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CONSOLIDATION OF PROSPECTIVE HAJJ PILGRIMS' ACCOUNTS AS A MECHANISM FOR MANAGING BENEFIT VALUE: EMPIRICAL EVIDENCE FROM THE BPKH AND POLICY IMPLICATIONS

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Abstract

The Hajj Financial Management Agency (BPKH) manages more than Rp176 trillion (2025) in pilgrim funds through a pooled fund system that limits individual transparency for prospective pilgrims facing a waiting period of approximately 26 years. This study examines the impact of account unitization—which converts each pilgrim's deposit into units valued based on the daily Net Asset Value (NAV)—on investment and allocation efficiency, transparency, pilgrim satisfaction, and expectations regarding the timely repayment of Hajj Travel Costs (BPIH). The study employs a sequential explanatory mixed-methods design: the quantitative phase consists of a stratified random sampling survey of 380 prospective Hajj pilgrims analyzed using SEM-PLS (SmartPLS 4.0), followed by a qualitative phase involving in-depth interviews with 15 key informants from the BPKH, the MUI's Sharia Council (DSN MUI), the Ministry of Hajj and Umrah, and Sharia Banks. A counterfactual historical simulation of the NAB using BPKH financial data from 2018–2025 was conducted to compare unitization with a pooled fund. Preliminary simulation results indicate that unitization would yield a portfolio return of 7.2% per year (vs. 5.8% for the pooled fund), a Sharpe ratio of 1.58 (vs. 1.12), a transparency index of 82.7 (vs. 45.2), and an expected on-time repayment rate for BPIH of 89% (vs. 54%). This study contributes a new integrative theoretical framework that combines Agency Theory, Modern Portfolio Theory, and Islamic Corporate Governance, with transparency as the key mediating variable and Islamic financial literacy as the moderating variable.

Keywords: Account unitization, BPKH, benefit value, transparency, Islamic financial literacy, SEM-PLS, mixed methods, Islamic public finance.

INTRODUCTION

The management of Hajj funds in Indonesia faces a fundamental challenge in the form of information asymmetry inherent in the pooled fund system. The BPKH currently manages collective funds exceeding Rp176 trillion without allocating individual units to each depositor (LP3KH BPKH, 2025). High registration growth and limited quotas granted by the Kingdom of Saudi Arabia have resulted in long waiting lists, Prospective Hajj pilgrims must currently wait approximately 26 years and hope to track the growth of their initial deposits and the value of benefits received, as well as understand the types of investments and their allocation—a situation that directly contradicts the Islamic principles of amanah (trust) and adl (justice), which form the foundation of Islamic financial governance (Tapanjeh, 2009).

The unitization of accounts—operationalized through a unit-pricing mechanism—offers a structural solution by converting each pilgrim's deposit into proportional units valued based on the daily Net Asset Value (NAV) derived from the BPKH's actual investment performance. This mechanism is not without precedent in the Islamic world: Tabung Haji Malaysia has operated a unit-based system since 1963 and is internationally recognized as a model for transparent hajj fund management (Tabung Haji, 2023).

Despite its theoretical advantages and the availability of a reference model, the BPKH has not yet implemented unitization as of 2026. This gap motivates the main research question posed in this study: How does the implementation of unitized accounts affect investment efficiency, transparency, pilgrim satisfaction, and expectations of timely BPIH repayment, with transparency as the mediating variable and Islamic financial literacy as the moderating variable?

This study makes three distinct contributions. First, it introduces an integrative theoretical model that combines Agency Theory, Modern Portfolio Theory, and Islamic Corporate Governance—a combination that has never before been applied to the management of Islamic public funds. Second, it provides the first published historical counterfactual simulation of BPKH account unitization using financial data from 2017 to 2024. Third, it generates actionable policy recommendations for the BPKH, the Ministry of Religious Affairs (Kemenag), and the Financial Services Authority (OJK), as well as implications for other Muslim countries that manage congregational funds.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Grand Theory

This study is grounded in three levels of theoretical foundations. At the grand theory level, Agency Theory (Jensen & Meckling, 1976; Fama & Jensen, 1983) frames the relationship between the principal (prospective Hajj pilgrims) and the agent (BPKH), and explains how information asymmetry leads to inefficiencies in fund management. Modern Portfolio Theory (Markowitz, 1959) provides a quantitative foundation for measuring investment efficiency through net asset value (NAV) per unit and risk-adjusted performance metrics such as the Sharpe ratio.

Middle-Range Theory

Islamic Corporate Governance (IFSB, 2006; Tapanjeh, 2009) operationalizes the normative requirements for Sharia compliance in fund management—shafafiyyah (transparency), mas'uliyyah (accountability), and adl (distributive justice). Information Asymmetry Theory (Akerlof, 1970; Stiglitz, 2001) explains how the architecture of pooled funds systematically creates adverse selection problems by concealing the performance of individual funds from depositors.

Application Theory

The Customer Satisfaction Theory (Kotler & Keller, 2016) and the SERVQUAL framework measure perceived service quality and worshippers' satisfaction as outcome variables. Financial Literacy Theory (Lusardi & Mitchell, 2011; OECD/INFE, 2012) provides the conceptual basis for the moderating role of Islamic financial literacy. The Unit Pricing Mechanism framework (OJK, 2015; BAPEPAM-LK) provides the technical architecture for calculating and disclosing the Net Asset Value (NAV).

Research Hypotheses

Based on the theoretical framework above, six research hypotheses are proposed. Table 1 presents all hypotheses along with their theoretical foundations and expected directions of influence.

Table 1. Research Hypotheses

Code	Hypothesis	Theoretical Basis	Direction of Effect
H1	Account consolidation has a positive effect on the efficiency of BPKH investment performance (Sharpe ratio and portfolio return)	Agency Theory (Jensen & Meckling, 1976); Modern Portfolio Theory (Markowitz, 1959)	Positive (+)
H2	Account consolidation has a positive effect on the transparency of benefit value management	Information Asymmetry (Akerlof, 1970); Islamic Corporate Governance (IFSB, 2006)	Positive (+)
H3	Transparency of benefit value has a positive effect on the satisfaction of prospective Hajj pilgrims	SERVQUAL; Customer Satisfaction Theory (Kotler & Keller, 2016)	Positive (+)
H4	Account unification has a positive effect on expectations of timely BPIH repayment	Unit Pricing Mechanism (OJK, 2015)	Positive (+)
H5	Transparency mediates the relationship between account unification and pilgrims' satisfaction	Mediation Analysis (Baron & Kenny, 1986)	Full mediation
H6	Sharia financial literacy moderates the relationship between account consolidation and perceptions of transparency	Financial Literacy Theory (Lusardi & Mitchell, 2011)	Positive moderation

RESEARCH METHODS

Research Design

This study employs a mixed-methods sequential explanatory design (Creswell & Plano Clark, 2018), with quantitative findings serving as the analytical priority and qualitative data used to contextualize and explain the statistical results. The quantitative phase tested the structural model using SEM-PLS; the qualitative phase explored implementation barriers, regulatory readiness, and perspectives on Sharia governance through thematic analysis.

Population and Sample

The quantitative population comprises all prospective Hajj pilgrims registered on Indonesia's national waiting list (SISKOHAT). A stratified random sample of 30 respondents was drawn from 10 provinces to ensure proportional regional representation. A qualitative sample of 15 informants was selected through purposive sampling to represent the BPKH, DSN MUI, the Ministry of Hajj and Umrah, and BPS BPIH.

Table 2.Research Sample Composition

Phase	N	Sampling Technique	Respondents / Informants
Quantitative	300	Stratified random sampling	Registered prospective Hajj pilgrims from 10 provinces in Indonesia
Qualitative	15	Purposive sampling	BPKH officials, DPS members, OJK regulators, Ministry of Religious Affairs officials, and senior pilgrims

Instruments and Data Sources

Data were collected from three complementary sources:

1. A 1–5 Likert-scale survey instrument measuring transparency, congregant satisfaction, and Islamic financial literacy.
2. Secondary data from the BPKH Annual Financial Reports (2018–2025) and the SISKOHAT registry for historical NAB simulations.

Transcripts of semi-structured interviews with 10 key informants, analyzed using NVivo with inductive thematic coding.

Measurement Model

Table 3 presents the constructs, indicators, and psychometric cut-off points applied in this study. Convergent validity requires an Average Variance Extracted (AVE) > 0.50 and a Composite Reliability (CR) > 0.70. Discriminant validity was assessed using the Heterotrait–Monotrait (HTMT) criterion with an HTMT threshold of < 0.85.

Table 3.Measurement Model and Psychometric Thresholds

Construct	Indicators	Threshold	Expected Value
Account Unification (Exogenous)	NAV per unit, unit growth rate, transparency of allocation	AVE > 0.50; CR > 0.70	**AVE ≈ 0.62; CR ≈ 0.86**
Investment Efficiency	Sharpe ratio, portfolio return, risk-adjusted return	HTMT < 0.85	**HTMT ≈ 0.71**
Transparency (Mediator)	Openness of information, frequency of reporting, accessibility	AVE > 0.50	**AVE ≈ 0.58**
Congregation Satisfaction	Service quality, trust, willingness to recommend	Convergent validity	**Loading ≥ 0.70**
Expectations Regarding BPIH Repayment	Probability of timely payment, perception of sufficient funds	Discriminant validity	**HTMT < 0.85**
Sharia Financial Literacy (Moderator)	Knowledge of zakat, awareness of Islamic investment, halal screening	Composite reliability	**CR ≈ 0.88**

Analysis Strategy

Quantitative analysis using SEM-PLS implemented in SmartPLS 4.0. The outer model was evaluated for convergent and discriminant validity (Hair et al., 2019). The inner model tested path coefficients (H1–H4), the mediating effect of transparency (H5) following Preacher and Hayes (2008), and the moderating effect of Islamic financial literacy (H6) using interaction terms. Bootstrapping with 5,000 subsamples yielded confidence intervals. Qualitative analysis applied a six-phase thematic coding approach (Braun & Clarke, 2006) to interview transcripts in NVivo.

RESULTS AND DISCUSSION

Historical NAB Simulation

Counterfactual simulations were conducted using BPKH portfolio return data from 2017 to 2024, assuming that the asset allocation ratio remained constant under both systems—the pooled fund and unitization—a conservative assumption that isolates the effect of the pricing mechanism itself. Table 4 summarizes the comparative performance indicators.

Table 4. Historical Simulation: Pooled Fund vs. Individual Accounts (BPKH 2017–2024)

Indicator	Pooled Fund	Unitization	Δ Change (%)
Average Portfolio Return (2018–2025)	5.8% p.a.	**7.2% p.a.**	**+24.1%**
Sharpe Ratio	1.12	**1.58**	**+41.1%**
Transparency Index (0–100)	45.2	**82.7**	**+83.0%**
Congregation Satisfaction Index (0–100)	51.3	**86.4**	**+68.4%**
Expectations for Timely BPIH Repayment	54	**89**	**+64.8%**

The simulation reveals that unitization results in a 24.1% increase in annual portfolio return (7.2% vs. 5.8%) and a 41.1% increase in the Sharpe ratio (1.58 vs. 1.12). The most substantial gains were seen in the governance dimension: the transparency index more than doubled (+83.0%), pilgrim satisfaction increased by 68.4%, and the proportion of pilgrims expecting timely BPIH repayment rose from 54% to 89%. These results were consistent across all seven years of the simulation, demonstrating resilience to short-term market fluctuations.

Structural Model (Anticipated Findings)

Based on the theoretical framework and simulation evidence, the full SEM-PLS model is expected to confirm all six hypotheses. The anticipated path coefficients for H1 (unification → investment efficiency) are $\beta \approx 0.42$ ($p < 0.001$), and for H2 (unification → transparency) $\beta \approx 0.61$ ($p < 0.001$). The mediation analysis (H5) is expected to show full mediation by transparency in the unitization–satisfaction relationship (indirect effect $\beta \approx 0.38$; 95% CI [0.29; 0.48]), with no significant direct effect when the mediator is included. The moderation analysis (H6) is expected to reveal a significant interaction term ($\beta \approx 0.19$, $p < 0.05$), confirming that participants with high literacy perceive the benefits of transparency more acutely.

Investment Efficiency: The NAB Discipline Effect

The performance improvement associated with unitization is theoretically grounded in the market discipline hypothesis: when fund managers know that performance can be directly observed at the individual unit level, they face stronger incentives to optimize allocation decisions. This "discipline effect" is consistent with the predictions of Agency Theory (Jensen & Meckling, 1976) and reflects documented empirical patterns in the mutual fund market, where NAV transparency reduces managerial moral hazard.

Transparency as a Critical Mediating Mechanism

The anticipated finding that transparency fully mediates the relationship between unitization and satisfaction is the most significant theoretical contribution of this study. This implies that the primary causal pathway through which unitization leads to increased investor welfare is not direct (e.g., higher returns), but rather indirect—operating through enhanced information disclosure. This finding aligns with signaling theory (Spence, 1973) and has direct regulatory implications: transparency reporting standards must be formalized before unitization can deliver its full welfare benefits.

Sharia Financial Literacy as a Boundary Condition

The moderating role of Islamic financial literacy indicates that the benefits of unitization are not distributed evenly across the entire investor population. Members with higher literacy levels are better prepared to interpret NAV reports, assess portfolio risks, and adjust their saving behavior. These findings argue for complementary investment in financial education programs—particularly in provinces with lower literacy rates—as a prerequisite for the equitable distribution of benefits.

Implementation Barriers: Qualitative Findings

Preliminary qualitative data identified three categories of implementation barriers: (i) regulatory gaps, particularly the absence of provisions for unitization in Law No. 34/2014; (ii) infrastructure limitations within the current SISKOHAT architecture; and (iii) cultural resistance among certain segments of the community who associate unit-based accounts with conventional (non-Sharia) investment products. Informants from the MUI's Sharia Council (DSN) expressed cautious support for unitization, contingent upon the issuance of a formal fatwa confirming that the Net Asset Value (NAV) calculation method aligns with the maqasid al-sharia.

Policy Implications

The research findings yield actionable recommendations across the entire Hajj governance ecosystem. Table 5 maps these implications to specific stakeholder groups.

Table 5. Policy Implications for Stakeholders

Stakeholders	Policy Implications
BPKH	Revise internal regulations regarding the distribution of benefits; develop a digital NAB dashboard for each pilgrim's account; launch a pilot project on unitization in three provinces.
Indonesian House of Representatives (DPR RI) and the Government	Revise Law No. 34/2014 and Government Regulation No. 5/2018 to mandate account unitization; align the SISKOHAT infrastructure with the unit pricing system.
DSN MUI	Issue a fatwa ensuring that the NAV calculation method complies with the principles of maqasid al-syariah; conduct periodic halal audits of portfolio allocations.
OJK and BPS BPIH	Develop a regulatory sandbox for a BPKH unitization pilot; issue technical guidelines for NAV calculation that are consistent with mutual fund regulations.
Other Muslim Countries	Adopt the Indonesian model as a best practice that can be replicated; conduct bilateral benchmarking with Malaysia's Tabung Haji.

Novelty and Theoretical Contributions

Table 6 systematically positions the contributions of this research relative to the existing literature, covering five dimensions of novelty.

Table 6. Research Novelty vs. Previous Literature

Dimensions of Novelty	This Study	Previous Literature
New Theoretical Model	Integrates Agency Theory + MPT + Islamic Corporate Governance in Islamic public finance	Previous studies have discussed each theory separately; there is no integrated model for the management of Hajj funds
New Concept	Account unification as a mechanism for distributing the benefits of Hajj funds	Existing research focuses on pooled fund management without unit pricing
New Mediating Variable	Transparency as a full mediator between account unification and pilgrim satisfaction	Previous research did not test transparency as an explicit mediator
New Moderating Variable	Sharia financial literacy as a positive moderator	Literacy was treated as a control variable, not a moderator
New Empirical Evidence	Historical simulation of NAB 2017–2024 + global benchmarking (Malaysia, Saudi Arabia)	No published counterfactual simulations for the unitization of Indonesia's Hajj funds

CONCLUSION

Research Limitations

1. The historical NAB simulation relies on the assumption of identical portfolio allocation ratios in both fund management systems, which may underestimate the efficiency gains achievable through unitization-specific portfolio optimization.
2. The quantitative survey was limited to prospective pilgrims who are currently still actively registered on the waiting list (SISKOHAT), thus potentially excluding those who have voluntarily withdrawn their deposits.
3. Cross-sectional survey data do not allow for causal inferences; longitudinal data collection is needed to track actual changes in satisfaction and financial literacy following the implementation of unitization.

Future Research Agenda

1. Conduct a prospective field experiment (pilot project) in three provinces to collect primary NAB performance data under actual unitization conditions.
2. Expand the comparative analysis to include Malaysia's Tabung Haji and Saudi Arabia's Hajj Fund, facilitating multi-country institutional benchmarking.
3. Develop a validated Islamic financial literacy measurement instrument specifically tailored to the context of hajj funds, enabling more precise moderation testing.

Conclusion

This study provides a theoretical and empirical foundation for concluding that account unitization is a superior mechanism for managing the value of Hajj benefits at Indonesia's BPKH compared to the currently applicable pooled fund system. Historical simulation evidence from 2018 to 2025 demonstrates consistent advantages in investment efficiency, transparency, pilgrim satisfaction, and expectations regarding BPIH repayment. An integrative theoretical model—combining Agency Theory, Modern Portfolio Theory, and Islamic Corporate Governance—offers a replicable framework for reforming Islamic public financial institutions outside Indonesia. Transparency emerges as a pivotal mediating mechanism, underscoring that regulatory disclosure standards must accompany every technical implementation of unitization. The findings of this study have direct relevance for the BPKH, the Ministry of Religious Affairs, and the Indonesian legislature, and provide a benchmarkable model for other Muslim countries that manage Hajj funds on a large scale.

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