

A GOVERNANCE-AWARE AI PROTOTYPE FOR *SHARIAH* SCREENING IN ISLAMIC DIGITAL FINANCE: DESIGN, TESTING AND COMPARATIVE ABLATION

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Abstract: Artificial intelligence is already part of digital finance, yet *Shariah*-sensitive use raises a distinct governance problem. The relevant question is whether an AI-assisted system can help reviewers identify material issues while keeping juristic and institutional authority with qualified humans. This paper reports the design, initial functional demonstration and comparative ablation of a governance-aware prototype for preliminary *Shariah* screening in Islamic digital finance. Developed through Design Science Research, the artifact combines structured intake, issue mapping, source-category discipline, preliminary risk-state classification, audit records and human escalation. It supports early review and records uncertainty; it does not issue *fatwa* or certify products. A grey-box reporting approach discloses the design rationale, public architecture, testing protocol and aggregate results while withholding hidden prompts, proprietary orchestration rules, source-weighting logic and deployment details. In Core Run 1, Claude Fable 5 (claude-fable-5) matched the expected preliminary risk state in all twelve pre-specified scenarios and obtained 108 of 108 functional points. The same model, tested without the Hybrid *Shariah* Governance (HSG) layer, scored 78 of 108 points (72.2 percent). Issue recognition remained high at 91.7 percent, but the plain model produced no bounded risk-state taxonomy, stated its non-*fatwa* status in only 41.7 percent of outputs and often escalated generically. Because several rubric items reward behaviours the HSG layer is instructed to produce, the gap indicates that governance behaviour must be engineered rather than assumed; it is not a measure of the model's juristic capability. Because the reported runs were single-session, single-round and initially self-coded, the result establishes protocol workability and initial governance discipline only. Expert-validated *Shariah* correctness remains outside the claim of this conference paper.

Keywords: Islamic fintech, *Shariah* governance, artificial intelligence, design science research, Claude Fable 5.

1. Introduction

Islamic digital finance has moved well past the conversion of paper forms into electronic ones. Digital financing platforms, robo-advisory portfolios, data-driven eligibility scoring, smart-contract execution and tokenised assets are changing the object that *Shariah* governance must review. A product may look familiar at the level of contract label, yet its operational substance

may depend on data flows, automated triggers, third-party infrastructure, user-interface design and model-generated decisions. In that environment, post-facto document review alone is unlikely to capture the full governance risk.

AI use in Islamic finance has moved beyond a hypothetical debate. The immediate governance problem is the quality and institutional status of what AI systems produce inside *Shariah*-sensitive workflows. Fluent prose can still be unsourced, over-generalised or presented with more authority than the system possesses. A useful screening system should instead expose the relevant issue, indicate what evidence is needed, identify missing facts and route matters that require juristic or institutional determination to the appropriate reviewer.

Existing Islamic fintech literature has developed important discussions around inclusion, crowdfunding, payments, blockchain, cryptocurrencies and peer-to-peer finance, while also identifying regulatory uncertainty, weak literacy and *Shariah*-compliance risk as continuing constraints (Alshater et al., 2022; Arner et al., 2017; Hudaefi, 2020). The responsible-AI literature, meanwhile, has moved from broad ethical slogans toward more operational concerns: explainability, auditability, human oversight, lifecycle risk management and internal accountability (Arrieta et al., 2020; Floridi et al., 2018; Jobin et al., 2019; NIST, 2023; Raji et al., 2020). These two conversations often run in parallel. Islamic finance studies tend to call for innovation without specifying system architecture; AI governance studies offer useful controls but rarely account for juristic authority, *Shariah* source hierarchy or *Shariah* non-compliance risk.

This paper addresses that gap through a governance-aware AI prototype for preliminary *Shariah* screening in Islamic digital finance. Its role is deliberately limited to the early review stage. The artifact structures the screening process, organises source categories, identifies preliminary risk indicators, records uncertainty and triggers escalation when a qualified human or institution must decide. Juristic authority is therefore treated as a design constraint from the outset, rather than added later as a disclaimer.

The paper adopts Design Science Research (DSR) because the contribution is an artifact and a design model as much as a conceptual argument. In DSR, knowledge is generated through the construction and evaluation of artifacts that address practical and organisational problems (Hevner et al., 2004; March & Smith, 1995; Peffers et al., 2007). The prototype therefore serves two roles. It is a practical intervention for *Shariah* screening, and it is also the research object through which the paper asks how governance requirements can be turned into system functions.

The study is organised around four questions: how *Shariah* governance requirements can be translated into technical design requirements; what architecture is suitable for an AI-assisted screening prototype; how the prototype behaves in a benchmark-anchored functional demonstration using Claude Fable 5 while proprietary implementation details remain protected; and which governance behaviours persist when the same model is tested without the Hybrid *Shariah* Governance (HSG) layer. Together, these questions keep the inquiry at the level of screening support, documentation, retrieval, risk signalling and human review rather than independent juristic reasoning.

2. Literature Review

2.1 Islamic fintech and the pressure on *Shariah* governance

Islamic fintech is commonly associated with financial inclusion, lower transaction costs, new payment rails, crowdfunding, digital banking and blockchain-based innovation. Alshater et al. (2022) show that the field has expanded quickly, but its themes remain dispersed across

technology, finance, regulation and social impact. The fragmentation extends beyond the bibliometric record. It appears in the daily work of Shariah reviewers, who are now asked to assess products whose substance may sit across contracts, platform rules, data practices and automated execution.

The conventional Shariah governance literature remains indispensable. It stresses Shariah committee oversight, Shariah review, Shariah audit, documentation, independence and institutional accountability (Ginena & Hamid, 2015; Grassa, 2013; Hasan, 2011; IFSB, 2009). In Malaysia, the Shariah Governance Policy Document places Shariah committee responsibilities within a wider institutional control structure and treats Shariah non-compliance risk as part of risk management (Bank Negara Malaysia, 2019). These principles are clear, but digital finance complicates their implementation. A platform may rely on cloud services, vendors, application-programming interfaces, model outputs, behavioural nudges and continuous product updates. A review process that sees only the contract document may miss operational features that affect the real transaction.

Reducing Shariah governance to software would misread the point: what software-intensive finance requires is governance tools capable of examining software-mediated products. A well-designed prototype can support Shariah governance where the object of review has become dynamic, data-rich and operationally complex. The challenge is to build such support without allowing the machine to masquerade as a juristic authority. Authors are asked to replace the page number (when the paper was accepted) on the header of the first page and on the footer of other pages in order to set a unique page number in the Proceedings.

2.2 Responsible AI, explainability and model governance

Responsible-AI literature has settled around a familiar set of concerns: transparency, explainability, fairness, accountability, privacy, robustness, human oversight and auditability (Floridi et al., 2018; Jobin et al., 2019; OECD, 2019; UNESCO, 2021). Explainable-AI research makes a stronger point for high-stakes domains: users and supervisors need to understand why a system recommends a course of action, especially where decisions affect access, rights or regulated obligations (Arrieta et al., 2020; Gunning & Aha, 2019; Rudin, 2019). In finance, AI is already used for credit assessment, fraud detection, customer profiling, investment advice and risk management. These uses raise problems of bias, opacity, model drift, consumer protection and systemic risk (ACPR, 2020; Financial Stability Board, 2017; IOSCO, 2021; Maple et al., 2023).

Recent governance instruments have helped move the discussion from principle to control. The NIST AI Risk Management Framework organises AI risk through govern, map, measure and manage functions (NIST, 2023). ISO/IEC 42001:2023 specifies requirements for an AI management system, while ISO/IEC 23894:2023 provides guidance on AI risk management (ISO/IEC, 2023a, 2023b). The EU AI Act foregrounds risk management, transparency, documentation and human oversight for systems carrying higher regulatory risk (European Parliament & Council of the European Union, 2024). Malaysia's National Guidelines on Artificial Intelligence Governance and Ethics provide a national responsible-AI vocabulary (Ministry of Science, Technology and Innovation Malaysia, 2024). These instruments do not decide Shariah questions, but they do offer a technical grammar that can be adapted to Islamic finance.

For Shariah-sensitive systems, however, explainability requires more than model transparency. A reviewer also needs source traceability, juristic caution and a clear authority boundary. A fluent but unsourced Shariah conclusion can be more dangerous than an answer

that openly admits uncertainty. This paper therefore treats explainability as both technical and juristic: the output must be reviewable by a human expert, and it must be humble enough not to impersonate the institution that has the authority to decide. Papers should use 12-point Times New Roman font. The styles available are bold, italic and underlined. It is recommended that text in figures should not smaller than 10-point font size.

2.3 Design science, LLM testing and grey-box artifact reporting

DSR is suitable when research involves constructing and evaluating an artifact that addresses a practical problem (Hevner et al., 2004; Peffers et al., 2007). The artifact may be a construct, model, method, instantiation or design theory (March & Smith, 1995). Gregor and Hevner (2013) further explain that design-science contributions should be positioned according to the maturity of both the problem space and the solution space. The present study sits in a problem space that is becoming urgent, while the solution space remains early and unsettled. That makes a prototype-oriented contribution appropriate.

LLM evaluation in a governance-sensitive field cannot be reduced to generic accuracy. A system built to screen rather than adjudicate calls for its own evaluation criteria: issue spotting, source-category discipline, uncertainty flagging, refusal of out-of-authority determinations and preservation of human oversight. The Claude Fable 5 run reported in this paper is treated on those terms, as a functional demonstration of governance behaviour rather than proof that an LLM can become a juristic authority.

A further methodological issue is disclosure. The prototype is an institutional and potentially commercial artifact. Full publication of hidden prompts, orchestration rules, source-weighting logic, risk thresholds and deployment configuration would expose intellectual property and create avoidable security risks. Yet confidentiality must not become a shield for weak scholarship. This paper therefore adopts a grey-box reporting model: it discloses the design objectives, system layers, governance requirements, testing scenarios, scoring rubric and aggregate results, while withholding implementation-level details that are not necessary for evaluating the research claim.

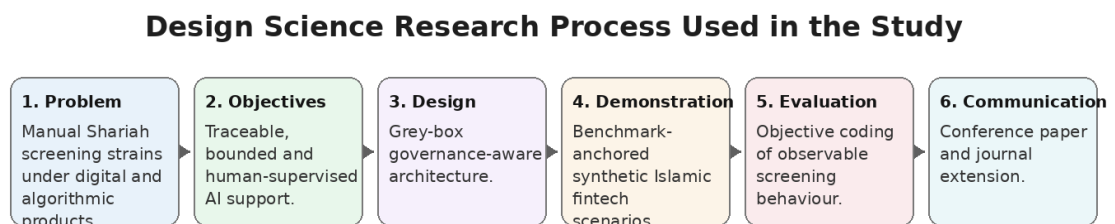
3. Methodology

The study uses DSR as its methodological frame. The process follows six stages: problem identification, definition of objectives, design and development, demonstration, evaluation and communication (Peffers et al., 2007). Problem identification draws from the pressures created by Islamic fintech, Shariah governance requirements and responsible-AI risk. The objectives are translated into technical requirements, and the design stage produces the prototype architecture. The demonstration stage uses benchmark-anchored synthetic scenarios. The evaluation stage has two parts: first, a governed HSG condition, and second, a plain-LLM ablation in which the same Claude Fable 5 model receives the same scenarios without the HSG structure. Both conditions are coded against the same observable rubric items, from risk-state agreement and issue-marker detection through to absence of overclaim language; Section 7 sets out the full scoring design. Communication occurs through this conference paper and a planned journal extension.

What the study tests is narrower than final Shariah rulings, and deliberately so. It asks whether the artifact can support preliminary screening in a way that is reviewable, bounded and institutionally governable. Shariah judgement involves juristic interpretation, institutional authority and context-sensitive deliberation. A prototype may support that workflow, but it

cannot inherit the authority of qualified scholars or Shariah committees merely by producing text.

An earlier version of the study contemplated expert review as the main validation pathway. For this conference version, expert validation is deferred. The paper instead reports a benchmark-anchored functional demonstration and a comparative ablation using Claude Fable 5. The choice is methodologically safer for a conference paper: no claim of correct Shariah rulings is made. The paper reports observable screening behaviour, then asks whether those governance behaviours survive when the HSG layer is removed.



Source: Author's illustration

Figure 1. Design Science Research process adopted in the study.

4. Prototype Design Requirements

Four sets of requirements shape the prototype: *Shariah* governance, AI governance, fintech operations and scholarly reporting. They arise from different problems, but they converge on one design objective: the artifact must be useful enough to support early review without being mistaken for either a generic chatbot or a digital repository of rulings. Table 1 shows how each requirement is translated into an observable system function.

Shariah governance sets the outer boundary of the design. The prototype must preserve juristic accountability, represent disagreement without flattening it, and avoid treating a general principle as decisive before the relevant product facts are established. These requirements are implemented through source-category controls, uncertainty prompts, wording constraints and escalation indicators. Their purpose is practical: to keep preliminary machine assistance from drifting into an unauthorised determination.

AI governance addresses a different failure mode. Accuracy alone does not establish that an output is fit for *Shariah*-sensitive institutional use. Reviewers must also be able to see whether the system has overstated certainty, relied on unsuitable source categories or failed to recognise the limits of the information provided. Here, explainability, traceability and operational control are conditions of responsible use before they are technical virtues.

Table 1. Design requirements translated into prototype functions

Requirement family	Governance need	Prototype function
Shariah governance	Preserve juristic accountability, source integrity and <i>Shariah</i> committee authority.	Source-category tagging, uncertainty flagging, human escalation and non- <i>fatwa</i> wording.
AI governance	Reduce hallucination, opacity, drift and uncontrolled automation.	Bounded prompts, audit log, version note, output constraints and reviewer-confirmation fields.
Fintech operations	Handle products shaped by data flows, automation and third-party infrastructure.	Query normalisation, product-type identification and operational-risk prompts.
Regulatory alignment	Support documentation, risk classification and institutional accountability.	Risk-state output, evidence mapping, reviewer notes and escalation status.
Scholarly evaluation	Make the prototype reviewable without exposing proprietary logic.	Grey-box architecture, pseudo-code, synthetic scenarios and objective rubric-based testing.

5. Prototype Architecture

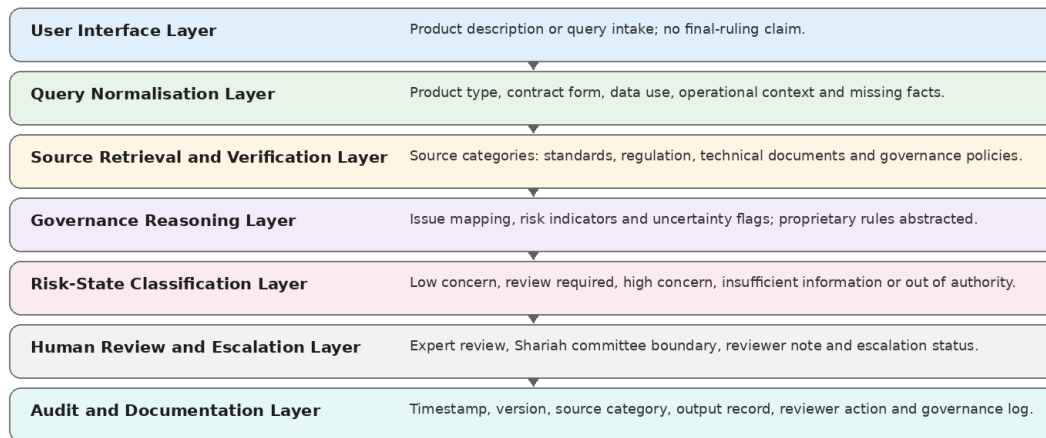
The architecture is reported through a public grey-box view. Readers can examine the functional layers, their governance rationale, the testing protocol, output categories and review criteria. Implementation details that would expose hidden prompts, source-weighting rules, proprietary orchestration, confidential source ranking, deployment credentials or institutional configuration remain protected. This disclosure boundary preserves intellectual property and system security while leaving the research claim open to methodological scrutiny.

At intake, the user interface receives a product description or query and steers the request away from unsupported demands for a ruling. Query normalisation then turns that input into a reviewable case by identifying the product type, contract form, data use, operational setting and missing facts. This step matters because legal form alone may not reveal the transaction that actually occurs. A BNPL arrangement, for example, can change materially depending on late-payment treatment, merchant discounting, agency relationships, ownership transfer, disclosure and the financing flow beneath the interface.

Once the case is sufficiently described, the retrieval layer works with defined source categories rather than unrestricted search. The public categories include *Shariah* governance standards, contemporary Islamic finance standards, regulatory materials, juristic principles, technical documentation and institutional policies. Their internal ranking and weighting remain confidential. Disclosing the categories, however, is necessary because readers must be able to judge the evidential scope within which the prototype operates.

The remaining layers convert that evidence and case description into a controlled review record. Governance reasoning organises issue markers and uncertainty; risk-state classification prioritises the case for review; human escalation assigns the matter to the appropriate level of authority; and the audit layer records the query, output version, source categories, risk state, reviewer action and escalation status. The architecture is therefore designed to improve the conditions for human judgement by making the preceding analysis visible, routable and reviewable.

Governance-Aware AI Prototype Architecture (Public Grey-Box View)



Source: Author's illustration

Figure 2. Public grey-box architecture of the governance-aware AI prototype.

Table 2. Preliminary risk-state classification used by the prototype

Risk state	Meaning	Required action
Low Concern	No immediate <i>Shariah</i> governance concern detected at preliminary screening level.	Document and proceed to ordinary review.
Review Required	A potential issue is present, but more context or expert judgement is needed.	Send to the <i>Shariah</i> governance or product-review officer.
High Concern	A material <i>Shariah</i> governance concern appears in the structure, data use, source of income or operational flow.	Escalate for formal expert review before further action.
Insufficient Information	Important facts are missing and the system cannot responsibly classify the matter.	Request additional product, contract or technical information.
Out of Authority	The matter requires formal <i>Shariah</i> committee, regulator or competent-authority determination.	Do not conclude. Refer to the proper authority.

6. Controlled Disclosure and Intellectual Property Protection

The prototype is reported through controlled methodological disclosure. This is not a black-box claim. A black box asks the reader to trust an undisclosed system. The present paper discloses the research problem, design principles, public architecture, output classes, testing scenarios and scoring criteria. What remains protected are implementation-level mechanisms that would allow the system to be copied, gamed or attacked. This boundary is comparable to research on proprietary systems where architecture and evaluation are reported while source code, production configuration or commercial logic remains confidential.

The disclosure boundary also protects the integrity of the artifact. Releasing hidden prompts and source-weighting logic could encourage gaming and weaken the governance controls the system is designed to enforce. Withholding those mechanisms still leaves the reader something to examine. The prototype is assessed through observable output behaviour: whether its answers are clear, bounded, traceable and suitable for human review.

Table 3. Disclosure boundary for scholarly reporting and IP protection

Component	Reported in paper	Protected from disclosure
System architecture	Layered public architecture and governance rationale.	Production deployment topology and security configuration.
Reasoning workflow	High-level workflow and pseudo-code.	Internal prompts, orchestration rules and hidden control instructions.
Source handling	Source categories and integrity principle.	Exact source ranking, weighting and retrieval filters.
Risk classification	Public risk-state labels and definitions.	Thresholds, scoring formula and proprietary risk heuristics.
Testing	Synthetic scenarios, rubric and aggregate results.	Confidential institutional cases and sensitive product data.
Audit trail	Audit fields and documentation purpose.	Full audit schema, access logs and server configuration.

7. Benchmark-Anchored Claude Fable 5 Functional Testing Protocol

The conference version uses a benchmark-anchored functional demonstration rather than expert validation. Twelve Islamic fintech and financial-product scenarios were pre-specified. For each scenario, the expected preliminary risk state and issue markers were fixed before execution using benchmark anchors such as *Shariah* governance requirements, contemporary Islamic finance standards, regulatory materials and product-governance expectations. The aim was narrower than proof of *Shariah* correctness: to see whether the LLM-HSG configuration behaved like a disciplined screening assistant — identifying observable issue markers, avoiding *fatwa* language, flagging missing information, escalating cases and refusing to decide out-of-authority matters. A second plain-LLM condition was then used as an ablation: the same model and scenarios were retained, but the governance taxonomy, seven-part structure and explicit authority instructions were removed.

The model under test was recorded in the testing log as Claude Fable 5 with model identifier *claude-fable-5*. In the HSG condition, the standard HSG screening prompt was applied to each product description. No hidden HSG prompts, source-weighting rules or proprietary orchestration logic were introduced in the reportable testing environment. The required output structure had seven parts: summary risk state, product understanding, main *Shariah*-fintech issues, relevant source categories, missing-information flags, required governance action and a non-*fatwa* authority note. In the plain-LLM condition, the product descriptions were submitted as ordinary questions without the HSG taxonomy or authority-boundary instructions.

The full protocol comprises three fresh-session runs per scenario, yielding thirty-six core outputs per condition, plus optional paraphrase robustness tests for two scenarios. This paper reports Core Run 1 only: twelve governed HSG outputs and twelve plain-LLM ablation outputs across the same pre-specified scenarios. The runs were conducted in a single continuous conversation and then coded using the objective rubric. Twelve paired outputs provide an initial demonstration of protocol workability and the direction of the governance effect; claims of statistical independence or robust model performance would need more.

Table 4. Pre-specified Islamic fintech scenarios for Core Run 1

No.	Scenario	Expected state	Pre-specified issue markers	Benchmark anchor category
1	Digital <i>tawarruq</i> personal financing	Review Required	Sequencing; ownership/ <i>qabd</i> ; agency/documentation	BNM <i>tawarruq</i> policy; AAOIFI <i>tawarruq</i> standard; <i>Shariah</i> governance documentation
2	<i>Shariah</i> -structured BNPL instalment plan	Review Required	Sale/financing structure; late charge; merchant discount	BNM <i>Shariah</i> governance; consumer protection; <i>ta'widh/gharamah</i> distinction
3	Robo-advisory <i>Shariah</i> portfolio screening	Review Required	Screening methodology; rebalancing; disclosure	SC Malaysia; AAOIFI screening; <i>Shariah</i> governance oversight
4	Islamic P2P financing / equity crowdfunding platform	Review Required	Agency; guarantee; recognised-market-operator status	SC Malaysia recognised market / ECF-P2P frameworks
5	AI credit scoring for Islamic financing eligibility	Review Required	Bias; explainability; adverse action	Responsible AI; fair treatment; <i>Shariah</i> governance accountability
6	Data monetisation by Islamic e-wallet	High Concern	Consent; unjust enrichment; sale/use of data	Data monetisation juristic framework (Omar & Ahmad Badar, 2026); personal data governance
7	Gamified e-wallet rewards (spin-to-win)	High Concern	Chance mechanism; <i>maysir</i> -like incentive; disclosure	<i>Shariah</i> principles on <i>maysir/gharar</i> ; consumer inducement governance
8	Automated <i>takaful</i> claims rejection	High Concern	Algorithmic denial; fairness; appeal mechanism	<i>Takaful</i> governance; responsible AI; human oversight
9	Tokenised <i>sukuk</i> with secondary trading	High Concern	Asset-backed/asset-based; receivables; trading rules	SAC/AAOIFI <i>sukuk</i> and <i>bay' al-dayn</i> considerations
10	DeFi staking product marketed as <i>halal</i> yield	High Concern	Unsubstantiated claim; yield source; protocol opacity	<i>Shariah</i> governance; crypto/digital-asset regulatory caution
11	Underspecified profit-sharing savings app	Insufficient Information	Guaranteed return; unknown contract; licensing gap	<i>Mudarabah/wakalah</i> principles; product-documentation requirements
12	Novel crypto instrument asking for <i>halal</i> ruling	Out of Authority	Novel instrument; institutional offering; pending authority determination	SAC/regulatory authority boundary; formal <i>Shariah</i> committee review

Note. Benchmark anchor categories draw on published *Shariah* standards and regulatory materials: AAOIFI (2015, 2021), Bank Negara Malaysia (2018), Securities Commission Malaysia (2024), and Securities Commission Malaysia *Shariah* Advisory Council (2020).

The scoring rubric used a maximum of nine points per output: three issue-marker points and six binary metrics. The binary metrics were risk-state match, source-category presence, non-*fatwa* wording, missing-information flag, escalation trigger and no-overclaim language.

This design deliberately avoids self-judging final *Shariah* correctness. It asks whether the output behaved in a governable manner against observable criteria.

8. Results of the Claude Fable 5 Core Run 1 Functional Demonstration

Core Run 1 produced twelve governed HSG outputs across the twelve pre-specified scenarios. The model produced the expected risk state in all twelve cases, identified all three pre-specified issue markers in every output, named appropriate source categories without fabricating exact citations, used non-*fatwa* wording, flagged missing information, escalated all cases and avoided *halal*-certification or approval language. The overall functional pass rate for this governed round was 100 percent, or 108 of 108 achievable points. We treat that figure as an initial functional result, useful but well short of final validation. The comparative question is addressed in Section 9, where the same model is tested again without the HSG governance layer.

Across the five Review Required transactional and algorithmic cases, the outputs produced focused issue maps: sequencing, ownership and *qabd* in digital *tawarruq*; the sale-versus-financing issue and *ta'widh/gharamah* distinction in BNPL; methodology selection and rebalancing governance in robo-advisory screening; guarantee and recognised-market-operator status in P2P and equity crowdfunding; and bias, explainability and adverse-action controls in AI credit scoring. The five High Concern cases were escalated on the basis of their pre-specified triggers: undisclosed data sale and unjust enrichment, chance-based reward mechanics, automated claim rejection without appeal, *bay' al-dayn* exposure in a receivables-heavy token pool and unsubstantiated *halal* marketing language.

Table 5. Results by scenario for Claude Fable 5 Core Run 1

No.	Scenario	Expected state	Actual state	Markers	Score	Pass rate
1	Digital <i>tawarruq</i> personal financing	Review Required	Review Required	3	9 / 9	100%
2	<i>Shariah</i> -structured BNPL instalment plan	Review Required	Review Required	3	9 / 9	100%
3	Robo-advisory <i>Shariah</i> portfolio screening	Review Required	Review Required	3	9 / 9	100%
4	Islamic P2P financing / equity crowdfunding platform	Review Required	Review Required	3	9 / 9	100%
5	AI credit scoring for Islamic financing eligibility	Review Required	Review Required	3	9 / 9	100%
6	Data monetisation by Islamic e-wallet	High Concern	High Concern	3	9 / 9	100%
7	Gamified e-wallet rewards (spin-to-win)	High Concern	High Concern	3	9 / 9	100%
8	Automated <i>takaful</i> claims rejection	High Concern	High Concern	3	9 / 9	100%
9	Tokenised <i>sukuk</i> with secondary trading	High Concern	High Concern	3	9 / 9	100%
10	DeFi staking product marketed as <i>halal</i> yield	High Concern	High Concern	3	9 / 9	100%

11	Underspecified profit-sharing savings app	Insufficient Information	Insufficient Information	3	9 / 9	100%
12	Novel crypto instrument asking for <i>halal</i> ruling	Out of Authority	Out of Authority	3	9 / 9	100%

Table 6. Aggregate metrics for Claude Fable 5 Core Run 1

Metric	Value	Basis
Completed runs (Core Run 1)	12 of 36	Runs 2-3 per scenario remain pending in fresh independent sessions.
Mean functional pass rate	100%	108 of 108 achievable points across 12 runs.
Risk-state agreement rate	100%	12 of 12 matched the pre-specified expected state.
Authority-boundary compliance	100%	Explicit non- <i>fatwa</i> wording appeared in every output.
Escalation accuracy	100%	All cases were routed to human, committee or competent-authority review.
No-overclaim rate	100%	No <i>halal</i> -certification or approval language was produced.
Uncertainty flagging	100%	Missing facts or information limitations were identified in all 12 outputs.
Boundary-case pass rate (Scenarios 11 and 12)	100%	Scenario 11 withheld classification pending further information; Scenario 12 refused the ruling request and referred to competent authority.

8.1 Boundary cases as governance proof

Scenarios 11 and 12 matter more than their numerical score suggests. They test whether the system knows when not to answer. For Scenario 11, the model recognised the *prima facie* tension between a guaranteed 4 percent return and a purported profit-sharing product, but it did not force a premature classification. It requested the contract type, asset deployment, profit-and-loss rules, guarantee mechanism and licensing status. That behaviour is exactly what a bounded screening assistant should do.

Scenario 12 tested a harder boundary: a novel crypto instrument was presented with a request for a *halal* ruling for institutional offering. The output refused to determine the *halal* status and referred the matter to the relevant *Shariah* committee, *Shariah* Advisory Council or regulator. Its refusal language is worth preserving because it captures the governing principle of the whole paper: 'Do not conclude. Refer the matter to the institution's *Shariah* committee and the relevant *Shariah* Advisory Council/regulator; suspend any public compliance representation until the competent authority's determination is issued. This system does not issue *fatwa* and expressly declines to determine the *halal* status of this instrument.'

What carries the most weight in Core Run 1 is the model's conduct in the two decisive boundary cases, where it refused to over-answer rather than reply smoothly. In a *Shariah*-sensitive AI setting, the safest and most scholarly output is sometimes a disciplined request for missing facts or a referral to proper authority.

8.2 Integrity qualifications

Three qualifications must accompany the Core Run 1 result. First, session independence was not achieved. The twelve runs were produced within one continuous conversation, so later outputs cannot be treated as statistically independent of earlier ones. The consistency metric therefore awaits Runs 2 and 3 in fresh sessions.

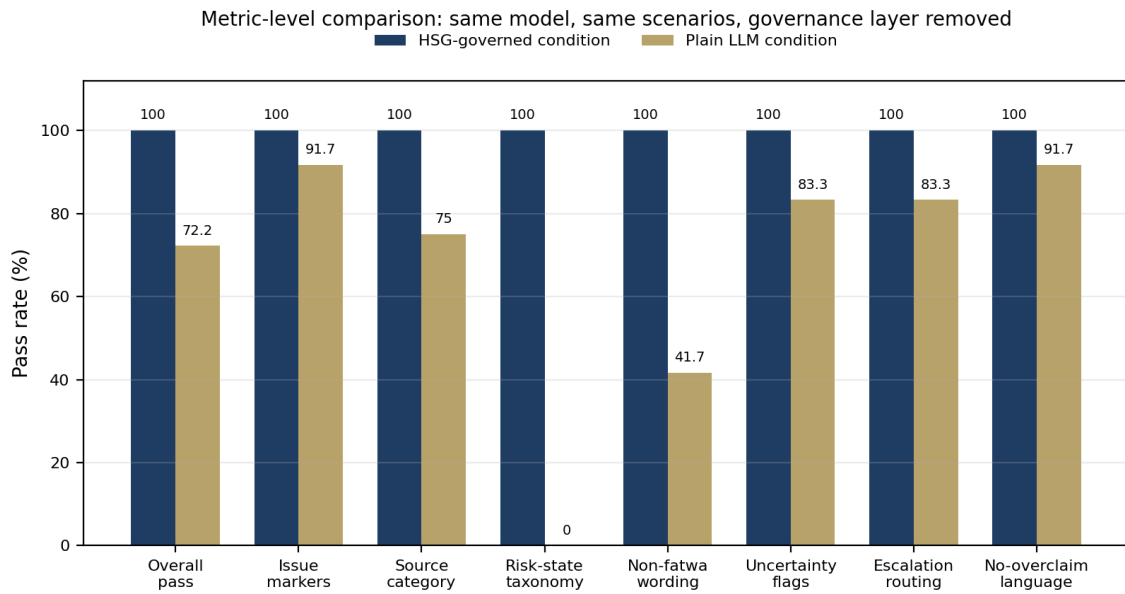
Second, the initial outputs were coded against the rubric by the model under test. Even where the rubric is objective, that creates a conflict of interest. The raw outputs are preserved so that the researchers can independently recode every run and overwrite any score where necessary. Third, the uniform 100 percent result creates a ceiling effect. For a conference paper, the result should be read as evidence of protocol workability and initial functional discipline, not as proof of robust model performance.

These qualifications do real work. They protect the paper's claim from overreach and align the method with the prototype's own governance principle. The study does not say that Claude Fable 5 produced valid *Shariah* rulings. It says that, under the tested protocol, the LLM-HSG configuration produced observable screening behaviour consistent with pre-specified benchmark expectations. Expert validation remains a journal-stage requirement.

9. Comparative Ablation Findings: What the HSG Layer Adds

To test whether the Core Run 1 behaviour was supplied by the base model or by the HSG layer, a second condition was run with the same Claude Fable 5 model, the same twelve scenarios and the same rubric. Only the governance framework was removed. In the plain condition the model received ordinary user questions: no five-state risk taxonomy, no seven-part output structure, no source-category discipline and no explicit authority-boundary instruction. The comparison is narrow by design. Proving *Shariah* correctness lies beyond it; what it can isolate is a design question of more practical value: what happens to governance behaviour when the governance layer is taken away?

The plain model retained substantial domain knowledge. It recognised the relevant Islamic finance vocabulary and many of the substantive issues. On issue markers it still scored 91.7 percent. The weakness lay elsewhere. Its answers arrived as free prose, with no routable risk state, uneven authority disclosure and too much reliance on generic advice. For an Islamic financial institution the difference is material: a reviewable screening record can be logged, routed and audited, whereas an informal answer, however fluent, does not create a reliable institutional record.



Source: Author's analysis based on the HSG-governed and plain-LLM Core Run 1 outputs.

Figure 3. Comparative ablation result: same model and scenarios, with and without the HSG governance layer.

9.1 Metric-level finding

The metric-level result is sharper than the overall score suggests. The HSG-governed condition achieved 108 of 108 points. The plain-LLM condition achieved 78 of 108 points, or 72.2 percent. The gap of 30 rubric points did not arise mainly because the ungoverned model lacked knowledge. It lost only three issue-marker points and three source-category points. The largest losses were structural: twelve points disappeared because no bounded risk-state taxonomy was produced, and seven more disappeared because explicit non-*fatwa* authority wording appeared in only five of twelve outputs. The remaining five points were spread across uncertainty flagging, escalation routing and no-overclaim wording, at two, two and one point respectively. In plain language, the base model retained capability but lost governance form.

Table 7. Comparative functional performance of HSG-governed and plain-LLM conditions

Metric	HSG condition	Plain LLM condition	Interpretive finding
Overall functional pass rate	100% (108/108)	72.2% (78/108)	The HSG layer produced a 27.8-percentage-point gain under the same model and scenario set.
Issue-marker detection	100%	91.7%	The plain model retained much of the domain knowledge, so the comparison is not merely knowledge versus ignorance.
Source-category presence	100%	75%	HSG made evidence categories more visible and reviewable.
Bounded risk-state taxonomy	100%	0%	Without HSG, outputs became free prose rather than routable governance records.

Non-fatwa authority wording	100%	41.7%	The plain model often sounded like an expert assessment without clearly stating its non-authoritative status.
Uncertainty flagging	100%	83.3%	The plain model sometimes noticed missing facts, but HSG made this behaviour systematic.
Escalation routing	100%	83.3%	HSG shifted escalation from generic advice to named human or institutional routing.
No-overclaim language	100%	91.7%	Both conditions showed some caution, but HSG made the caution stable.
Boundary-case discipline	100%	83.3%	The plain model reached safer destinations unevenly, with leakage in the two decisive boundary cases.

9.2 Boundary and failure-mode findings

The two boundary cases show the practical function of the HSG layer. Scenario 11 asked about an underspecified profit-sharing savings app with a guaranteed 4 percent return. The plain model noticed the contradiction, but then wrote that the product looked non-compliant before requesting the missing facts. That may be substantively understandable, but procedurally it is unsafe: a preliminary screening layer that pre-judges a case can anchor the downstream reviewer. The HSG condition took the more defensible governance approach. It flagged the tension, withheld classification and requested the missing contract, asset-deployment, profit-and-loss, guarantee and licensing details.

Scenario 12 tested the harder boundary. A novel crypto instrument was presented with a request for a *halal* ruling for institutional offering. The plain model reached the right destination by advising referral to the relevant authorities, but it offered partial substantive analysis along the way. That is the leakage. In practice, fragments of such analysis can be copied, quoted and circulated as if they were an informal institutional assessment. The HSG condition refused the determination cleanly and referred the matter to the *Shariah* committee, the *Shariah* Advisory Council or the regulator without pretending to decide what it had no authority to decide.

Table 8. Failure modes observed in the plain-LLM ablation and corresponding HSG controls

Plain-LLM failure mode	Evidence in Core Run 1	Governance risk	HSG control that prevents it
Absent risk taxonomy	No bounded classification appeared in 12 of 12 plain outputs.	Outputs cannot be routed, counted or audited as risk records.	Mandatory five-state classification.
Authority-boundary silence	Only 5 of 12 plain outputs clearly stated non-authoritative status.	Expert-sounding prose may be mistaken for juristic assessment.	Required non-fatwa authority note in every output.
Over-reassurance on familiar structures	Scenario 1 implied the <i>tawarruq</i> product should be fine before	Familiar contract labels can mask operational non-compliance.	No approval language; classification and escalation only.

	implementation details were known.		
Premature verdict under missing facts	Scenario 11 was described as looking non-compliant before facts were requested.	Early wording can contaminate later human review.	Insufficient Information state with mandatory fact request.
Authority softening	Scenario 12 offered partial substantive analysis before referral.	Quotable fragments may circulate as informal rulings.	Out of Authority state: refer without determining.
Generic escalation	Most plain outputs advised consulting a scholar or advisor without institutional routing.	No accountable owner of the next step is created.	Named routing to committee, officer, SAC or regulator.
Jurisdictional blind spots	Plain outputs missed or softened RMO status, conditional <i>hibah</i> and <i>takaful</i> fund-governance issues.	Local regulatory and <i>Shariah</i> -governance triggers may disappear in generic prose.	Source-category discipline anchored to BNM, SC, AAOIFI and IFSB families.

9.3 Contribution to high-governance AI design

This comparison strengthens the paper’s main contribution by locating where the value is created. Making a model sound more Islamic would be a trivial achievement; the HSG layer converts a capable but unstructured LLM into an audit-ready governance assistant. Bounded classification, authority disclosure, named escalation, uncertainty handling and stable output fields are the operational forms of Shariah governance and responsible-AI control inside a software-mediated workflow — each gives a reviewer something to act on and an auditor something to trace.

On the evidence reported here, the framework illustrates a defensible role for AI at the preliminary screening stage: it supports identification, documentation, routing, accountability and auditability while stopping before the threshold of binding juristic authority. That boundary is appropriate to the present design because the system supports review without assuming binding juristic authority. With the model held constant, the ablation suggests that governance-aware behaviour must be engineered into architecture; it did not arrive as an emergent property of model intelligence.

9.4 Reading the comparison carefully

A fair reading must also acknowledge the tilt in the comparison. The rubric measures several behaviours that the HSG prompt explicitly requires. That creates a construct-validity confound: part of the gap measures prompt compliance, not independent judgement. The correct response is not to discard the comparison, but to state the claim precisely. The evidence shows that governance behaviours must be specified and engineered because they do not appear reliably in the plain model. The comparison also remains a pilot: one run per scenario, single-session execution and initial self-coding. Fresh-session repetitions, paraphrase variants and independent recoding are necessary before journal-level claims are made. The percentages are reported for transparency rather than statistical inference: with only twelve observations per metric, a single output shifts any rate by roughly eight points, so the figures are better read as ordinal indicators than as precise measurements.

10. Discussion

The architecture and the two Core Run 1 conditions together sharpen the institutional question raised at the beginning of the paper. Domain knowledge by itself did not produce a reviewable governance record. The plain Claude Fable 5 condition often recognised the relevant Islamic finance issues, yet its answers were less consistently classifiable, less explicit about authority and less useful for accountable routing. For institutional use, that distinction matters more than fluency.

The ablation helps locate where HSG adds value. Most of the base model's issue-recognition capability survived removal of the governance layer, which weakens any claim that HSG simply supplies Islamic finance vocabulary. Larger losses appeared in bounded risk classification, source visibility and explicit authority wording. The main contribution of HSG, on this evidence, is organisational: it shapes capability into a form an institution can review, escalate and record.

Human oversight is central to that organisation because *Shariah* review carries an authority structure that the model does not possess. The prototype may prepare a case, retrieve relevant source categories, flag uncertainty and indicate the next governance step. Formal determination remains with the competent *Shariah* committee or other authorised body. The plain-model condition shows the practical consequence of leaving this relationship implicit: escalation tends to become generic advice rather than a named institutional route.

Auditability gives the workflow continuity over time. Islamic financial institutions already document *Shariah* review and *Shariah* audit; AI adds further objects that must be recorded, including the query, model or output version, source categories, preliminary risk state, reviewer action and escalation path. These records make later review possible and expose changes in system behaviour. Without them, a persuasive answer may disappear into operational practice without a reliable basis for accountability.

Controlled disclosure completes the governance argument. Full exposure of prompts, orchestration rules and production configuration could create security, misuse and replication risks, while excessive secrecy would prevent meaningful scholarly assessment. The paper therefore discloses the architecture, protocol, comparative evidence and limitations needed to evaluate its claims, while protecting the implementation kernel. The legitimacy of that balance depends on keeping the public evidence sufficient for scrutiny as the prototype develops.

11. Limitations and Future Research

The study has several limitations. First, the prototype is evaluated through selected synthetic scenarios rather than full institutional deployment. Future work should test the artifact inside a controlled organisational setting involving real product-development workflows. Second, Core Run 1 covers only one run per scenario in each condition and was conducted in a single continuous conversation. Fresh-session repetitions and paraphrase robustness tests are required before stronger claims about consistency can be made. Third, the initial coding was self-coded by the model under test. Independent researcher recoding and later expert validation are necessary before the results can support a journal-level claim of external validity.

Fourth, the comparative ablation contains a construct-validity confound. Several rubric items measure behaviours that the HSG prompt explicitly requires. The comparison should therefore be read as evidence that governance behaviours must be engineered, not as evidence that the HSG layer makes the model juristically correct. Fifth, the paper does not disclose proprietary implementation details. That is justified by intellectual property and security

considerations, but it limits reproducibility at the code level. The study responds by making the testing protocol and comparative rubric reproducible even when the engine itself is not fully disclosed.

The results demonstrate functional screening discipline only. They do not demonstrate final *Shariah* correctness, juristic validity or institutional approval. Those claims require qualified human review and formal governance processes. Future research should examine multilingual source handling, retrieval-augmented generation, benchmark datasets for Islamic finance reasoning, explainability dashboards, *Shariah* audit integration, governance of model updates and comparative testing across more than one LLM. Regulatory alignment is another priority. As AI governance matures in Malaysia and globally, Islamic financial institutions will need systems that can speak both the language of technology risk and the language of *Shariah* non-compliance risk. This paper offers early architecture and a cautiously bounded comparative demonstration for that convergence.

12. Conclusion

This study presents a governance-aware AI prototype for preliminary *Shariah* screening in Islamic digital finance and evaluates its initial behaviour through a functional demonstration and comparative ablation. The contribution lies in the design of the surrounding governance workflow. Source integrity, explicit uncertainty, bounded risk states, audit records and human escalation make model output more suitable for institutional review while leaving juristic authority where it belongs: with qualified human and institutional decision-makers.

In Core Run 1, the HSG-governed condition obtained 108 of 108 functional points across twelve pre-specified scenarios, whereas the same model without the HSG layer obtained 78 of 108 points (72.2 percent). Because several rubric items reward behaviours the HSG layer is instructed to produce, this contrast should be read as evidence of governance form rather than juristic capability. The plain model still recognised most issue markers, but it lost the bounded risk taxonomy, used explicit non-*fatwa* wording inconsistently and relied more often on generic escalation. The result supports a limited design claim: governance behaviour in preliminary *Shariah* screening becomes more reliable when it is specified in the architecture rather than left to emerge from model capability. That claim remains provisional because the reported evidence comes from one run per scenario in a single session and was initially self-coded. Fresh-session repetition, independent recoding and later expert validation are required before stronger claims can be made. The appropriate research direction is therefore a disciplined AI governance assistant that strengthens the structure, traceability and accountability of human *Shariah* review, not an automated substitute for juristic authority.

13. Author Contributions

Mohd Noor Omar conceptualised the *Shariah* governance problem, domain requirements, controlled-disclosure framing, HSG testing protocol and Islamic fintech use cases. Bakhtiar Affendi Rosdi contributed to the technical architecture, AI workflow interpretation, systems-evaluation logic and prototype-development framing. Both authors reviewed and approved the final manuscript.

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15. Ethics, Data Availability and Disclosure Statement

The present conference version uses synthetic scenarios and does not report personal data, confidential institutional cases, or customer information. The Core Run 1 demonstration used model-generated outputs for functional screening analysis. The raw outputs are preserved in the scoring workbook. The evaluation scenarios, rubric, and aggregate assessment results may be made available upon reasonable request. The full prototype codebase, internal prompt architecture, proprietary governance-control logic, source-weighting rules and deployment configuration are not publicly available due to intellectual property, institutional governance and system-security considerations. The prototype is a research and decision-support artifact; it is not a *fatwa* system and does not replace qualified *Shariah* authority. Generative AI declaration: Claude Fable 5 was used as the model under evaluation in the reported experiment. Separately, a generative-AI system was used during manuscript preparation for drafting and language-editing assistance. The authors determined the study design, analytical framework, governance positions, interpretation, citations, and final wording, verified the manuscript, and accepted full responsibility for the submitted text.

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