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A Maqashid Shariah-Grounded Cloud-Based Accounting Information System Framework for Zakat Institutions in Indonesia

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Abstract

Zakat institutions in Indonesia remain governance deficiencies characterized by fragmented financial workflows, limited accountability infrastructure, and an absence of digital governance tools across institutional scales. Prior studies have demonstrated the cloud-based accounting information system (CBAIS) within single zakat institution. Furthermore, no study has systematically constructed framework of a Maqashid *Shari'ah*-grounded CBAIS that replicable across diverse zakat institutions context. This study addresses that gap by developing a CBAIS framework for zakat institutions in Indonesia with Maqashid *Shari'ah* as the foundational design criteria. The five Maqashid *Shari'ah* objectives act as constitutive principles embedded at each design detail. A CBAIS was developed and validated at a municipal-level zakat institution in Central Java, that act as empirical anchor for framework construction. System usability was assessed via SUS that yielding a composite mean of 64.17 (Marginal). User experience was assessed using UEQ, then produce an overall mean of +1.574 (Oustanding). Therefore, from these findings, a replicable framework is derived that align with Maqashid *Shari'ah* objectives for adoption by other zakat institutions. This study contributes a theoretically and empirically validated digital governance tool to advancing both the operationalization of Maqashid *Shari'ah* in Islamic fintech design and the broader agenda of digital transformation in Islamic philanthropy governance.

Keywords: *Cloud-Based Accounting Information System, Islamic Philanthropy Governance, Maqashid Shariah, Zakat Institutions.*

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I. Introduction

Indonesia, as one of the countries with the largest Muslim populations in the world, is estimated to have a potential zakat revenue of IDR 327 trilion per year (BAZNAS, 2024). Despite the impressive scale of this figure, its realization continues to face obstacles, as actual collection falls short of what is projected on worksheet. The reality is actually driven by weaknesses in the governance of zakat institutions, such as fragmented financial management, inadequate accountability infrastructure, and the absence of standardized digital tools capable of supporting institutional operations (BAZNAS, 2025). Consequently, a triangle of trust deficit has emerged between zakat institutions, *muzakki*, and *mustahiq* (Afifah et al., 2025). These issues have heighneted and expanded the paradox and the broader perspective on zakat institutions in Indonesia. This is also supported by a modern paradigm regarding zakat that has evolved; it is no longer as a religious obligation for Muslims, but has become one of the mechanisms for economic redistributive justice for society (Hayati et al., 2023; Mukhlishin et al., 2025).

Solution that capable for addressing those challenges faced by zakat institutions is to proposed use of a standardized cloud-based accounting information system grounded in normative principles (Maqashid *Shari'a*) (Nashirudin et al., 2025). Amilahaq et al. (2021), Beik et al. (2021), Hadi et al. (2024), and Rahman et al. (2025) state that the utilization of a zakat management system can enhance financial transparency, real-time auditing, and operational integration across all institutional units. Therefore, the use of a cloud-based accounting information system is a step for zakat institutions to restore the trust of *muzakki* and increase added value of zakat institutions.

This is supported by zakat scholars and experts have increasingly argued that the integration of cloud-based accounting information system in zakat institutions hase been widely theorized as a structural remedy to such governance failures (Zakiy et al., 2025; Zakiy & Falikhatun, 2024). Those statement and argument also has begun empirically substantiated to addresing the claims. Study by Hadi et al. (2024), Muharromi et al. (2025), and Utama et al. (2025) demonstrated the deployment of a cloud-based accounting information system at a single municipal zakat institution to measure the improvement of financial reporting integration and institutional accountability. These system also grounded in Maqashid *Shari'ah* principles and developed through the ADDIE design model. Therefore, that study established the empirical viability of digital transformation as a governance instrument within the zakat institution.

On the other hand, yet the transtition from empirical proof-of-concept to scalable, remains largely unaddressed in the extant literature. This is supported that existing studies on digital transformation in zakat governance are predominantly institution-focused, offering system deployments anchored to single context, no articulating the conditions of institution, architectural requirements, or theoretical design principles necessary for replication across comparable institutions (Amilahaq et al., 2021; Anami, 2024; Daud et al., 2025; Hadi et al., 2024; Mongkito & Samdin, 2025; Mubarrak et al., 2023; Mukhlishin et al., 2025; Mutmainah, 2023; Nashirudin et al., 2025; Rusydiana et al., 2025; Siregar et al., 2024).

Those limitation that has been faced by existing scholars in digital transformation of zakat institutions. If there is no a replicable framework among studies, the demonstrated benefits of cloud-based accounting information systems adoption remain episodically distributed rather than structurally embedded within Indonesia's zakat governance ecosystem. It's conditions is supported by three interrelated gaps to sustain this problem. First, Maqashid *Shari'ah* has been deployed as an evaluative lens to assess system outcomes, rather than to constitute system design. Second, no study has systematically operationalized the ADDIE design model as a transferable architectural methodology for accountaing information system across multiple zakat institutions. Third, the literature

offers no articulation of the institutional requirements, such as human capital readiness, infrastructural treholds, and regulatory conditions.

Based on that issues, this study addresses the gaps by developing and validating a Maqashid *Shari'ah*-grounded cloud-based accounting information system framework for replication across zakat institutions in Indonesia. The developed framework in this study integrates two theoretical pillars as a novelty. First, ADDIE design model considered as the development architectural guiding of each stage in system construction. Second, Maqashid *Shari'ah* repositioned as a constitutive design criteria, where the five Maqashid *Shari'ah* objectives (*hifzh al-din*, *hifzh al-nafs*, *hifzh al-aql*, *hifzh al-nasl*, *hifzh al-mal*) are embedded as normative design standards at each ADDIE stage. The framework empirically, is resulting 21 integrated components anchored through the development and deployment in Central Java, Indonesia as the site of system validation and as a basis for replicability conditions. Furthermore, this study has two contributions. First, repositioning Maqashid *Shari'ah* as constitutive design criteria in the context of Islamic financial technology. Second, produces a replicable governance framework with institutional requirements and architectural specifications that aims toward digital governance adoption in zakat institutions. The contributions is extending the scholarly beyond post-hoc evaluation toward normative system design architectural. In doing so, this study moves beyond single-site deployment and toward the systemic institutionalization of digital accountability within Indonesia's zakat governance architecture.

II. Literature Review

2.1. Zakat Governance

Zakat, as the third pillars of Islam (Nugraha & Wanto, 2025). Zakat constitutes not only as a religious obligation, it represents as a mechanisms for economic redistributive justice for society (Hayati et al., 2023; Mukhlishin et al., 2025). Zakat designed in *Al-Qur'an* and Hadith systematically to transfer resources from those of surplus to those of deficit within the Muslim community (Al-Farahidi, 2003). In Indonesia, institutionalization of zakat governance is mandate under Law No. 23 of 2011 on Zakat Management, which centralizes collection and distribution authority under the National *Amil* Zakat Board (BAZNAS). Not centralized board as a monopoly mechanism, BAZNAS also acommodating a network of licensed *Amil* Zakat Institutions (LAZ) operating across provincial and municipal levels in Indonesia. Despite the regulatory structure, both BAZNAS and LAZ, the governance of zakat institutions in Indonesia remains burdened by fragmented financial management, weak accountability, and erosion of public trust within the *muzakki-mustahiq* relationship (Afifah et al., 2025)

2.2. Digital Transformation in Zakat Institutions

BAZNAS (2024) estimates Indonesia's annual zakat potential at IDR 327 trilion, yet actual collection figures is only IDR 9 trilion. These condition represent a marginal fraction. It supported not solely to low compliance rates among *muzakki*, but significantly to institutional opacity, limited reporting standardization, and inadequate digital infrastructure at the operational institution (Afifah et al., 2025). Furthermore, these governance failures are systemic. It's reflect a structural misalignment between the scale of institutional mandate and the maturity of the administrative apparatus deployed to fulfill it (Nashirudin et al., 2025). In the context to address the issue, digital transformation has been theorized as a structural answer. Digital transformation is defined as the integration of digital technologies into institutional processes in ways that alter how value is created (Utama et al., 2025; Zhang, 2025). According to zakat institutions context, digital transformation encompasses the deployment of cloud-based platforms, automated financial reporting systems, and integrated data architectures to enhancing operational value.

2.3. Maqashid Shariah Objectives

Maqashid *Shari'ah*, classically formulated by Al-Syatibi in *Al-Muwafaqat* and systematized across centuries of Islamic jurisprudential scholarship (Alfaatih et al., 2024; Ma'mun, 2020). Maqashid *Shari'ah* encompasses five foundational objectives, such as the preservation of religion (*hifzh al-din*), life (*hifzh al-nafs*), intellect (*hifzh al-aql*), lineage (*hifzh al-nasl*), and wealth (*hifzh al-mal*). Every objectives in Maqashid *Shari'ah* constituting an indispensable domain of human flourishing. In the context of Islamic governance, Maqashid *Shari'ah* considered as a obligated to protect and promote human welfare. The position of Maqashid *Shari'ah* in Islamic finance and accounting literature, has been deployed predominantly as an evaluative instrument of the outcomes (Afandi, 2023; Hadi et al., 2024; Izzati et al., 2024; Mahfud et al., 2020; Muharromi et al., 2025; Mukhlishin et al., 2025). This paradigm positioning the normative lens as a assessor whether institutional practices, financial products, or governance outcomes confirm to Islamic ethical standards. Either as an Islamic jurisprudential or assessor, the position of Maqashid *Shari'ah* has a fundamental limitation, including Maqashid *Shari'ah* objectives are engaged only after design decision that can rendering the incapable of constitutively shaping the architecture of the systems, institutions, or instrument being evaluated.

Furthermore, this study proposes a repositioning of Maqashid *Shari'ah* from evaluative lens (assessor) to guider of design criteria. This paradigm shift, rather than applying Maqashid *Shari'ah* objectives to assess a system that already built, the study embeds every objectives as normative design standards at the inception of system architecture. It allowing Maqashid *Shari'ah* to function as a perspective principle governing specific design decisions throughout the development process. In the context operationalized as design criteria within a cloud-based accounting information system, the Maqashid *Shari'ah* objectives are mapped as follows. First, *hifzh al-din* ensures the system supports orderly and *Shari'ah*-compliant zakat discharge. Second, *hifzh al-nafs* informs ergonomic interface design, cognitive load reduction, and system learnability. Third, *hifzh al-aql* guides user autonomy architecture and capacity-building integration. Fourth, *hifzh al-nasl* constitutes the design rationale for institutional sustainability features and scalable system architecture. Lastly, fifth, *hifzh al-mal* governs financial integrity mechanisms, including automated validation, audit traceability, and compliance reporting.

2.4. Cloud-Based Accounting Information System (CBAIS) as Governance Infrastructure

Accounting information system (AIS) is defined as an integrated structure of people, processes, data, and technology designed to collect, store, process, and communicate financial information in support of organizational decision-making, regulatory compliance, and accountability reporting (Hastuty Hs et al., 2023; Rashad Gahramanov, 2022; Renaldo et al., 2023). In the context of zakat institutions, AIS serves as a governance function through fund collection, allocation, and distribution that rendered transparent, auditable, and accountable. The migration of AIS to cloud-based infrastructure, represents a quality governance advancement for institutions that limited technical capacity. Cloud-based AIS deliver financial management capabilities through internet-based servers, eliminating the requirement for hardware investment while enabling real-time data accessibility across geographically distributed users. Study by Hadi et al. (2024), demonstrated that cloud-based financial system in zakat institutions produced significant improvements, such as organized distribution (Mahfud et al., 2020); operational cost reduction, streamline the administration process, minimizing human error (Muharromi et al., 2025); and increasing public donor trust (Mukhlishin et al., 2025).

2.5. ADDIE Model as Development Architecture

ADDIE is an acronym from the sequential stages of Analysis, Design, Development, Implementation, and Evaluation (Sugiyono, 2023). ADDIE originated the domain of instructional design (cognition) (Branson et al., 1975) and has since been adopted as a generalizable development framework across a wide range of applied research and system engineerig contexts (Mulyasari et al., 2023). Its enduring utility derives from the procedural clarity and iterative flexibility. Every stages in ADDIE, produces discrete outputs that inform subsequent stages, while the evaluative mechanism embedded throughout the cycle that enables continuous refinement rather than linear completion (Nurbaitti, 2025). In the context of information systems development, ADDIE has been increasingly adopted as an methodology for system design, particularly where the development process itself constitutes a scholarly contribution alongside the resulting artefact (Sugiyono, 2022).

Furthermore, ADDIE application to AIS development within zakat institution is produces five significant contributions as follows. First, the Analysis stage, enables systematic identification of governance gaps and user capability profiles. Second, the Design stage, provides blueprint within normative design criteria (Maqashid *Shari'ah*) can be operationally embedded. Third, the Development stage, it's translates design specification in blueprint into functional system components. Fourth, the Implementation stage, validates system functionality under authentic operational conditions. Lastly, fifth, the Evaluation stage, generates empirical performance data againts usability and governance standards. In this study, the integration of ADDIE and Maqashid *Shari'ah*, together constitute a development methodology in its procedural discipline and grounded in the context of Islamic normative orientation.

III. Methodology

3.1. Research Design

This study adopts a mixed development and framework construction research design, that using of Research and Development (R&D) methodology as systematized by Sugiyono (2022). The research design is characterized by two interdependent phases. First, a system development phase, in which a cloud-based AIS is constructed and empirically validated in municipal zakat institution level at Central Java, Indonesia. Second, a framework construction phase, in which the validated system's architectural, design decisions, and institutional conditions are abstracted and formalized into a transferable governance framework across multiple zakat institutions context. In the context of this research design, the Maqashid *Shari'ah*-grounded ADDIE framework will produces a system that demonstrably advances zakat governance quality, and the resulting framework is sufficiently articulated to enable adoption by zakat institutions in Indonesia.

3.2. ADDIE Stages as Operational Methodology

The ADDIE model structures of the system development phase of this study across five sequential stages, will producing discrete outputs that inform subsequent stages while remaining open to iterative refinement in response to empirical feeback.

Table 1. ADDIE Model of the Study

Sequential Stages	Description
Analyze	Systematic needs assessment of the institution's, including financial management practices, identifying operational gaps, and completeness of transaction documentation.

Design	Conceptual blueprint encompassing the database architecture in the system, including data input, validation rules, financial report structures, and dashboard.
Development	Translated the blueprint into a functional prototype. Collaboratively developing with academic experts and experienced zakat practitioners.
Implementation	Involved limited field trials, user training, initial monitoring, and full system deployment at the site.
Evaluation	Assessed system performance through continuity assessment and validity test of the result using formal validity testing instruments (Zebua & Mendrofa, 2023).

Source: Primary data processed by authors, 2026.

3.3. Framework Construction Methodology

The framework construction of this study is transforms from the empirical findings of the system development into a transferable governance framework replicable across zakat institutions in Indonesia. This transformation is achieved through a three-step process that moving from empirical findings to institutionally generalizable design principles. The three step were operationalized in Table 2, as follows.

Table 2. Framework Construction Steps

Construction Steps	Description
Architectural Abstraction	Identifying the structural relationships between system components, design integration, and technical specifications that enable their collective governance function.
Maqashid *Shari'ah* Formalization	Consolidating the Maqashid *Shari'ah* objectives to mapping a structured set of normative design standards. Every Maqashid *Shari'ah* objective should govern system architecture decisions in any institutional context where the framework is adopted.
Replicability Condition Derivation	Identifying the human capital readiness, infrastructural treholds, operational capacity standards, and regulatory alignment requirements.

Source: Primary data processed by authors, 2026.

3.4. Site and Sample

The empirical anchor of this study is a municipal-level National Amil Zakat Board (BAZNAS) in Central Java, Indonesia that operating under the regulatory jurisdiction of Law No. 23 of 2011. This zakat institution was selected based on the basis of three criteria. First, its status as a formally constituted municipal zakat institution with a documented governance mandate and regulatory representativeness. Second, the presence of identifiable and documented governance deficiencies in financial management and accountability reporting. Third, institutional willingness to participate in a multi-session iterative development and deployment process.

The study sample consisted of six amil that selected through purposive total sampling on the basis of their direct management with financial management processes. The homogeneity of this sample with respect to institutional role and operational exposure to the system under evaluation renders it methodologically appropriate for the SUS and UEQ assessment instruments (Brooke, 1996; Laugwitz et al., 2008). The sample size of this study

is acknowledged as a study limitation, wherein the primary unit of analysis in applied system development research is the system and framework, rather than the population; wherein usabiity and user experience data serve as validity indicators rather than as basis for population-level inference.

IV. Results and Analysis

4.1. Framework Overview

The Maqashid *Shari'ah*-grounded cloud-based AIS framework in this study has a architecture a two dimensional design that maps each of the five Maqashid *Shari'ah* objectives against each of the five ADDIE stages to producing a structured grid design decision nodes. The framework that developed in this study, serves a dual function. First, as a development instrument, it guides system designers through a normatively grounded sequence of design decisions. Second, as a replication instrument, it provides adopting institutions with a structured required ensuring that Maqashid *Shari'ah* maintained across the full development lifecycle. Furthermore, the integrates of Maqashid *Shari'ah* and ADDIE stages in this study, constitute a structured governance instrument operating across three interdependent layers. First, theological grounding, wherein the five Maqashid *Shari'ah* objectives function as normative design standards. Second, technical architecture, wherein the 21 integrated components operationalize those as a standards. Third, institutional viability, wherein replicability conditions specify the minimum requirements for framework adoption across zakat institutions in Indonesia. The framework (Maqashid *Shari'ah* × ADDIE) is visualized in Table 3, Table 4, and Table 5 as follows.

Table 3. Theological Grounding Maqashid *Shari'ah* × ADDIE

Maqashid *Shari'ah* Objectives	**Analyze**	**Design**	**Development**	**Implementation**	**Evaluation**
Hifzh al-din (Religion)	Compliance Needs	PSAK 409 Specs.	Report Modules	Compliant Check	*Shari'a* Audit
Hifzh al-nafs (Life/ UX)	User Profiling	Interface Blueprint	Ergonomic UI	Error Reduction	UEQ Perspicuity
Hifzh al-aql (Intellect)	Literacy Treshold	Autonomy Arch.	Transparency	Iterative Session	UEQ Stimulation
Hifzh al-nasl (Continuity)	Scalability Needs	Integrates Arch.	Cloud Deployment	Continuity Test	Replication Cond.
Hifzh al-mal (Wealth)	Gap Mapping	Validation Logic	Audit Trail Component	Live Testing	SUS/ UEQ

Source: Primary data processed by authors, 2026.

Table 4. Technical Architecture Maqashid *Shari'ah* × ADDIE

Transaction Management	**Validation and Audit**	**Financial Recapitulation**
1. Daily input module. 2. Zakat collection recording. 3. Zakat distribution recording. 4. *Infaq/ Shadaqah* collection recording.	1. Validation status mechanism. 2. Transaction review interface. 3. Compliance flag dashboard.	1. Daily recapitulation module. 2. Monthly recapitulation module. 3. Annual recapitulation module.

5. *Infaq/ Shadaqah* distribution recording.	4. Audit trail/ audit immutable log.	4. Fund balance recapitulation and tracking.
Reporting and Compliance (PSAK 409)	**Governance Dashboard**	
1. Balanced Sheet report. 2. Financial Performance report. 3. Changes in Fund report. 4. Cash Fow report. 5. Notes to Financial Statements. 6. Zakat Distribution Compliance report.	1. Executive summary dashboard. 2. Real-time fund monitoring. 3. Comparative performance visualization. 4. Cloud-based PSAK 409 compliant.	

Source: Primary data processed by authors, 2026.

Table 5. Institutional Viability Maqashid *Shari'ah* × ADDIE

Human Capital	Infrastructural Treshold	Regulatory Alignment
1. Min. 1 digitally literate *amil*. 2. Competency within 3 sessions. 3. Pre-deployment literacy training. 4. Designed system admin.	1. Stable internet connectivity. 2. Web browser enabled devices. 3. Active cloud platform subscription. 4. Zero on-premises server required.	1. Valid BAZNAS/ LAZ licence. 2. UU No. 23/ 2011 compliance. 3. Designated governance officer. 4. PSAK 409 reporting obligation.

Source: Primary data processed by authors, 2026.

4.2. Maqashid *Shari'ah* to System Component Mapping

The operationalization of Maqashid *Shari'ah* as constitutive design criteria requires that each of the five objectives be mapped with precision to specific system components that aims to concrete architectural decisions. The constitutive design criteria is visualized in Table 6 that refined through Implementation and Evaluation stages, as follows.

Table 6. Maqashid *Shari'ah* as Constitutive Design Criteria

Maqashid *Shari'ah* Objectives	Normative Design Mandate	System Components	Governance Function
Hifzh al-din (Religion)	*Shari'ah* compliant discharge, jurisprudential compliance, regulatory alignment with UU No. 23/ 2011.	PSAK 409 financial report, zakat distribution compliance report, compliance flag dashboard, changes in fund report.	Enforcement of orderly and juriprudentially compliance zakat management operations.
Hifzh al-nafs (Life/ UX)	Ergonomic interface design, cognitive load reduction, error minimization to protect sustained user engagement.	Daily transaction input module, governance dashboard, error minimization UI mechanisms, intuitive navigation architecture.	Reduction of transactional error rates and sustained operational engagement.

Hifzh al-aql (Intellect)	User autonomy architecture, operational transparency, and capacity-building integration for institutional digital literacy.	Transparent reporting logic, interpretable dashboard visualizations, embedded system documentation, real time fund monitoring interface.	Cultivating informed governance actors rather than passive system operators.
Hifzh al-nasl (Continuity)	Institutional sustainability, scalable architecture, and intergenerational governance capacity transmissibility.	Cloud-based deployment model, integrates component carchitecture, annual recapitulation module, replicability conditions framework.	Elimination of hardware obsolescence risk and cross institutional transmissibility.
Hifzh al-mal (Wealth)	Finansial integrity, audit traceability, transactional completeness, and *Shari'ah* compliant fund management.	Validation status mechanism, automated financial reporting suite, zakat collection recording, zakat distribution recording, audit trail log.	Real time financial integrity monitoring and immutable audit record generation.

Source: Primary data processed by authors, 2026..

Hifz al-din, aims to governs the system's compliance reporting infrastructure and its orderly zakat discharge mechanisms. Components designed under this objective ensure that zakat collection, allocation, and distribution processes adhere to the categories and proportions prescribed by Islamic jurisprudence, regulatory alignment of Law No. 23 of 2021, and that compliance deviations are automatically flagged for administrative review. *Hifz al-nafs*, governs the system's interface design architecture. Components designed under this objective prioritize cognitive load reduction through intuitive navigation structures, visually unambiguous data entry interfaces, and error-minimization mechanisms that prevent transactional mistakes before reporting outputs. The governance dashboard, designed for immediate situational awareness without requiring deep system navigation, that aims the mandate to support sustained, error-resilient human engagement with the system across extended operational use.

Hifz al-aql, governs the system's user autonomy architecture and its capacity-building integration features. Components designed under this objective ensure that amil staff are not rendered passive operators of an opaque technological system, but are equipped with the informational access, operational transparency, and functional comprehension necessary to engage with system outputs as informed governance actors. *Hifz al-nasl*, governs the system's sustainability and scalability architecture. Components designed under this objective include the cloud-based deployment model, which eliminates hardware obsolescence risk and ensures operational continuity across personnel transitions, including the integrates system architecture, which enables component-level updates without system-wide disruption. *Hifz al-mal*, constitutes the primary normative anchor of the framework's financial integrity architecture. This objective governs logic embedded in these components ensures that every financial movement within the institution is captured,

validated, and rendered auditable to directly fulfilling the Maqashid obligation to protect institutional wealth from mismanagement, opacity, and fiduciary breach.

4.3. Architectural Components of the Framework

The cloud-based AIS developed and validated in this study comprises 21 integrated components, organized across five functional clusters to constitute the system's governance architecture. The architectural component is visualized in Table 7 that refined through Implementation and Evaliation stages, as follows.

Table 7. Maqashid *Shari'ah* Embedded to Architectural Components

Functional Cluster	System Component	Functional Classification	Maqashid *Shari'ah* Alignment
Transaction Management	Daily transaction input module	Primary data entry	*Hifzh al-mal* and *Hifzh al-nafs*
	Zakat collection recording interface	Collection data capture	*Hifzh al-mal* and *Hifzh al-din*
	Zakat distribution recording interface	Distribution data capture	*Hifzh al-mal* and *Hifzh al-din*
	Infaq and *Shadaqah* transaction module	Supplementary fund entry	*Hifzh al-mal* and *Hifzh al-din*
Validation and Audit	Validation status mechanism	Real time compliance audit	*Hifzh al-mal*
	Transaction review interface	Manual audit review	*Hifzh al-mal* and *Hifzh al-aql*
	Compliance flag dashboard	Deviation alert system	*Hifzh al-din* and *Hifzh al-mal*
	Audit trail log	Immutable transaction record	*Hifzh al-mal*
Financial Recapitulation	Daily recapitulation module	Automated daily aggregation	*Hifzh al-mal* and *Hifzh al-nasl*
	Monthly recapitulation module	Automated monthly aggregation	*Hifzh al-mal* and *Hifzh al-nasl*
	Annual recapitulation module	Automated annual aggregation	*Hifzh al-mal* and *Hifzh al-nasl*
	Fund balance tracking interface	Real time balance monitoring	*Hifzh al-mal* and *Hifzh al-aql*
Reporting and Compliance	Balance Sheet report	Balance statement	*Hifzh al-din* and *Hifzh al-mal*
	Financial Performance report	Income and expense statement	*Hifzh al-din* and *Hifzh al-mal*
	Changes in Fund report	Fund movement disclosure	*Hifzh al-din* and *Hifzh al-mal*

	Cash Flow report	Liquidity and flow statement	*Hifzh al-mal* and *Hifzh al-din*
	Notes to Financial statement	Supplementary disclosure	*Hifzh al-din* and *Hifzh al-aql*
	Zakat Distribution compliance report	*Shari'ah* discharge verification	*Hifzh al-din*
Governance Dashboard	Executive Summary board	Strategic performance overview	*Hifzh al-aql* and *Hifzh al-nasl*
	Real time fund monitoring interface	Live fund situational awareness	*Hifzh al-mal* and *Hifzh al-aql*
	Comparative performance visualization	Tren and benchmark display	*Hifzh al-aql* and *Hifzh al-nasl*

Source: Primary data processed by authors, 2026.

Transaction Management cluster, encompasses the components constitute to primary data entry layer of the system, and are designed to enforce transactional completeness, categorical accuracy, and real-time data synchronization across all financial inputs. Validation and Audit Infrastructure cluster, comprises the validation status mechanism, that represents the system's primary technical innovation. These mechanism operating as a continuous, automated audit function, and evaluates each transaction entry against predefined compliance criteria and assigns a validation status in real time.

Financial Recapitulation cluster, encompasses the components automate to aggregation and periodization of transaction data and eliminating the manual recapitulation processes. Reporting and Compliance cluster, operationalizes the system's primary accountability function to generating standardized financial outputs that satisfy both Maqashid *Shari'ah* mandated disclosure obligations and the regulatory reporting requirements of Law No. 23 of 2011. Governance Dashboard cluster, encompasses the components that constitute to system's strategic governance layer, translating raw transactional and reporting data into immediately interpretable institutional performance indicators that accessible to both operational staff and institutional leadership without requiring financial accounting expertise.

4.4. Replicability Conditions

The transition from single-site empirical validation to scalable governance framework requires the explicit articulation of the institutional conditions under which the framework can be successfully adopted by municipal zakat institutions beyond the original development site. Based on the Implementation and Evaluation findings of this study, three categories of replicability conditions is produces. First, human capital requirements specify the minimum digital literacy and operational capacity standards for effective framework adoption. Adopting institutions must possess at minimum one staff member with sufficient digital literacy to administer cloud-based platform access, manage user accounts, and perform first-level system troubleshooting. Institutions lacking this minimum human capital threshold are advised to complete structured digital literacy development prior to system deployment, rather than attempting concurrent capacity development and operational adoption.

Second, Infrastructural thresholds specify the minimum technical environment necessary to sustain cloud-based AIS operations. Adopting institutions require stable internet connectivity at a minimum bandwidth sufficient for real-time cloud data synchronization, access to standard web-browser-enabled devices for each designated system user, and an institutional commitment to maintaining active cloud platform subscriptions across financial reporting cycles. Third, regulatory alignment requirements specify the compliance obligations that adopting institutions must satisfy prior to framework deployment. Institutions must operate under a valid BAZNAS or LAZ operational licence pursuant to Law No. 23 of 2011, ensuring that the system's reporting outputs are deployed within an institutionally legitimate governance context.

4.5. System Usability Scale (SUS) Validation

Usability was assessed using the System Usability Scale (SUS), administered to six *amil* respondents following full system deployment. SUS scores were calculated using Brooke's (1996) standard formula, producing individual scores and a composite mean, presented in Table 8.

Table 8. SUS Scores per Respondent

Respondent	SUS Score	Acceptability Category
A	67.5	Marginal
B	77.5	Acceptable
C	55.0	Marginal
D	60.0	Marginal
E	67.5	Marginal
F	57.5	Marginal
Mean (M)	64.17	Marginal
Standard Deviation (SD)	8.32	

Source: Primary data processed by authors (2026). Acceptability classification follows Bangor et al. (2008) and Brooke (1996)

The composite SUS mean (M) of 64.17 (SD = 8.32) falls within the Marginal acceptability range (50–70) and corresponds to the adjective rating of "OK" on the Bangor et al. (2008) adjective scale. Individual scores ranged from 55.0 (Respondent C) to 77.5 (Respondent B), with only one respondent achieving an "Acceptable" threshold (≥70). This score distribution reflects meaningful variance in user experience across the *amil* population, consistent with the diverse digital literacy profiles identified during the analysis stage.

Per-item contribution analysis illuminates the specific usability strengths and weaknesses underlying the composite score. Item 6 (system consistency) generated the highest contribution (9.2 points out of a possible 10), confirming that the system behaves reliably and predictably (Lewis, 2018). Items 1, 3, 5, and 7 (behavioural intention to reuse, task completion ease, navigational integration, and new-user learnability) each contributed 6.2 points, indicating uniformly solid performance on functional usability dimensions. Conversely, Item 4 (technical dependency) generated the lowest positive contribution (4.2 points), with 67% of respondents reporting that they had sought technical assistance during system use. Item 8 (errors and obstacles) similarly produced moderate scores, with 67% of respondents encountering operational errors or difficulties during use.

These findings present a differentiated usability profile, likely the system achieves strong functional consistency and task-enabling capability, but falls short of intuitive, self-sufficient operation (Venkatesh et al., 2003). The Marginal composite score, while below the

"Good" threshold, is theoretically and contextually significant for two reasons. First, the six-respondent represents an expert user population with direct institutional domain knowledge. Second, Marginal-range SUS scores contexts are well-precedented in organisational system implementations, particularly where users have transitioned from manual to digital workflows (Bangor et al., 2008).

4.6. User Experience Questionnaire (UEQ) Validation

User experience was evaluated using the User Experience Questionnaire (UEQ), comprising 26 items across six sub-scales rated on a seven-point semantic differential scale. Scale scores were computed as mean ratings converted to the −3 to +3 UEQ range, and interpreted against the UEQ benchmark dataset (Laugwitz et al., 2008; Schrepp et al., 2017). Results are presented in Table 9.

Table 9. UEQ Scale Scores and Benchmark Classification

Scale	Items	SUS Score	Acceptability Category
Attractiveness	1, 12, 14, 16, 24, 25	+1.694	Outstanding
Perspicuity	2, 4, 13, 21	+1.541	Outstanding
Efficiency	9, 20, 22, 23	+1.583	Outstanding
Dependability	8, 11, 17, 19	+1.583	Outstanding
Stimulation	3, 6, 15, 18	+1.833	Outstanding
Novelty	5, 7, 10, 26	+1.208	Excellent
Overall Mean (OM)		+1.574	Outstanding

Source: Primary data processed by authors (2026). Benchmark classification follows Schrepp et al. (2017): Below Average (<0.5), Above Average (0.5-0.8), Good (0.8-1.0), Excellent (1.0-1.5), Oustanding (>1.5).

The overall UEQ mean of +1.574 classifies the system as Outstanding, with five of six sub-scales achieving the Outstanding threshold and only Novelty classified as Excellent. These results, interpreted individually, reveal a picture of the system's experiential quality in Table 10, as follows.

Table 10. User Experience Results

UEQ Scale	Score	Results
Attractiveness	OM: +1.694 (Oustanding)	Encompasses that the items assessing whether the system is enjoyable, good, likeable, pleasant, attractive, and user-friendly (items 1, 12, 14, 16, 24, 25).
Perspicuity	OM: +1.541 (Oustanding)	Measures the system's clarity, learnability, ease of understanding, and freedom from complexity. Indicating that while the system is learnable, certain modules are perceived as moderately complex, a finding consistent with the SUS Item 2 result showing that 50% of respondents experienced some degree of feature-related confusion.
Efficiency	OM: +1.583 (Oustanding)	Captures the system's operational speed, practicality, efficiency, and organisational quality. Confirming that the system's automated calculation and integrated

		architecture deliver tangible time savings relative to the pre-existing fragmented workflow.
Dependability	OM: +1.583 (Oustanding)	Assesses the system's predictability, supportiveness, security, and expectation-meeting quality. This finding warrants contextual interpretation, given that the system introduced mandatory validation steps and structured data entry constraints that did not exist in the previous workflow (Davis, 1989; Ghani et al., 2024).
Stimulation	OM: +1.833 (Oustanding)	Measures the system's motivating, creative, engaging, and exciting qualities. Indicating that a minority of respondents found the system's repetitive data entry tasks somewhat monotonous. This is an expected characteristic of transaction-recording systems rather than a design failure, but it nonetheless identifies an opportunity for automation enhancement in future iterations.
Novelty	OM: +1.208 (Excellent)	Assesses the system's inventiveness, interest, leading-edge quality, and innovativeness. This finding is cloud-based AIS in a previously manual institution is institutionally innovative.

Source: Primary data processed by authors (2026)

4.7. The Framework Validation Against Maqashid *Shari'ah* Objectives

The validation of the framework against its Maqashid *Shari'ah* design foundations, is conducted by systematically evaluating as evidenced by the SUS and UEQ findings, to extent that each Maqashid *Shari'ah* objective has been operationally realized through the system's empirical performance. Furthermore, the framework validation againts each Maqashid *Shari'ah* objectives, is visualized in Table 11 as follows.

Table 11. Framework Validation

Maqashid *Shari'ah* Objectives	**Validation Description**
Hifzh al-din (Religion)	*Hifzh al-din* is substantiated by the system's Maqashid *Shari'ah* compliant zakat discharge architecture and its regulatory compliance reporting outputs. No compliance deviations were identified in the distribution recording processes, corroborating the system's capacity to enforce *hifzh al-din* as an operational governance standard.
Hifzh al-nafs (Life/ UX)	*Hifzh al-nafs* is substantiated by the Attractiveness (+1.694) and Perspicuity (+1.541) UEQ scores, which collectively indicate that respondents experienced the system's interface as visually coherent, cognitively accessible, and operationally learnable within the implementation timeframe. The error minimization mechanisms embedded in the transaction input modules were confirmed to function as designed and reducing transactional error rates across successive implementation sessions.

Hifzh al-aql (Intellect)	*Hifzh al-aql* is partially substantiated by the Stimulation (+1.833) UEQ score, which indicates that users experienced the system as engaging and intellectually activating rather than cognitively subordinating. However, the comparatively lower SUS scores on technical dependency items suggest that full *hifzh al-aql* realization requires supplementary capacity-building investment beyond system deployment alone.
Hifzh al-nasl (Continuity)	*Hifzh al-nasl* are demonstrated operational continuity across all three implementation sessions, including no service interruption, data loss, or system integrity failure was recorded. The integrates component structure was confirmed to support individual component updates without system-wide disruption, validating the institutional sustainability design mandate.
Hifzh al-mal (Wealth)	*Hifzh al-mal* is substantiated by the system's automated validation status mechanism that were confirmed as functionally operational across all three implementation sessions. The high Dependability UEQ score (+1.583) corroborates that respondents experienced the system's financial integrity infrastructure as reliable and consistent.

Source: Primary data processed by authors, 2026.

V. Conclusion and Recommendation

5.1. Conclusion

This study demonstrates that the integration of Maqashid *Shari'ah* as constitutive design criteria within an ADDIE structured development methodology that produces a cloud-based AIS that is technically validated, normatively coherent, and institutionally replicable. Empirical assessment at BAZNAS in Central Java, Indonesia yielded a SUS composite score of 64.17 and UEQ mean of +1.574. This result represent that the system delivers strong governance value across financial integrity, *Shari'ah* compliance, interface ergonomics, and institutional sustainability dimensions. Maqashid *Shari'ah* validation further of the five objectives were fully operationalized, while *hifz al-aql* was substantially realized with the qualification that full user autonomy requires supplementary capacity-building investment beyond system deployment alone. Furthermore, this study establishes a precedent of enduring significance by formally repositioning Maqashid *Shari'ah* from ex post evaluative instrument (assessor) to ex ante constitutive design criteria. Practically, the replicable framework equips municipal zakat institutions across Indonesia with a structured, normatively grounded, and empirically validated pathway toward digital governance adoption.

5.2. Recommendation for Future Research

Future research directions generated by this study's findings and limitations. First, multi-institutional validation across diverse municipal zakat contexts is needed to formally substantiate the framework's replicability claims beyond the single-site empirical anchor of BAZNAS in Central Java, Indonesia. Second, longitudinal panel designs tracking institutional accountability quality, *muzakki* trust indicators, and fund distribution efficiency across extended post-deployment periods. Third, the integration of machine learning algorithms into the validation status mechanism would advance the framework's technical contribution into the domain of artificial intelligence-based Islamic financial governance. Fourth, cross-sectoral application of the Maqashid *Shari'ah* × ADDIE framework to waqf management boards, Islamic microfinance institutions, and BMT cooperatives would validate the generalizability of its theoretical architecture

beyond the zakat governance domain. Fifth, the development of integrated digital literacy modules and adaptive user guidance systems as intrinsic framework components would substantially strengthen *hifzh al-aql* operationalization and embed institutional digital governance competency within the framework's adoption architecture itself.

5.3. Managerial Implication

This study carries managerial implications for three institutional actor categories within the Indonesian zakat governance ecosystem. First, for municipal zakat institution administrators, the framework's replicability conditions provide a concrete readiness assessment instrument that enables structured and low-investment cloud-based AIS adoption. Second, for regulatory oversight bodies, the demonstrated capacity of the Maqashid *Shari'ah* × ADDIE framework to produce PSAK 409-compliant reporting and real-time audit traceability within resource-constrained institutions provides a compelling empirical basis for the formalization of cloud-based AIS adoption standards within national zakat governance guidelines that transforming digital transformation from an open-ended mandate into a structured compliance pathway. Third, for Islamic social finance practitioners more broadly, the study's repositioning of Maqashid *Shari'ah* as constitutive design criteria invites a strategic reconsideration of institutional technology governance, including embedded Maqashid *Shari'ah* objectives at the inception of digital transformation strategies, rather than applying them as retrospective evaluative checklists.

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Data Availability Statement

Data associated with this research can be obtained through email upon request from the corresponding author.

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