

Transforming Zakat Fatwas to Strengthen Technopreneurship and Governance in Islamic Organizations

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Article Info

Article history:

Submission March 4, 2025

Revised April 29, 2025

Accepted February 23, 2026

Published May 15, 2026

Keywords:

Zakat Fatwa

Governance

Transformation

Technopreneurship

Sharia



ABSTRACT

This study examines how zakat fatwa transformation provides sharia foundations for technopreneurship development and governance strengthening in Indonesia following the enactment of Law No. 23/2011. Analyzing 56 fatwas through the Tawhidi String Relations (TSR) framework, the study reveals significant insights into organizational approaches, system evolution, and implementation outcomes. **The research** identifies different yet complementary strategies among Islamic organizations: Muhammadiyah exhibits progressive innovation ($\kappa = 0.88$) through the Manhaj Tarjih methodology, emphasizing modern economic instruments and digital integration; NU applies the Bahtsul Masail approach, upholding classical principles while adapting to regional contexts ($\kappa = 0.83$); and MUI focuses on national standardization ($\kappa = 0.87$), effectively integrating sharia compliance with modern governance frameworks. The effectiveness of fatwa implementation improved substantially, with scores rising from 0.56 (2012–2015) to 0.82 (2020–2024), reflecting the adoption of professional zakat practices, empowerment initiatives, and digital transformation. **These transformations** have fostered a zakat-based technopreneurship ecosystem through digital payment integration, productive distribution for MSME development, and mustahik entrepreneurship programs. Positive impacts are evident across key dimensions: enhanced sharia compliance (0.85), improved socio-economic development (0.76), and strengthened institutional governance (0.81). **The findings** highlight critical policy implications: enhancing sharia compliance, developing flexible regulatory frameworks, advancing digital zakat management, and strengthening monitoring mechanisms. **Overall, the study contributes** to the theoretical advancement and practical application of sustainable zakat governance while promoting technopreneurship innovation within modern Islamic contexts.

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DOI: <https://doi.org/10.34306/att.v8i2.650>

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1. INTRODUCTION

Zakat, as one of the five pillars of Islam, is a fundamental mechanism for poverty alleviation, income redistribution, and the promotion of social welfare within Muslim societies globally. In recent years, this Islamic financial instrument has gained increased attention as countries seek sustainable solutions to address economic inequality and social development challenges [1–4].

In Indonesia the country with the largest Muslim population globally zakat holds significant potential for reducing socio-economic disparities, with an estimated annual potential reaching Rp 327.6 trillion. However, the current collection rate only amounts to Rp 14.2 trillion in 2021, highlighting substantial challenges in implementation [5].

Effective zakat management requires a careful balance between Islamic principles and modern governance requirements. This duality has become increasingly complex amid rapid digitalization, regulatory reforms, and evolving socio-economic dynamics. The enactment of Law No. 23 of 2011 concerning Zakat Management [6] marked a significant milestone by reinforcing sharia compliance as a foundational principle (Article 2). This reform introduced essential elements, including the establishment of Sharia Supervisory Boards (DPS), a comprehensive regulatory framework, and regular sharia audits [7, 8].

Although zakat management presents an excellent opportunity to reduce socio-economic inequalities significantly, its success largely depends on aligning sharia principles with contemporary governance standards and addressing the evolving needs of society [9]. However, the Center for Strategic Studies of BAZNAS reported that the sharia compliance of zakat management organizations remains at an "adequate" level, suggesting considerable room for improvement in meeting modern governance expectations while preserving religious authenticity.

Muhammadiyah formulates fatwas using the Manhaj Tarjih approach, integrating three epistemological methods: bayani (textual), burhani (rational), and irfani (spiritual), resulting in innovative and progressive rulings. In contrast, [10] Nahdlatul Ulama (NU) applies the Bahtsul Masail mechanism, grounded in qauli (traditional scholars' opinions) and ilhaq (analogical extension) to maintain fidelity to classical jurisprudential traditions. Meanwhile, [11] the Indonesian Ulama Council (MUI) adopts a comprehensive methodology, synthesizing Muhammadiyah and NU approaches to produce fatwas oriented toward *maslahah* (public benefit) [12].

Although previous research has explored aspects of zakat management and fatwa development separately, significant gaps remain. These include:

- Limited analysis of the impact of Law No. 23/2011 on fatwa development and implementation;
- A scarcity of comparative studies on Islamic organizations' approaches to fatwa adaptation;
- A lack of quantitative assessments measuring fatwa implementation effectiveness;
- Limited application of the Tawhidi String Relations (TSR) framework in analyzing fatwa transformations.

This study addresses these gaps by analyzing the transformation of zakat fatwas issued between 2012 and 2024. It examines how Muhammadiyah, NU, and MUI have strengthened sharia compliance while developing more adaptive and sustainable zakat governance models. The research investigates the patterns of organizational approaches to sustainable zakat fatwa development and how fatwas have evolved to support sustainable governance over the past decade. Furthermore, it evaluates the impact of fatwa transformation on zakat sustainability across three dimensions: sharia compliance (spiritual), community empowerment (socio-economic), and institutional governance (systemic).

Employing the Tawhidi String Relations (TSR) framework introduced by [13] this study adopts a mixed methods approach, analyzing 56 zakat fatwas through content analysis and supporting the findings with quantitative statistical tools. It aims to provide deeper insights into how Islamic values are integrated with sustainability principles to construct a zakat system responsive to contemporary challenges without losing its spiritual and social essence.

In tandem with the acceleration of digital transformation, zakat has evolved beyond its traditional function as a social redistribution mechanism. It now serves as a foundation for building a technology-driven entrepreneurship ecosystem (technopreneurship). Digitalization initiatives including zakat applications, crowdfunding platforms, and technology enabled empowerment programs have fostered the economic independence

of mustahik (zakat beneficiaries). Consequently, this study not only investigates the transformation of zakat fatwas and sustainable governance but also explores their contribution to strengthening technopreneurship within Islamic organizations in Indonesia.

2. LITERATURE REVIEW

2.1. Tawhidi String Relations (TSR) Framework

Tawhidi String Relations (TSR) is a theoretical framework developed by [14, 15] rooted in the principle of tauhid (the Oneness of Allah) as the core foundation of all human activities, including knowledge creation, economic development, and social governance. TSR aims to integrate Islamic values with scientific approaches to establish sustainable, just, and holistic systems. At its core, TSR places tauhid as the epistemological foundation, emphasizing that all knowledge originates from Allah and is interconnected through the unity of knowledge.

Human actions, guided by divine principles, should aim to fulfill the objectives of Shariah (maqasid al-shariah), prioritizing justice, welfare, and collective good. In TSR, the Qur'an (Q) and the Sunnah of Prophet Muhammad (S) are the primary sources of knowledge (θ^*), developed through the collective deliberation of scholars (the suratic process) to produce knowledge relevant to contemporary needs. This process involves interaction, integration, and evolution (the IIE process) between revealed knowledge and human understanding (X), creating a reciprocal relationship (circular causation) that continuously renews solutions to societal challenges.

The knowledge generated aims to achieve a social welfare function ($W(\theta, X(\theta))$), wherein shariah understanding and worldly knowledge are integrated to enhance human well-being. Through this approach, TSR constructs a socio-scientific order centered on monotheism, positioning the Qur'an and Sunnah as the core of all scientific developments, continuing until the end of time [13, 15].

The TSR framework allows for a robust analysis of zakat fatwa transformations. In addition, the United Arab Emirates' experience in utilizing fatwas as a tool of soft power demonstrates how fatwas can address contemporary socio-economic needs and create relevant Islamic narratives [16].

2.2. Previous Studies

Previous research has explored various dynamics of fatwas in the Muslim world, including Indonesia, from multiple perspectives [17–22]. Based on [23] highlights the pluralism of zakat fatwas issued by Muhammadiyah, PERSIS, NU, and MUI between 1926 and 2011, demonstrating scholars' efforts to contextualize zakat practices while maintaining orthodoxy. This pluralism has led to diverse legal interpretations and the fragmentation of zakat practices. According to [24] examine the role of MUI fatwas in shaping public policy, tracing the evolution of fatwas from basic zakat principles during the New Order era to contemporary issues such as income zakat, corporate zakat, and zakat management during the pandemic in the post-reform era.

In the context of technology, the digital era (4.0) has encouraged zakat institutions to adopt platforms such as e-commerce and fintech. These innovations have triggered the development of adaptive fatwas to accommodate new income forms [25, 26]. However, zakat literacy remains a challenge, especially among the public and students, many of whom still understand zakat fiqh within a classical framework. Contemporary zakat literacy efforts are necessary to increase muzakki awareness and support mustahik welfare [27, 28].

Further research focusing on the role of zakat in achieving the Sustainable Development Goals (SDGs) has emphasized its strategic potential in advancing sustainable development. According to [29] found that Rumah Zakat's empowerment programs, such as Senyum Juara and Senyum Mandiri, have contributed significantly to economic prosperity through Islamic principles. Based on [30] highlight the alignment between BAZNAS programs and maqasid al-shariah priorities, particularly in poverty alleviation. According to [31] conducted a bibliometric analysis identifying four major research clusters linking zakat and the SDGs, including sustainable Islamic finance and human development indices.

Additionally, [32] emphasize that Islamic social finance, including zakat, can contribute to achieving 11 of the 17 SDGs by addressing post-pandemic social inequalities. As stated by [33] similarly found that Islamic social finance provides adequate resources for Muslim-majority countries to meet critical development goals. Collectively, these studies affirm the strategic role of zakat in promoting sustainable governance through an integrative approach based on fatwas and technology adaptation, particularly in Muslim-majority countries such as Indonesia [34].

3. MATERIALS AND METHODS

This study employed a mixed-methods approach to analyze the transformation of zakat fatwas into sustainable governance in Indonesia. Primary data consisted of 56 zakat fatwas issued by Muhammadiyah (18 fatwas), Nahdlatul Ulama (NU) (19 fatwas), and the Indonesian Ulema Council (MUI) (19 fatwas) during the 2012–2024 period. In-depth interviews were conducted with three representatives from the Fatwa Institutes, one BAZNAS commissioner, and two Islamic economic experts. Secondary data included official organizational documents, implementation reports, and observation findings. The data analysis combined qualitative and quantitative techniques. The qualitative study involved content analysis, the development of a coding scheme based on the TSR framework, and thematic analysis to identify cross-case patterns. Interviews were analyzed through transcription, thematic coding, and cross-validation with organizational documents.

Quantitative analysis utilizes statistical tests such as chi-square tests, regression analysis, ANOVA, and performance metric assessments to compare organizations and observe temporal trends.

The TSR framework was applied across three analytical dimensions: interaction assessing fatwa dialogue, innovation adoption, and responsiveness to change; integration evaluating sharia compliance, modern governance adoption, and digital transformation; and evolution analyzing the impact, performance trends, and sustainability outcomes. Validity and reliability were ensured through triangulation of data sources, member checking, expert validation, and inter rater reliability testing. Ethical research procedures were maintained, including obtaining informed consent, protecting confidentiality, and ensuring data security.

4. RESULT AND DISCUSSION

4.1. Results

4.1.1. Qualitative Analysis

The zakat fatwas of Muhammadiyah, NU, and MUI between 2012 and 2024 were collected from various sources [35–40].

4.1.2. Coding Analysis

These fatwas were thematically analyzed and grouped into three main aspects: zakat collection, distribution, and management. Collection-related fatwas were further categorized into zakat fitrah and zakat mal, with zakat mal subdivided into professional zakat and other zakat objects.

Table 1. Results of Coding Scheme Fatwa Zakat 2012 - 2024

Fatwa Categories	Dominant Approach	Frequency	(κ) (Kappa)
Zakat Fitrah	Traditional - Adaptive	11	0.88
Zakat Profesi	Progressive - Innovative	9	0.85
Other zakat objects	Moderate - Inclusive	12	0.83
Distribution	Productive - Empowerment	11	0.87
Management	Standardization - Digital	13	0.84

Source: Author's analysis

The coding analysis in Table 1 yielded inter-coder reliability scores (κ) ranging from 0.83 to 0.88, indicating high consistency across all categories. The frequency distribution shows 11 fatwas for zakat fitrah, 9 for professional zakat, 12 for other zakat objects, 11 for distribution aspects, and 13 for management aspects.

4.1.3. Interview Results

Based on interviews with key informants, the following synthesis was obtained, the responses demonstrate how each institution interprets and applies zakat fatwas using distinct methodological approaches rooted in Islamic jurisprudence, such as *ijtihad*, *madhhab* traditions, and contemporary contextualization. These insights not only reflect the diversity of fatwa development across Muhammadiyah, NU, and MUI, but also reveal shared themes such as innovation, local adaptation, and institutional efforts toward standardization and governance. Moreover, the informants identified recurring challenges in aligning religious doctrines with modern socio-economic conditions, technological changes, and the need for regulatory harmonization [41]. The table below summarizes these findings by outlining the roles of each informant, their methodological approaches, thematic priorities, and the challenges faced in sustaining effective and contextually relevant zakat fatwas. Notably, the institutions are also navigating the tension between textual fidelity and practical implementation in

diverse community settings. This balancing act requires continuous dialogue between religious scholars, policy makers, and practitioners to ensure both legitimacy and responsiveness. Such interaction underscores the evolving nature of zakat fatwas as living instruments shaped by dynamic socio-religious realities.

Table 2. Summary of Interview Results with Key Informants

Informant	Methodological Approach	Main Theme	Challenge
Board of the Muhammadiyah Tarjih and Tajdid Council	Innovation of <i>ijtihad</i> -based fatwas using <i>bayani</i> , <i>burhani</i> , and <i>irfani</i> methods	<i>Manhaj</i> Tarjih-based Fatwa Innovation	Harmonization with the modern context
Chairman of the NU Bahtsul Masail Council	Guided by four schools of thought using <i>qauli</i> , <i>manhaji</i> , and <i>ijtihadi</i> methods	Strengthening the <i>fiqh</i> tradition	Locality adaptation
Secretary of the MUI Fatwa Commission	Combining classical and modern methods (<i>istinbath</i> , <i>maslahah mursalah</i> , etc.)	Standardization of national fatwas	Regulatory harmonization
BAZNAS Commissioner	Fatwa transformation for socio-economic empowerment	Implementation of fatwa-based programs	The gap between fatwa and practice
Islamic Economics Expert (1)	Flexibility of fatwas and strengthening Sharia Supervisory Boards (DPS)	Sharia compliance	DPS Supervision
Islamic Economics Expert (2)	Fatwas as guidelines for local wisdom adaptation	Harmonization of fatwas	Fragmentation of fatwa interpretation in the field

Source: Author's analysis

The interviews in Table 2 confirmed distinct yet complementary strategies among Islamic organizations and zakat authorities in fatwa development and implementation.

4.1.4. Thematic Analysis of Fatwas

These thematic developments are summarized in Tables 3 to 7 below, categorized by the object and dimension of zakat fatwas [42]. For clarity, each fatwa is labeled with a short code based on its thematic classification: ZF for zakat fitrah, PZ for professional zakat, OZ for other zakat objects, DM for distribution mechanisms, and ZM for zakat management.

Table 3. Zakat Fitrah Fatwas

Fatwa Code	Institution	Key Issue	Transformation Summary
ZF01	Muhammadiyah	Distribution Time Flexibility	Allows earlier/later distribution under special conditions
ZF02	NU	Local Rice vs. Market Price	Adapts zakat fitrah value to local economic standards
ZF03	MUI	National Standardization	Establishes unified national guidelines on type and quantity

The Table 3 presents key zakat fitrah fatwas from Muhammadiyah, NU, and MUI, highlighting how each institution addresses specific issues such as distribution timing, local price standards, and national standardization [43]. These fatwas reflect efforts to adapt zakat practices to local contexts while ensuring sharia compliance. By responding to practical challenges in zakat implementation, each institution contributes to the

formulation of more flexible and context-sensitive fatwa frameworks, enhancing the relevance and applicability of zakat fitrah in diverse socio-economic settings.

Table 4. Professional Income Fatwas

Fatwa Code	Institution	Profession Type	Fatwa Summary
PZ01	Muhammadiyah	Freelancers / Independent Workers	Declares that income earned from freelance work is subject to <i>zakat profesi</i> obligations
PZ02	NU	Online Entrepreneurs	Adapts classical zakat principles to income from digital and online businesses
PZ03	MUI	Civil Servants (PNS)	Issues technical guidelines for calculating zakat on monthly salary income

This Table 4 summarizes professional income fatwas by Muhammadiyah, NU, and MUI, addressing zakat obligations for various professions [44]. Each fatwa contextualizes zakat principles for modern income sources such as freelance work, online business, and civil service salaries.

Table 5. Other Zakat Objects Fatwas

Fatwa Code	Institution	Zakat Object	Fatwa Summary
OZ01	Muhammadiyah	Stocks & Bonds	Applies zakat to capital gains from financial assets
OZ02	NU	Digital Business Income	Interprets digital earnings using classical jurisprudence
OZ03	MUI	Agricultural Commodities	Updates calculation thresholds and categories

Table 5 highlights fatwas related to non-traditional zakat objects, including financial assets, digital income, and agricultural commodities. These fatwas demonstrate how Islamic institutions adapt zakat rulings to evolving economic activities and asset types while maintaining alignment with classical jurisprudence [45].

Table 6. Distribution Mechanisms

Fatwa Code	Institution	Method	Transformation Summary
DM01	Muhammadiyah	Productive Distribution	Supports zakat use for MSME empowerment
DM02	NU	Community-based	Prioritizes local wisdom in allocation
DM03	MUI	Hybrid Model	Combines consumption and productive distribution schemes

Table 6 outlines zakat distribution mechanisms employed by Muhammadiyah, NU, and MUI. Each institution adopts distinct approaches productive, community based, and hybrid to align distribution with socio-economic empowerment and local values. Muhammadiyah promotes a productive model that supports the economic empowerment of mustahik through micro enterprise initiatives. NU emphasizes a community-based approach rooted in local wisdom and participatory distribution [46]. Meanwhile, MUI adopts a hybrid model that balances consumptive needs with long-term empowerment strategies. These variations reflect each institution's efforts to respond to contextual challenges while maintaining sharia principles in optimizing the impact of zakat. In doing so, these distribution mechanisms also illustrate how zakat is increasingly seen not only

as a tool for poverty alleviation, but also as an instrument for systemic socio-economic transformation [47]. By incorporating local contexts, economic needs, and institutional strengths, the fatwas on zakat distribution contribute to a more integrated and sustainable zakat governance model in Indonesia [48].

Table 7. Zakat Management Fatwas

Fatwa Code	Institution	Management Focus	Fatwa Summary
ZM01	Muhammadiyah	Digital Payment Systems	Encourages integration with fintech and zakat apps
ZM02	NU	Institutional Collaboration	Recommends cooperation between local and national zakat bodies
ZM03	MUI	Standardization & Audit	Emphasizes transparent reporting and sharia compliance

Table 7 presents fatwas related to zakat management practices, focusing on digital integration, institutional collaboration, and governance standardization. These initiatives reflect growing efforts to modernize zakat administration while preserving sharia principles.

Across these categories, the analysis highlighted significant innovations, including flexibility in zakat fitrah distribution timing, adaptation of professional zakat calculations to modern professions, zakat application to contemporary financial instruments (stocks, digital economy actors), expansion of zakat utilization for public infrastructure, and digitalization initiatives in zakat management practices.

4.2. Quantitative Analysis

The quantitative analysis aimed to compare the zakat fatwa transformation patterns among Muhammadiyah, NU, and MUI between 2012 and 2024. This analysis utilized chi-square tests, regression analysis, ANOVA, and program effectiveness metrics.

4.2.1. Chi-Square Analysis

The chi-square test results showed a significant association between the organizational background (Muhammadiyah, NU, MUI) and the innovation characteristics of zakat fatwas ($\chi^2 = 18.20$, $df = 8$, $p = 0.02$). Muhammadiyah's fatwas demonstrated higher levels of innovation and adaptability compared to NU and MUI. The innovation orientation index, based on qualitative coding, revealed:

- Muhammadiyah: 0.78
- NU: 0.66
- MUI: 0.70

These findings suggest that Muhammadiyah has a stronger propensity toward progressive fatwa transformation, while NU tends to be more conservative in adapting to contemporary needs [49].

4.2.2. Regression Analysis

Regression analysis was conducted to assess the factors influencing the effectiveness of fatwa implementation. Variables included sharia compliance level, governance system maturity, innovation orientation, and digital transformation integration. The model summary showed:

- Adjusted $R^2 = 0.68$
- $F(4, 51) = 30.75$, $p < 0.001$

Sharia compliance level ($\beta = 0.42$, $p < 0.001$) and digital transformation integration ($\beta = 0.36$, $p = 0.002$) were the two strongest predictors of effective fatwa implementation, indicating that both spiritual authenticity and technological adaptation are key drivers of sustainable governance [49].

4.2.3. ANOVA Analysis

One-way ANOVA tests confirmed statistically significant differences among organizations in fatwa transformation effectiveness ($F(2, 53) = 8.57, p = 0.001$). Post-hoc comparisons using the Tukey HSD test indicated that Muhammadiyah significantly differed from NU ($p = 0.003$) but not from MUI ($p = 0.122$). This suggests that Muhammadiyah's innovative fatwa development had a statistically measurable impact compared to NU, while the difference between Muhammadiyah and MUI was less pronounced [49].

4.2.4. Program Effectiveness Analysis

The effectiveness of zakat fatwa-based programs was evaluated based on three key indicators:

- Sharia compliance: 0.85
- Socio-economic empowerment: 0.76
- Institutional governance strengthening: 0.81

These indicators showed substantial progress between 2012–2015 and 2020–2024, with significant improvements in professional zakat adaptation, productive zakat empowerment programs, and digital zakat management systems.

4.3. TSR Framework Analysis

Applying the Tawhidi String Relations (TSR) framework allowed the analysis of fatwa transformations through three interrelated dimensions: interaction, integration, and evolution [50].

4.3.1. Interaction

Fatwa's development demonstrated an increase in interaction with contemporary socio-economic realities. Muhammadiyah's fatwas exhibited high responsiveness to digital economy phenomena, such as the classification of online businesses, freelancers, and gig economy workers under professional zakat obligations. NU maintained interaction by contextualizing fatwas through *Bahtsul Masail*, ensuring adaptability to local conditions. MUI's fatwas increasingly engaged with national economic and technological developments through standardization efforts and cooperation with regulatory bodies [46].

4.3.2. Integration

Integration was evident in the blending of classical Islamic jurisprudence with modern governance standards. Muhammadiyah effectively integrated *ijtihad* methods with modern instruments like financial technology (fintech) platforms and digital zakat payment systems [51]. NU showed selective integration, maintaining adherence to classical *fiqh* while adopting certain digital mechanisms, particularly for zakat distribution. MUI's integration approach focused on ensuring compliance with national regulatory standards while preserving sharia authenticity.

4.3.3. Evolution

Fatwas evolved from traditional zakat rulings toward more adaptive and sustainable governance models. The evolutionary trend was reflected in the increased acceptance of digital transactions, professional zakat recalculations, productive zakat programs, and institutional governance improvements [49]. The evolutionary trajectory followed the IIE (Interaction–Integration–Evolution) process outlined in the TSR framework, emphasizing a continuous renewal of Islamic rulings in response to emerging societal needs while upholding tawhidic principles [52].

4.4. Discussion

The findings of this study confirm that the transformation of zakat fatwas in Indonesia after the enactment of Law No. 23 of 2011 has strengthened sustainable and sharia-compliant governance [53]. The analysis reveals that different Islamic organizations have adopted distinct approaches yet collectively contributed to the advancement of zakat governance models aligned with contemporary needs.

Muhammadiyah's approach, characterized by innovation and the adoption of modern economic instruments, demonstrates how progressive *ijtihad* methodologies can promote adaptive fatwa development while maintaining strong sharia principles [54]. NU's approach, emphasizing traditional jurisprudence while selectively adapting to local socio-economic conditions, reflects the importance of contextual sensitivity in fatwa

issuance. MUI's emphasis on national standardization highlights the role of centralized fatwa authority in ensuring harmonization across a diverse Muslim population.

The empirical findings such as the significant improvement in fatwa implementation effectiveness (from 0.56 to 0.82) and the positive impacts across sharia compliance (0.85), socio-economic empowerment (0.76), and institutional governance (0.81) demonstrate the critical role of fatwa transformation in strengthening zakat systems. These results are consistent with previous studies highlighting the strategic potential of zakat in advancing sustainable development goals [31–33, 35, 36].

The chi-square, regression, and ANOVA analyses further support the proposition that organizational orientation (innovative vs. traditional) and the integration of digital transformation significantly influence the success of fatwa implementation. Muhammadiyah's statistically higher innovation index compared to NU underlines the impact of proactive fatwa development on organizational effectiveness [55]. Applying the TSR framework enables a deeper understanding of the dynamic interaction between Islamic normative values and socio-economic realities [56]. The interaction–integration–evolution (IIE) process observed in this study underscores that zakat fatwa development must not remain static but must continuously evolve in response to changing societal contexts while remaining grounded in the tawhidic worldview [57].

Furthermore, the digitalization of zakat management including the use of mobile zakat apps, online payment gateways, and crowdfunding platforms has opened new opportunities for zakat-based technopreneurship [58]. By integrating sharia compliance with digital innovation, Islamic organizations can create sustainable entrepreneurship ecosystems that empower mustahik economically while expanding the reach and effectiveness of zakat distribution [59, 60].

However, challenges persist. Regulatory harmonization across national and regional levels remains incomplete [61]. Public zakat literacy, especially regarding professional zakat and digital zakat instruments, needs further enhancement [62]. Moreover, strengthening the capacity of Sharia Supervisory Boards (DPS) and zakat institutions to oversee compliance and innovation is crucial for sustaining momentum [63].

In conclusion, the transformation of zakat fatwas represents not merely a legal or religious adaptation but a broader systemic evolution toward sustainable governance and technopreneurship [64]. Islamic organizations must continue to balance religious authenticity with proactive innovation to ensure that zakat fulfills its spiritual mission while maximizing its social and economic potential in the digital era.

5. MANAGERIAL IMPLICATIONS

The results of this study offer key managerial insights for zakat institutions and Islamic organizations. The transformation of zakat fatwas highlights the need for leadership that integrates sharia principles with digital innovation. Managers must support the use of fintech, zakat apps, and online payment systems to improve operational efficiency and align with modern fatwa developments. Zakat is evolving from a redistributive tool into a foundation for technopreneurship, requiring strategies that empower mustahik through technology-based economic programs.

Ensuring fatwa harmonization with national regulations is also critical. Organizational leaders must coordinate with Sharia Supervisory Boards and policy bodies to bridge the gap between religious rulings and field implementation. Enhancing managerial capacities especially in fiqh literacy, digital tools, and governance is essential for effective program delivery. In addition, zakat institutions should adopt data-driven evaluation systems to track sharia compliance, socio-economic impact, and institutional performance.

Lastly, fostering partnerships with financial institutions, tech companies, and academic bodies can support innovation and expand the reach of zakat. Through these efforts, Islamic organizations can strengthen sustainable zakat governance that is both sharia-compliant and responsive to modern needs.

6. CONCLUSION

This study confirms that the transformation of zakat fatwas among Muhammadiyah, NU, and MUI from 2012 to 2024 has significantly strengthened sustainable and sharia-compliant governance in Indonesia. Fatwa innovations have enabled Islamic organizations to adapt more effectively to contemporary socio-economic realities while maintaining fidelity to Islamic principles.

The application of the Tawhidi String Relations (TSR) framework revealed a dynamic process of interaction, integration, and evolution in fatwa development. This dynamic aligns religious authenticity with technological and governance innovations, fostering the creation of a zakat-based technopreneurship ecosys-


tem. Digitalization initiatives, professional zakat recalibrations, productive zakat programs, and strengthened governance structures demonstrate how fatwa transformations have advanced both spiritual and developmental objectives.


However, challenges remain, including the need for more substantial regulatory harmonization, improved public zakat literacy, and enhanced institutional capacity for innovation and compliance. Future efforts should focus on building adaptive, technology-enabled zakat ecosystems that uphold sharia principles while addressing contemporary development needs. Overall, the findings contribute to the theoretical development and practical application of zakat governance models, offering valuable insights for Islamic organizations, policymakers, and researchers seeking to balance religious authenticity with proactive innovation in the digital era.

7. DECLARATIONS

7.1. About Authors

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7.2. Author Contributions

Conceptualization: EJ; Methodology: HL; Software: RR; Validation: EJ and HL; Formal Analysis: HL and RR; Investigation: RR; Resources: EJ; Data Curation: HL; Writing Original Draft Preparation: EJ and RR; Writing Review and Editing: RR and EJ; Visualization: EJ; All authors, EJ, HL, and RR, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on Zenodo Repository: doi.org/10.5281/zenodo.18754056.

7.4. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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