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Sharia Public–Private Partnerships Infrastructure in Indonesia: A Framework for the Operational Phase

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ABSTRACT

In recent years, local governments and central ministries in Indonesia have demonstrated growing interest in Sharia Public–Private Partnerships (PPPs) as a mechanism for accelerating infrastructure development. The novelty of this study lies in its explicit focus on the operational phase of Sharia PPPs, a critical stage characterised by sustained project execution and long-term engagement with communities. To date, existing studies and policy discussions in Indonesia have largely concentrated on the planning and financing phases of Sharia PPPs, with limited attention given to operational realities. This study employed semi-structured interviews with 22 experts representing business practitioners, government institutions, and multilateral agencies or professional associations. The findings identified four overarching themes that reflect key challenges and opportunities in managing Sharia-compliant PPP infrastructure financing in Indonesia: dissemination of Sharia PPP operations, PPP management preparation, monitoring the implementation of the PPP agreement, and concession termination. Each theme is further elaborated through supporting subthemes and detailed empirical insights. These findings contribute new understanding of Sharia PPP operations in the Indonesian context and provide practical guidance for policymakers, investors, financial institutions, and practitioners seeking to strengthen Sharia-compliant partnerships for sustainable infrastructure development. However, as the findings are broadly applicable across infrastructure sectors, future research is required to develop sector-specific analyses and policy adjustments aligned with the distinct priorities of relevant ministries and local governments.

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INTRODUCTION

Over the past decade, Public–Private Partnerships (PPPs) have gained prominence as an alternative mechanism for delivering large-scale infrastructure, particularly in contexts characterised by fiscal constraints and growing sustainability demands (Yescombe & Farquharson, 2018). The PPP model is widely recognised for its capacity to support complex infrastructure projects (Fleta-Asín & Muñoz, 2023; Sunandar et al., 2025b), enhance efficiency (Cheng et al., 2023), allocate risks more effectively (Kristiana & Sunandar, 2020; Sunandar et al., 2024), and promote value for money (Fathi & Shrestha, 2023; Sunandar et al., 2025d), while increasingly aligning with Environmental, Social, and Governance (ESG) principles (Kharlamov, 2023). Considering these advantages, Indonesia has actively adopted PPPs as a strategic instrument to accelerate infrastructure development and sustain long-term economic growth. For the 2020–2024 period, national infrastructure investment requirements were estimated at Rp 6,445 trillion (Indonesian Rupiah/Rp), highlighting the critical role of private sector participation in meeting public infrastructure needs (Sunandar & Indiyati, 2023).

In parallel with the expansion of conventional PPPs, Indonesia has begun to explore Sharia-compliant PPP models as part of a broader strategy to mobilise Islamic finance for infrastructure development. Demand for Sharia-based PPPs has emerged not only at the central government level, including the Ministry of Transportation and the Ministry of Public Works, but also across several regional governments such as Aceh, West Sumatra, South Sumatra, North Maluku, West Nusa Tenggara, and Gorontalo (KNEKS et al., 2024; Sunandar et al., 2025a). This development reflects Indonesia's intention to attract Sharia-sensitive foreign capital, particularly from Gulf Cooperation Council countries, by offering infrastructure investment instruments that comply with Islamic financial principles. The global growth of Islamic financial assets, projected to reach USD 5.96 trillion by 2025, further underscores the strategic relevance of Sharia PPPs as a viable financing modality for national infrastructure programmes (KNEKS & IIGF, 2020; KNEKS et al., 2024).

To support this agenda, the National Committee for Islamic Economy and Finance (Komite Nasional Ekonomi dan Keuangan Syariah, KNEKS), in collaboration with the Indonesia Infrastructure Guarantee Fund (IIGF) and the Indonesian Ulema Council (Majelis Ulama Indonesia, MUI), issued a concept note in 2019 and implementation guidance in 2024 on Sharia-compliant PPPs (KNEKS & IIGF, 2020; KNEKS et al., 2024). These documents represent a significant institutional milestone by outlining the foundational principles, contractual structures, and financing arrangements required to operationalise Sharia PPPs in Indonesia. However, existing regulatory guidance remains largely concentrated on the planning and financing stages, with limited attention given to the post-award operational phase of PPP projects.

The operational phase constitutes the longest and most consequential stage of the PPP lifecycle, during which infrastructure assets are delivered, operated, and maintained, and where continuous interaction with users and local communities occurs (Ministry of National Development Plan, 2023). From a Sharia perspective, this phase is particularly critical, as compliance is not limited to contract formation or financing structures but must be sustained throughout project implementation and service delivery (Puspitasari & Handayani, 2020; Muhammad et al., 2021; Muslihun, 2023). Inadequate attention to Sharia compliance during operations undermining the ethical foundations of Islamic finance, weakening investor confidence, and compromising the credibility of Sharia PPP schemes.

Despite its practical significance, scholarly research on Sharia PPPs has predominantly focused on macro-level determinants and early project stages. Studies on Islamic finance mobilisation for PPP infrastructure in Indonesia have emphasised institutional readiness, regulatory support, and financial instruments (Imaduddin & Kassim, 2025), while recent conceptual works have proposed preliminary frameworks for integrating Sharia compliance into PPPs (Sunandar et al., 2025a) and embedding Maqasid

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Sharia principles at the planning stage (Sunandar et al., 2025c). Although these contributions provide valuable insights, they largely conceptualise Sharia compliance as a front-end consideration and offer limited analytical engagement with how Sharia principles can be operationalised, monitored, and governed during the post-award phase.

This gap reveals a critical theoretical and practical shortcoming in the existing literature. Current Sharia PPP studies have yet to sufficiently address how Sharia compliance functions as a dynamic governance mechanism across the full PPP lifecycle, particularly during long-term operations characterised by performance management, risk realisation, revenue generation, and stakeholder engagement. Consequently, there remains an unresolved question as to how Sharia principles can be systematically translated into operational controls, institutional arrangements, and compliance mechanisms that are compatible with conventional PPP governance structures.

Addressing this limitation, this study advances the literature by developing an analytically grounded framework for integrating Sharia compliance into the operational phase of PPPs in Indonesia. Drawing on Sharia governance theory and PPP lifecycle analysis, the paper moves beyond descriptive accounts to examine how Sharia principles can be embedded within post-award contractual management, operational decision-making, and performance monitoring. By doing so, the study provides novel insights into the role of Sharia compliance as an ongoing governance function rather than a static contractual condition.

This contribution is particularly significant for worldwide, especially in the Indonesian context, where Sharia PPPs are increasingly promoted as part of the national sustainable infrastructure agenda but remain institutionally underdeveloped at the operational level. A clearer understanding of operational Sharia compliance is essential for aligning Islamic financial requirements with infrastructure performance objectives and for strengthening investor confidence in Sharia-based PPP arrangements. The remainder of this paper is structured as follows. Section 2 reviews the relevant literature on PPP governance and Sharia compliance. Section 3 outlines the research methodology. Section 4 presents the empirical findings. Section 5 discusses the policy and practical implications for stakeholders involved in Sharia-compliant PPPs in Indonesia.

LITERATURE REVIEW

PPPs in Indonesia: The Operational Phase

PPPs have emerged as a key strategy for addressing Indonesia's substantial infrastructure financing gap, which has persisted due to limited fiscal capacity and increasing infrastructure needs in sectors such as transportation, energy, and water resources (Yescombe & Farquharson, 2018; Sunandar et al., 2025a). The Government of Indonesia began actively promoting PPP frameworks with the issuance of Presidential Regulation Number 38 of 2015 on PPPs in Infrastructure Provision, which clarified institutional roles, risk allocation mechanisms, and project preparation procedures (Sunandar & Indiyati, 2023). Building on this regulatory foundation, Indonesia has sought to attract private investment and enhance efficiency in infrastructure delivery.

Indonesia implements PPPs through a structured project cycle comprising the planning, preparation, transaction, construction, and management phases (Regulation of Presidential Number 38, 2015; Ministry of National Development Plan, 2023). The operational management phase encompasses several critical activities. First, during managerial preparation, the implementing business entity organises the operational structures required for PPP delivery. Second, monitoring the implementation of the PPP agreement

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involves supervision of construction activities and verification of service performance. For projects applying availability payment mechanisms, the implementing entity is required to report service availability achievements to the Government Contracting Agency. Finally, concession termination requires detailed preparation for asset transfer, including specifications regarding asset condition and functionality, procedures for handover, assurances that assets are free from encumbrances, and guarantees against third-party claims. These provisions are designed to safeguard public sector interests in accordance with prevailing statutory regulations (Regulation of Presidential Number 38, 2015; Ministry of National Development Plan, 2023).

Sharia Compliance in the Operational Phase

Sharia compliance has become an increasingly prominent area of research over the past decade, reflecting its relevance to governance, accountability, and ethical business conduct. Prior studies have demonstrated its contribution to enhanced environmental, social, and governance performance (Qoyum et al., 2022), improved financial reporting quality (Can, 2020), and stronger corporate governance structures (Triyanto, 2022). Sharia compliance has also been associated with higher profitability in Islamic banking (Hamsyi, 2019), improved service delivery (Vegirawati et al., 2019), and sustained investor confidence (Hambali & Adhariani, 2022).

In operational contexts, Sharia compliance extends beyond the provision of halal products and services to encompass daily managerial practices, employee conduct, and organisational culture. Operational guidelines include expectations regarding ethical behaviour, modest dress codes, and respectful service provision. Although neither the Qur'an nor the Sunnah prescribes explicit architectural requirements, Sharia-based design principles have been derived through interpretation and practice. These principles address elements such as spatial configuration, privacy protection, interior design, facility arrangement, material selection, and waste reduction, reflecting broader Sharia values of modesty, dignity, and frugality (Vegirawati et al., 2019; Aris et al., 2020).

The Sharia Compliance Indicator (SCI) is widely applied as an evaluative framework for monitoring adherence to Sharia principles. The SCI comprises three core dimensions: disclosure related to the Sharia Supervisory Board, basic institutional information, and financial reporting. The Sharia Supervisory Board plays a central role in providing guidance on Sharia matters, supervising compliance, liaising with regulators, and reporting on operational performance (Puspitasari & Handayani, 2020; Muhammad et al., 2021; Muslihun, 2023). In addition, the SCI requires transparent disclosure of organisational objectives, governance structures, and financial practices, including the identification of halal and non-halal income, zakat and sadaqah funds, and value-added reporting.

More broadly, qualitative assessments of Sharia-compliant institutions emphasise the alignment of contractual arrangements, reporting practices, organisational culture, and funding sources with Sharia principles (Alnamlah et al., 2022). These criteria highlight the importance of comprehensive operational oversight, continuous supervision, and ethical governance mechanisms in sustaining Sharia compliance over the life cycle of long-term projects.

Taken together, the literature underscores the centrality of Sharia guiding principles in shaping operational practices, the pivotal role of the SCI as a systematic monitoring tool, and the relevance of established assessment criteria in evaluating institutional adherence to Sharia values. However, while these frameworks have been widely applied in financial and organisational settings, their integration into the operational phase of infrastructure PPPs remains underexplored. This gap reinforces the need for empirical investigation into how Sharia principles are operationalised, monitored, and enforced within Sharia PPP arrangements, thereby providing a robust theoretical foundation for the present study.

RESEARCH METHODOLOGY

Research Design

This study adopted a qualitative research design to examine the complex and context-specific challenges and opportunities associated with the operational management of Sharia PPP infrastructure financing in Indonesia. A qualitative approach was deemed appropriate because the research sought to capture rich and nuanced insights from expert perspectives (Saunders et al., 2018; Creswell & Creswell, 2023; Saunders et al., 2023), which are essential for understanding the interaction between Sharia principles and the practical delivery of infrastructure under PPP schemes. The choice of this design is further justified by the emerging nature of Sharia PPPs in Indonesia, where empirical data remain limited, and the literature provides insufficient guidance on operational realities.

Selection Criteria and Saturation

Experts were selected through purposive sampling to ensure that experts possessed substantial knowledge and relevant experience (Saunders et al., 2023). The selection criteria required experts to be actively involved in business practices, governmental roles, or multilateral agencies and associations engaged in infrastructure policy, project implementation, or Sharia finance. This strategy was intended to capture a wide range of perspectives across key stakeholder groups that directly influence or are affected by the development of Sharia PPPs in Indonesia. A total of 22 experts were interviewed (see Table 1), with data saturation confirmed when no new themes emerged after the 20th interview. Two (2) additional interviews were conducted to validate the consistency of findings and strengthen the robustness of the analysis. This approach aligns with established qualitative research guidelines, which emphasise that data saturation rather than sample size determines the adequacy of expert interviews. Achieving saturation enhances the credibility and depth of the study by providing a comprehensive understanding of stakeholder perspectives (Saunders et al., 2018).

Table 1. Experts Involved

Expert (A)	Organisation	Position	Level of Education
Government Agencies and Regulators			
A-01	Ministry of Public Works	Director	Doctoral
A-02	Ministry of Investment	Director	Master
A-03	Nusantara Capital City Authority	Director	Master
A-04	National Committee for Islamic Economy and Finance	Acting Director	Master
A-05	Ministry of National Development Planning	Director	Master
A-06	Ministry of Finance	Deputy Director	Bachelor
A-07	Ministry of Public Works	Deputy Director	Master
A-08	Ministry of Transportation	Deputy Director	Master
A-09	Ministry of Transportation	Deputy Director	Master
A-10	National Public Procurement Agency	Deputy Director	Master
A-11	National Public Procurement Agency	Deputy Director	Master

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Expert (A)	Organisation	Position	Level of Education
Private Sector and Financial Institutions			
A-12	Bank Syariah Indonesia (BSI)	Independent Commissioner	Doctoral
A-13	PT. SMI (Conventional and Sharia Infrastructure Financier)	Director	Master
A-14	PT. Jasa Marga (Toll Road Investor)	Director	Master
A-15	PwC/PricewaterhouseCoopers (PPP Transaction Consultant)	Partner	Master
A-16	PT. PP (PPP Investment and Contractor)	Senior Vice President	Master
A-17	PT PP (PPP Investment and Contractor)	Managerial	Master
A-18	Bank Syariah Indonesia (BSI)	Managerial	Master
A-19	Bank Syariah Indonesia (BSI)	Managerial	Master
Professional Associations			
A-20	the Indonesian Ulema Council (MUI)	National Sharia Council	Doctoral
A-22	Association of PPP Indonesia Experts	Supervisory Board	Master
Multilateral and Development Agencies			
A-21	Asian Infrastructure Investment Bank (AIIB)	Vice President	Doctoral

Source: Authors (2025)

Data Collection

Data were collected through semi-structured interviews, which provided consistency in the core questions while allowing flexibility to explore emerging themes (Jayasuriya et al., 2024; Khan & Khan, 2024; Sunandar et al., 2026a). The interview protocol was developed based on a comprehensive review of the relevant literature and refined through pilot testing with eight (8) experts. Open-ended questions were used to elicit detailed responses on regulatory frameworks, institutional dynamics, operational challenges, and opportunities within the Sharia PPP context. Interviews were conducted either in person or via secure video conferencing platforms, depending on expert availability and preference. Each session lasted between 45 and 60 minutes and was transcribed verbatim. The transcripts were subsequently returned to experts for member checking to ensure accuracy.

Data Analysis

The transcribed interview data were analysed using thematic analysis, following the approach outlined by Saldana (2021). Codes were systematically organised into potential themes that reflected both the challenges and opportunities (Sunandar et al., 2026b). These themes were iteratively reviewed and refined through cross-comparisons of stakeholder perspectives to ensure accurate representation of the data and the generation of coherent findings.

RESULTS AND ANALYSIS

This section examines the comprehensive operational management phase of Sharia PPPs. Four (4) major themes are identified: (i) dissemination of Sharia PPP operations, (ii) PPP management preparation, (iii) monitoring the implementation of the PPP agreement, and (iv) concession termination. Each theme is supported by several categories that illustrate the institutional and operational mechanisms for ensuring compliance with Sharia principles. An overview of the themes, categories, and descriptions is provided in Table 2.

Table 2. Overview of the Themes

Theme	Category	Description
Dissemination of Sharia PPP Operations	Awareness campaigns and training	Provision of information and capacity-building initiatives for stakeholders to strengthen understanding of Sharia principles in PPP arrangements.
PPP Management Preparation	Sharia Compliance Indicators	Development of measurable indicators for assessing and monitoring adherence to Sharia principles.
	Sharia Compliance Monitoring Unit	Establishment of an institutional body to oversee compliance across the entire project lifecycle.
	GCA PPP Payment Unit	Creation of government payment mechanisms structured in accordance with Sharia principles.
Monitoring the Implementation of the PPP Agreement	Design and construction compliance	Assurance that project design and construction processes meet ethical requirements and conform to Sharia standards.
	Operational services	Oversight of service delivery to ensure continuous compliance with Sharia principles during operations.
	Transfer of ownership	Regulation of asset transfer and ownership arrangements within the concession period in line with Sharia requirements.
Concession Termination	Asset return and muwa'dah	Transparent documentation and ethical asset return, guided by the principle of muwa'dah.

Source: Authors (2025)

Theme 1: Dissemination of Sharia PPP Operations

The initial step in operationalising Sharia PPPs is dissemination and awareness building. This stage ensures that all stakeholders, including government agencies, private sector actors, and the wider community, are informed about the ethical, financial, and operational implications of Sharia compliance. Without this shared understanding, the legitimacy and effectiveness of Sharia PPPs risk being undermined. As one expert observed, "the first issue is socialisation" (A-02), underscoring that awareness raising serves as the cornerstone of early implementation. Dissemination must extend beyond theoretical explanations and provide practical mechanisms for embedding Sharia principles into infrastructure partnerships. This involves clarifying operational procedures through workshops, training programmes, and targeted campaigns that translate abstract concepts, such as the prohibition of interest and risk-sharing, into daily practices. As one expert emphasised, there is a need for "a more specific mechanism or way to explain to the public how the implementation of this Sharia-based PPP works, from start to finish, even in the operational phase and for the employees" (A-10). By promoting transparency and trust, dissemination enhances legitimacy, aligns diverse interests, and establishes the foundation for the sustainable long-term implementation of Sharia PPPs.

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Theme 2: PPP Management Preparation

Sharia Compliance Indicators (SCI)

One (1) of the essential elements of management preparation is the development of SCI. These indicators provide measurable benchmarks to evaluate whether operational and financial practices remain aligned with Sharia requirements. Experts emphasised that SCI ensures compliance from the earliest stage of management preparation and sustains adherence throughout the entire project cycle. As one expert noted, "for Sharia-based PPP projects, the implementation of SCI is essential to ensure compliance with Sharia principles from the beginning of the management preparation process and the sustainability of Sharia compliance throughout the project cycle" (A-01). Another expert similarly highlighted that SCI could be effectively implemented by "maintaining transparency in basic information and preparing Sharia-compliant financial reports to guarantee adherence to Sharia principles throughout the management process" (A-17). These perspectives demonstrate that SCI not only provides technical guidance but also establishes a framework of transparency and accountability that safeguards Sharia compliance over time. Ultimately, SCI functions as a safeguard against procedural lapses and ethical compromises, thereby reinforcing the legitimacy and sustainability of Sharia-based PPPs.

Sharia Compliance Monitoring Unit (SMU)

Experts emphasised the establishment of an SMU as a structural safeguard to oversee and evaluate compliance throughout the project lifecycle. Such a body is regarded as indispensable for ensuring that PPP projects remain aligned with Sharia principles beyond the contractual stage. As one expert observed, "if we are committed to implementing Sharia principles, there must be oversighted to ensure this. It requires adequate knowledge to confirm that the PPP complies with Sharia principles" (A-14). This suggests that the key issue is not whether supervisory bodies are necessary, but how they are empowered to provide meaningful oversight that extends beyond symbolic recognition. One expert explained that "leaving the boundaries that have been set in the initial PPP document, for example, in the operational management process right, over the 20-year period, it will be stated there that no activities will violate the Sharia principles" (A-20). By embedding Sharia compliance into documentation as well as oversight practices, the SMU strengthens the governance architecture of PPPs and ensures accountability over the long term.

Government Contracting Agency (GCA) PPP Payment Unit

A further component of management preparation is the establishment of a dedicated GCA payment unit to administer availability payments. Experts emphasised that availability payments, if poorly managed, may become sources of dispute between the government and private partners. As one expert observed, "a clear payment mechanism is needed so that the government side fulfils its obligation on time, and the private side also carries out the agreed services in accordance with Sharia principles" (A-08). This highlights the necessity of a transparent and accountable payment system that safeguards the interests of both parties while upholding Sharia financial ethics. The structuring of the GCA payment unit is also intended to eliminate practices that conflict with Sharia requirements, particularly those linked to interest-based transactions. Another expert stressed that the system must be designed to "eliminate interest-based elements and maintain trust between the contracting parties" (A-13). This perspective underscores the ethical dimension of Sharia compliance, where payment mechanisms are not only financial arrangements but also instruments of trust, accountability, and legitimacy. By institutionalising a specialised unit to manage payments, PPP projects can reduce the risk of disputes, enhance transparency, and demonstrate a stronger commitment to Sharia-based governance.

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Theme 3: Monitoring the Implementation of the PPP Agreement

Design and Construction Compliance

The design and construction phases play a foundational role in embedding Sharia principles into PPP projects. Experts emphasised that ethical practices, such as environmentally sustainable approaches, can be seamlessly aligned with Sharia compliance. One (1) expert explained, "For example, let us say we implement green construction in Jasa Marga's business. Jasa Marga expects that these toll roads will adhere to green principles by using environmentally friendly materials, being considerate of the local environment, engaging with local communities, and utilising energy-efficient practices" (A-14). This perspective illustrates that compliance with Sharia principles can coexist with contemporary sustainability practices, thereby reinforcing the ethical dimension of project design and construction. In addition, experts highlighted that Sharia compliance should be integrated even before the PPP agreement is finalised. One expert stressed, "this implementation can be regulated not only at the time of executing the PPP agreement but also from the preparation of the pre-study… when the PPP agreement is signed and the implementation management begins, they will already be aware from the start" (A-22). By ensuring that stakeholders are guided by a clear ethical framework from the outset, potential conflicts can be prevented, risks of non-compliance minimised, and the design and construction phases consistently aligned with Sharia values.

Operational Services

Operational services constitute the long-term dimension of PPP implementation and require continuous monitoring to ensure adherence to Sharia principles. As one expert stated, "During the control and management phase of implementation, throughout the concession period, it can be mandated that the infrastructure meets certain standards. For instance, if employees are required to wear Sharia-compliant attire, it is just a matter of regulation" (A-14). This perspective demonstrates that operational compliance is achievable when supported by clear legislation and regulations that mandate ethical standards as part of the service delivery process. At the same time, experts highlighted that the risks of non-compliance vary across sectors. One (1) expert explained that while public services such as street lighting are "relatively safe" because they are not associated with prohibited activities, more complex services, such as those at airports, require closer scrutiny. As noted, "airports are very likely to engage in businesses outside their core services, like aircraft services, and there is also pressure from tenants" (A-20). This observation underscores the necessity of mapping sector-specific risks and incorporating tailored Sharia-compliant clauses into contracts. Such measures ensure that even in complex operational environments, PPP services remain consistent with Sharia values.

Transfer of Ownership of Special Purpose Vehicles (SPVs)

The transfer of ownership of SPVs during the concession period presents complex challenges in sustaining Sharia compliance. Such transactions are common in PPP projects, yet they must be carefully structured to avoid resembling prohibited practices. One expert observed, "Not to mention, if it gets sold halfway through, right? That brings up the issue of innovation and substitution. So, what does Sharia say about that? If I buy that, it's like buying debt, right? Or buying a debt… coverage that also becomes a concern" (A-20). This perspective highlights the risk that ownership transfers may unintentionally replicate debt trading, which directly contravenes Sharia principles. To mitigate such risks, PPP agreements must explicitly regulate the terms and conditions of ownership transfers to prevent ambiguity.

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Theme 4: Concession Termination

The concession termination stage represents a pivotal phase in the lifecycle of Sharia-compliant PPP projects, as it formalises the conclusion of contractual obligations between the SPV and the GCA. This stage requires full transparency in documenting asset ownership and ensuring the ethical transfer of responsibilities. Experts emphasised that such transparency must be grounded in the Sharia concept of muwa'dah (promise or commitment), which ensures that all obligations are fulfilled equitably. As one expert explained, the process involves "a promise from the SPV to the GCA to return the GCA-owned assets that were lent for use" (A-01). Another expert reinforced this view, stating that the entire process, "until the final handover to the GCA, must truly follow Sharia principles" (A-06). These perspectives underscore that concession termination is not merely administrative but also deeply ethical, requiring strict adherence to Sharia governance to safeguard trust and accountability between the contracting parties. The practical application of this principle can be illustrated through toll road projects, which typically follow a Build-Operate-Transfer model. One expert observed that "for toll roads, this scheme follows the BOT model, meaning it is built and operated by the business entity, and once the concession is over, it is transferred back to the government" (A-14). However, no precedent yet exists in Indonesia, as the earliest toll road concessions will conclude only in the coming decades. This novelty highlights the importance of preparing clear procedures and documentation in advance to ensure that future handovers are conducted transparently, equitably, and in full compliance with Sharia principles.

Discussion and Framework

The proposed framework advances current understanding of Sharia PPP governance by explicitly situating the empirical findings within both the broader PPP governance literature and the emerging body of work on Sharia compliant infrastructure financing. While prior studies have established the importance of institutional arrangements, risk allocation, and lifecycle structuring in PPP performance (APMG, 2016; Ojiako et al., 2025; Yescombe & Farquharson, 2018), they have largely treated compliance as a contractual or regulatory condition defined at the front end of the project cycle. Similarly, existing Sharia PPP scholarship has focused predominantly on financial structuring, institutional readiness, and the integration of Maqasid Sharia at the planning stage (Imaduddin & Kassim, 2025; Sunandar et al., 2025a; Sunandar et al., 2025c). The findings of this study extend these perspectives by demonstrating that Sharia compliance operates as a continuous governance function that must be embedded within the operational phase through concrete institutional mechanisms and monitoring processes.

From a PPP governance perspective, the framework reinforces the importance of the operational phase as the locus of value realisation, risk materialisation, and stakeholder interaction (Ministry of National Development Plan, 2023; Regulation of Presidential Number 38, 2015). Conventional PPP literature emphasises performance monitoring, contract management, and accountability mechanisms during this phase (Kuru & Artan, 2024; Jin et al., 2025). However, it does not sufficiently address the ethical or religious dimensions of governance that are central to Sharia compliant systems. The present framework responds to this limitation by integrating Sharia principles into the operational governance architecture, thereby extending PPP theory towards a more normative and value-based model of infrastructure delivery.

The first domain, dissemination, can be interpreted through the lens of institutional theory, particularly the role of normative and cognitive legitimacy in shaping organisational behaviour. The empirical findings indicate that awareness building is not merely an ancillary activity but a foundational governance mechanism that enables stakeholders to internalise Sharia principles. This supports earlier observations that institutional alignment and stakeholder understanding are critical for the successful adoption of Islamic finance instruments (KNEKS & IIGF, 2020; KNEKS et al., 2024). By embedding dissemination within the operational phase, the framework challenges the conventional assumption that stakeholder alignment is achieved solely during project preparation. Instead, it demonstrates that legitimacy must be continuously reinforced throughout the lifecycle of the PPP, particularly in contexts where Sharia principles may not be uniformly understood across actors.

The second domain, management preparation, provides a direct operationalisation of Sharia governance concepts within the PPP structure. The incorporation of the SCI extends its traditional application from financial institutions to infrastructure projects, thereby addressing the gap identified in the literature regarding the lack of measurable compliance tools in non-banking (Puspitasari & Handayani, 2020; Muhammad et al., 2021; Muslihun, 2023). Furthermore, the establishment of a SMU reflects the broader governance literature on the role of supervisory bodies in ensuring accountability and transparency (Triyanto, 2022). This finding is particularly significant as it demonstrates that Sharia oversight cannot be limited to advisory functions but must be institutionalised within the operational governance structure of PPPs. In addition, the creation of a dedicated GCA payment unit aligns with PPP scholarship on the importance of reliable payment mechanisms in reducing contractual disputes in availability payment schemes (Nguyen & Sun, 2021; Sunandar & Indiyati, 2023). The empirical evidence shows that when these mechanisms are structured in accordance with Sharia principles, they also serve as instruments for reinforcing ethical compliance and trust between contracting parties.

The third domain, monitoring the implementation of the PPP agreement, contributes to the literature by introducing a layered approach to operational compliance. Existing PPP studies have emphasised technical performance monitoring and service delivery standards (APMG, 2016), yet they have not systematically incorporated Sharia compliance into these processes. The findings demonstrate that Sharia compliance must be embedded across multiple operational layers, including design and construction, service delivery, and ownership arrangements. The issue of SPV ownership transfer further enriches the theoretical discourse by highlighting the intersection between PPP financial structures and Sharia prohibitions on debt trading. While PPP literature acknowledges the prevalence of equity transfers as part of project financing strategies (Bao et al., 2022; Ministry of National Development Plan, 2023), it has not examined these practices from a Sharia perspective. The findings reveal that, without explicit contractual safeguards, such transactions may conflict with fundamental Sharia principles, thereby introducing a previously underexplored dimension of financial risk. This insight contributes to both PPP and Islamic finance literature by emphasising the need for integrated contractual and ethical governance mechanisms.

The final domain, concession termination, reinforces the importance of end of lifecycle governance, which is often underrepresented in both PPP and Sharia studies. Conventional PPP frameworks treat asset transfer primarily as a technical and administrative process (APMG, 2016; Ministry of National Development Plan, 2023). In contrast, the present study conceptualises concession termination as an ethical obligation governed by the principle of muwa'dah. This interpretation extends Sharia governance theory by applying its principles to long-term infrastructure contracts, thereby ensuring that accountability and trust are maintained until the final stage of the project lifecycle.

Overall, the framework offers a comprehensive integration of governance mechanisms, compliance instruments, and ethical principles across the operational phase of PPPs. It responds directly to the gap identified in earlier studies by demonstrating how Sharia compliance can be translated from abstract principles into concrete institutional practices. By bridging PPP governance theory and Sharia compliance literature, the study provides a novel analytical lens that redefines compliance as a dynamic, continuous, and multilayered governance function. This contribution is particularly relevant for Indonesia and other jurisdictions seeking to align Sharia principles with large scale infrastructure development, as it offers a structured and operationally grounded framework for sustaining Sharia compliance throughout the lifecycle of PPP projects. Collectively, the framework provides a comprehensive and systematic representation of Sharia PPP operational management, as illustrated in Figure 1.

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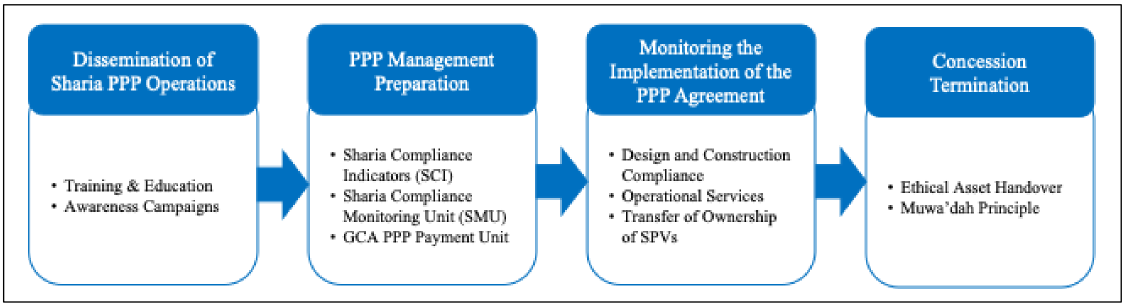

Fig. 1. The Framework for Sharia PPP Operational Management

Source: Authors (2025)

CONCLUSION

This study has developed a conceptual framework for infrastructure financing within Sharia PPPs during the operational management phase in Indonesia. Although critical, the operational phase has often been overlooked in both policy design and academic research. By addressing this gap, the study emphasises the importance of sustaining compliance, efficiency, and ethical integrity throughout the concession period. The findings highlight the need for continuous community engagement, effective management practices, and strict adherence to Sharia principles. Four interconnected themes were identified: dissemination of Sharia PPP operations, management preparation, monitoring the implementation of the PPP agreement, and concession termination. Together, these themes provide a holistic perspective on operational governance in Sharia PPPs.

The research advances both theoretical and practical understanding by demonstrating how operational mechanisms can be aligned with Sharia principles to enhance transparency, accountability, and ethical compliance. It offers guidance for policymakers, regulators, and practitioners seeking to integrate Sharia values into PPP governance. Future research should further refine this framework through sector-specific investigations, while government agencies at national and regional levels are encouraged to harmonise policies, reduce institutional fragmentation, and strengthen operational capacity. Such efforts would enable the systematic integration of Sharia principles into PPP governance and foster sustainable infrastructure development consistent with Sharia investment principles.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Ali Sunandar, PhD carried out the research, wrote and revised the article. Assoc Prof. Saipol Bari Abd Karim and Assoc Prof. Umi Kalsum Zolkafli @Zulkifly supervised research progress, review, and approved the article submission.

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