, and positioning halal facilitation as part of broader MSME competitiveness enhancement services. Second, facilitation strengthening should focus on more structured capacity-building, improved facilitator competencies, and regional financing support, in line with BPJPH's encouragement for local governments to accelerate certification through local budgets and strengthen regional halal ecosystems. Third, central-local service integration must be enhanced through data synchronization, clearer role delineation, and the strengthening of local institutional nodes, so that facilitation functions not as a parallel program but as part of a unified service chain. When these measures are implemented, local public innovation will not only be reflected in the introduction of new services, but in the ability of governments to develop halal service models that are more adaptive, collaborative, and sustainable ((BPJPH), 2024, 2025).

These implications underscore that halal certification services for MSMEs can serve as a strategic entry point for broader public service reform at the local level. The case demonstrates that digital transformation generates public value only when service design, facilitation, inter-institutional coordination, and user orientation evolve simultaneously. Local governments should therefore view halal certification not merely as an administrative obligation, but as a service instrument capable of improving MSMEs' access to legality, quality assurance, and competitiveness. In this regard, public innovation at the local level should not be assessed solely



by the presence of digital platforms, but by the extent to which services deliver tangible, understandable, and accessible benefits for business actors. This insight ultimately leads to the study's concluding premise: the digital maturity of halal certification services will determine the extent to which local public innovation effectively serves MSMEs as the primary users of the service ((BPJPH), 2024; Dinas Perdagangan dan Perindustrian Kota Bandung, 2024, 2025).

CONCLUSION

Halal certification services for MSMEs have moved towards digital maturity through the use of digital systems, regional facilitation, and the structuring of service procedures. However, their maturity level is still developing because process integration, standardization of assistance, ease of access, and orientation towards user experience have not been implemented consistently. These findings answer the research problem formulation and demonstrate that the research objective has been achieved, namely explaining how halal certification services move towards digital maturity from a public innovation perspective. The main significance of these results lies in the fact that digital transformation is not only characterized by the existence of a platform, but must be realized in services that are more connected, simple, responsive, and easy to use by MSMEs. The contribution of this research lies in the perspective that positions halal certification not merely as an administrative compliance issue, but as a digital public service whose maturity level can be assessed more operationally in the regional context. Based on this, service managers and policymakers need to strengthen system integration, simplify service flows, expand adaptive assistance, and establish user feedback mechanisms. While future research needs to expand the study area and use primary data or a mixed design because this study is still limited to document analysis and secondary data.

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