

Opportunities and Challenges in The Digital Transformation of Zakat Management in East Kalimantan

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Abstract

Zakat plays a central role in Islamic finance as a tool for promoting social justice, equitable wealth distribution, and poverty alleviation. In recent years, the rapid advancement of digital technologies has influenced various sectors, including zakat management, offering opportunities to enhance transparency, efficiency, and accessibility in the collection and distribution of zakat funds. This study aims to analyze the opportunities and challenges associated with the digital transformation of zakat management in East Kalimantan, Indonesia. It seeks to understand how digital innovation can strengthen zakat governance while addressing the socio-technical and regulatory barriers that accompany this transformation. A qualitative research design was employed, combining semi-structured interviews, document analysis, and direct observation of local zakat institutions, policymakers, and technology partners. Data were thematically analyzed to identify emerging patterns in digital adoption, institutional readiness, and operational challenges. The findings reveal that while several zakat institutions in East Kalimantan have begun adopting digital tools such as e-payment systems, online platforms, and digital reporting, the implementation remains uneven across regions. Major opportunities lie in the use of financial technology (fintech) to improve efficiency and accountability. However, obstacles persist, including limited digital literacy among staff, inadequate infrastructure, and the absence of a comprehensive regulatory framework to govern digital zakat operations. The study concludes that digital transformation presents a promising avenue to modernize zakat management and improve governance outcomes. To realize its full potential, zakat institutions and policymakers must invest in capacity building, develop integrated digital platforms, and strengthen regulatory and Sharia-compliant oversight mechanisms.

Keywords: Digital Zakat, Islamic Finance, Fintech, Zakat Governance, Digital Transformation

A. INTRODUCTION

Zakat is one of the five pillars of Islam and plays a vital role in the Islamic economic system. Literally meaning "purification" or "growth," zakat serves to purify one's wealth from elements of injustice and greed. (Lisdariani¹, et al., (2025)).

It is obligatory for every Muslim who meets certain criteria, representing a moral and social obligation to help those in need (Ali, 2015).

In verses of the Qur'an about obligation paying zakat is available in QS. Al-Baqarah: 43 which means : following :

Meaning: "And establish prayer , pay zakat, and bow with those who bow." (QS. Al- Baqarah: 43).

In the Islamic economic system, zakat functions as an instrument for wealth redistribution. (Nurhaliza, S., et al. 2025). By collecting zakat from financially well-off individuals and distributing it to those in need, zakat helps reduce economic disparities and improve societal welfare. (Herianingrum , S., et al. , (2024). It also contributes to social stability by providing support to vulnerable groups, such as the poor, the needy, and orphans (Bashir, 2016). In addition, zakat can be used to fund social and economic projects that benefit the community, such as education and health (Hassan & Ali, 2019; Mat Daud, MS, & Wahid, H. (2025).

Effective zakat management is crucial to ensure that zakat funds are properly managed and utilized optimally. Good zakat management includes transparent collection, distribution, and reporting processes. With effective management, zakat institutions can ensure that collected funds reach those in need and are used for their intended purposes (Syed Yusuf, S. Er., et al. (2024).

One of the challenges in zakat management is the lack of transparency and accountability, which can erode public trust in zakat institutions. Therefore, it is crucial for zakat organizations to implement sound management practices, including the use of technology to increase efficiency and transparency (Zain & Rahman, 2020).

Digital transformation presents significant opportunities to improve zakat management. (Alshehadeh , AR, et al. , 2024, Nor, SM, et al. , 2024).).

By utilizing digital technology, zakat institutions can optimize the zakat collection and distribution process. For example, the use of mobile applications and online platforms can facilitate fast and secure donations from contributors (Khan et al., 2021). Furthermore , technologies such as blockchain can increase transparency and accountability in zakat fund management (Alharbi , 2020).

Digitalization also enables zakat institutions to collect better data on zakat recipients and community needs. With accurate data, zakat organizations can design more effective and targeted programs. (Syed Yusuf, SN, et al. (2024).

In addition, digitalization can help increase public awareness about the importance of zakat and encourage more people to participate in zakat programs (Sulaiman & Rahman, 2021). Challenges Faced in Zakat Management East Kalimantan, like many other regions, faces several specific challenges that hinder its effectiveness and impact. These challenges include:

1. Lack of Awareness and Understanding: Many individuals in East Kalimantan may not fully understand the concept of zakat, its importance, and the mechanism of giving. (Zakiy, FS, et al., (202, Purwatiningsih, A., et al2024). This lack of awareness can lead to lower levels of participation in zakat contributions, which ultimately affects the funds available for distribution to those in need.
2. Inefficient Collection and Distribution Processes: Traditional methods of zakat collection and distribution can be cumbersome and inefficient. Many zakat institutions rely on manual

- processes, which can lead to delays, errors, and mismanagement of funds. These inefficiencies can erode the trust of potential donors and beneficiaries in the zakat system.
3. **Transparency and Accountability Issues:** There is often a lack of transparency in how zakat funds are managed and distributed. Donors may be concerned about whether their contributions are being used effectively, and beneficiaries may lack clear information on how to access zakat assistance. This lack of accountability can erode public trust in zakat institutions.
 4. **Limited Data and Analytics:** Many zakat institutions lack access to comprehensive data on zakat recipients and community needs. This limitation makes it difficult to design targeted programs that effectively address specific community needs. Without accurate data, zakat distribution may not reach the most vulnerable populations.
 5. **Regulatory and Institutional Challenges:** Zakat management in East Kalimantan may also face regulatory barriers and institutional fragmentation. Different organizations may have varying standards and practices, leading to inconsistencies in zakat management and distribution.

Given these challenges, there is an urgent need for digital solutions to improve zakat management in East Kalimantan. Digital transformation can address many of the challenges currently faced by zakat institutions:

1. **Increase Awareness and Engagement:** Digital platforms, such as mobile apps and websites, can be used to educate the public about zakat, its significance, and how to contribute. These platforms can also facilitate engagement by providing easy access to zakat information and donation options.
2. **Streamline Collection and Distribution:** Digital solutions can automate the collection and distribution process, making it more efficient. Online donation systems can simplify the giving process, while digital tracking systems can ensure that funds are allocated and distributed on time.
3. **Increasing Transparency and Accountability:** The implementation of digital tools can increase transparency in zakat management. Blockchain technology, for example, can provide a secure and immutable record of transactions, allowing donors to track how their contributions are used. This transparency can help build trust between zakat institutions and the community.
4. **Data-Driven Decision-Making:** Digital solutions can enable zakat institutions to collect and analyze data on recipients and community needs. With access to accurate data, organizations can design targeted programs that effectively address the specific challenges faced by vulnerable populations.
5. **Strengthening the Institutional Framework:** Digital platforms can facilitate collaboration between various zakat institutions and stakeholders, promoting a more coordinated approach to zakat management. This collaboration can help standardize practices and improve overall effectiveness.

In conclusion, addressing the challenges faced in zakat management in East Kalimantan requires innovative digital solutions. By leveraging technology, zakat institutions can improve their operations, increase transparency, and ultimately enhance the impact of zakat on the community.

The research objectives provide a clear framework for this study, guiding the investigation of the digital transformation of zakat management in East Kalimantan. The following outlines the specific objectives of this study:

1. **Analyzing the Current State of Zakat Management in East Kalimantan**

This study aims to assess existing zakat management practices and frameworks in East Kalimantan. This involves examining how zakat is currently collected, distributed, and monitored by regional zakat institutions. The analysis will cover:

Evaluation of Current Practices: Investigating the methodologies used by zakat institutions, including the process of collecting zakat from donors and the criteria used to distribute it to beneficiaries.

Effectiveness Assessment: Evaluate the effectiveness of current zakat management practices in meeting community needs and achieving the desired social impact.

Stakeholder Identification: Identify key stakeholders involved in zakat management, including government agencies, non-governmental organizations (NGOs), and community leaders, and understand their roles and contributions.

By analyzing the current state of zakat management, this research will provide a comprehensive understanding of the strengths and weaknesses of existing practices, laying the groundwork for further exploration of digital transformation opportunities.

This objective focuses on exploring how digital technology can improve zakat management in East Kalimantan. This research will investigate various digital tools and platforms that can be utilized to increase the efficiency and effectiveness of zakat collection and distribution. Key areas of exploration will include:

- a. **Technology Innovation:** Identify specific digital solutions, such as mobile apps, online donation platforms, and data analytics tools, that can streamline the zakat process.
- b. **Increasing Accessibility:** Examining how digital transformation can make zakat more accessible to donors and beneficiaries, thereby increasing participation and engagement in zakat programs.
- c. **Increasing Transparency and Accountability:** Analyzing how digital tools can increase transparency in zakat management, enabling stakeholders to track the flow of funds and ensure accountability in the use of zakat resources.

By identifying these opportunities, this study aims to highlight the potential benefits of adopting digital technology in zakat management, ultimately contributing to more effective and impactful zakat practices.

This objective seeks to understand the barriers and challenges that zakat institutions may face when implementing digital transformation initiatives. Recognizing these challenges is crucial for developing strategies to address them. Areas of focus will include:

- a. **Resistance to Change:** Investigate potential resistance from stakeholders, including zakat administrators and donors, who may be hesitant to adopt new technologies or change established practices.
- b. **Technical and Infrastructure Limitations:** Assess technical challenges associated with implementing digital solutions, such as inadequate infrastructure, lack of technical expertise, and cybersecurity issues.
- c. **Regulatory and Compliance Issues:** Explores regulatory barriers that zakat institutions may face in adopting digital technologies, including compliance with Islamic law and local regulations.

The significance of this study on "Opportunities and Challenges of Digital Transformation of Zakat Management in East Kalimantan" extends to various stakeholders, including policymakers, zakat institutions, and the wider community. Each of these groups benefits from the insights and findings of this study in different ways.

For policymakers, this research provides important insights into how digital transformation can improve the effectiveness of zakat management. By understanding the opportunities and challenges associated with digitalization, policymakers can develop supporting frameworks and regulations that facilitate technology adoption in zakat institutions. This could lead to:

- a. **Enhanced Regulatory Framework:** Policymakers can create guidelines that promote transparency, accountability, and efficiency in zakat management through digital means.
- b. **Resource Allocation:** Insights from this research can help policymakers allocate resources more effectively to support zakat institutions in their digital transformation efforts.
- c. **Social Welfare Programs:** By recognizing the role of zakat in poverty alleviation and community development, policymakers can integrate zakat into broader social welfare strategies, increasing its impact on society.

Zakat institutions are at the forefront of zakat management, and this research is highly relevant to them in several ways:

- a. **Improving Operational Efficiency:** These findings can guide zakat institutions in adopting digital tools and technologies that streamline their operations, from collection to distribution.
- b. **Increased Transparency and Trust:** By implementing digital solutions, zakat institutions can increase transparency in their operations, thereby increasing public trust and encouraging more individuals to contribute.
- c. **Data-Driven Decision Making:** This study emphasizes the importance of data collection and analysis, enabling zakat institutions to make informed decisions about resource allocation and program design based on community needs.

The wider community, including zakat recipients and potential donors, also benefit from the findings of this study:

- a. **Empowering Beneficiaries:** By increasing the efficiency and effectiveness of zakat distribution through digital means, recipients can receive timely and adequate support, improving their quality of life.
- b. **Increased Participation:** As zakat institutions adopt user-friendly digital platforms, more individuals can be encouraged to participate in zakat giving, fostering a culture of generosity and social responsibility in the community.
- c. **Awareness and Education:** This research can serve as a resource to raise awareness about the importance of zakat and its role in community development, thereby educating the community on how they can contribute to social welfare through zakat.

In summary, this research has significant relevance for policymakers, zakat institutions, and the wider community. By exploring the opportunities and challenges of digital transformation in zakat management, this research aims to contribute to the development of effective strategies that enhance the impact of zakat on social welfare and economic development in East Kalimantan, Indonesia. The insights gained can lead to more informed decision-making, better practices, and ultimately, stronger and more resilient communities.

B. LITERATURE REVIEW

Digital transformation refers to the integration of digital technologies into all areas of a business or organization, fundamentally changing the way it operates and delivers value to customers. In the context of financial management, digital transformation encompasses a range of theories and frameworks that explain how organizations can leverage technology to improve their operations, increase efficiency, and create new value propositions.

1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a widely used theoretical framework that explains how users accept and use new technologies. Developed by Davis (1989), TAM argues that perceived ease of use and perceived usefulness significantly influence users' decisions to adopt technology. In the context of zakat management, understanding the factors influencing the acceptance of digital platforms by both zakat institutions and donors is crucial for successful implementation (Davis, 1989; Venkatesh & Davis, 2000).

2. Diffusion of Innovation Theory

The Diffusion of Innovation Theory, proposed by Rogers (1962), explains how, why, and at what rate new ideas and technologies spread. This theory is particularly relevant in understanding how digital transformation initiatives in zakat management can be adopted by various stakeholders. Factors such as the perceived benefits of digital solutions, compatibility with existing practices, and technological complexity play a crucial role in the adoption process (Rogers, 2003).

3. Resource-Based View (RBV)

The Resource-Based View (RBV) is a management theory that emphasizes the importance of valuable, rare, inimitable, and non-substitutable resources in achieving competitive advantage. In the context of zakat management, digital technology can be viewed as a strategic resource that improves operational efficiency and service delivery. By utilizing digital tools, zakat institutions can improve resource allocation, increase transparency, and better meet the needs of beneficiaries (Barney, 1991; Hibah, 1991).

4. Dynamic Capabilities Framework

The Dynamic Capabilities Framework, introduced by Teece et al. (1997), focuses on an organization's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. In the context of zakat management, this framework highlights the importance of developing digital capabilities that enable organizations to adapt to technological advances and changing donor expectations. By cultivating dynamic capabilities, zakat institutions can enhance their responsiveness and innovation in service delivery (Teece, 2007).

5. Service Dominant Logic (SDL)

Service-Dominant Logic (SDL) is a theoretical framework that shifts the focus from goods to services in understanding value creation. According to Vargo and Lusch (2004), value is co-created through interactions between providers and consumers. In the context of zakat management, adopting an SDL perspective emphasizes the importance of involving donors and beneficiaries in the digital transformation process. This approach can lead to improved service delivery and greater satisfaction among stakeholders (Vargo & Lusch, 2008).

Existing Research on Zakat Management Practices and Digitalization Efforts in Other Regions. Research on zakat management has grown significantly over the years, reflecting its growing importance as a tool for poverty alleviation and economic development in Islamic societies. Scholars have explored various aspects of zakat management, including its effectiveness, transparency, challenges, and the role of technology in improving the process. Below is a summary of key findings from previous research:

1. Zakat Management Practices

Several studies have examined traditional zakat management practices, focusing on how zakat institutions collect, distribute, and monitor zakat funds. These studies highlight the following key points:

- a. **Efficiency and Effectiveness:** Research by Mohammed (2018) emphasizes that efficient zakat management is crucial to ensuring that zakat funds reach their intended beneficiaries. However, many zakat institutions face challenges such as limited resources, a lack of skilled personnel, and inefficient administrative systems, which hinder their ability to maximize the impact of zakat.

- b. **Transparency and Accountability:** Transparency is a recurring theme in studies of zakat management. Zain & Rahman (2020) found that the lack of clear reporting mechanisms and accountability frameworks often leads to mistrust among donors. This problem is particularly prevalent in areas where zakat institutions operate without regulations or standard oversight.
- c. **Community Involvement:** Studies such as Bashir (2016) have shown that community involvement in zakat management can significantly increase its effectiveness. By involving local communities, zakat institutions can better understand the needs of beneficiaries and design targeted programs.

2. Challenges in Zakat Management

Previous research has identified several challenges faced by zakat institutions, including:

- a. **Low Awareness and Participation:** Sulaiman & Rahman (2021) found that public awareness of the obligation of zakat and its benefits remains low in many regions. This results in limited participation and reduced zakat collection.
- b. **Administrative Inefficiencies:** Studies such as Hassan & Ali (2019) , highlight that many zakat institutions rely on outdated administrative systems, which leads to delays in fund distribution and poor record-keeping.
- c. **Lack of Standardization:** Research by Mohammed (2018) , shows that the absence of standard guidelines for zakat management creates inconsistencies in how zakat is collected and distributed across regions.

3. Digitalization Efforts in Zakat Management

The integration of digital technology into zakat management has become a growing area of interest for researchers. Studies have explored how digital tools can address challenges faced by zakat institutions and improve their efficiency. Key findings include:

- a. **Online Platforms for Zakat Collection:** Research by Khan et al. (2021) highlighted the increasing use of online platforms and mobile applications for zakat collection. These platforms make it easier for donors to contribute and provide real-time donation tracking, increasing transparency and trust.
- b. **Technology :** Alharbi (2020) explores the potential of blockchain technology in zakat management. Blockchain can provide a secure and transparent system for tracking zakat funds, ensuring that they are distributed to the intended beneficiaries without mismanagement.
- c. **Data Analysis for Targeted Distribution:** Studies such as Sulaiman & Rahman (2021) emphasize the importance of data analysis in identifying beneficiary needs. By leveraging data, zakat institutions can design more effective programs and allocate resources more efficiently.

Case Studies from Other Regions: Research from countries such as Malaysia, Pakistan, and the Gulf States has shown that digitalization can significantly improve zakat management. For example, Malaysia has implemented an online zakat payment system that has improved collection rates and increased transparency (Zain & Rahman, 2020). Similarly, Pakistan has developed a centralized database to track zakat distribution and ensure accountability (Bashir, 2016).

Identifying gaps in the existing literature is a crucial step in establishing the significance of a study. It highlights areas where knowledge is incomplete, inconsistent, or underexplored, providing a basis for research to contribute new insights. In the context of "Digital Transformation of Zakat Management in East Kalimantan, Indonesia: Opportunities and Challenges," several gaps in the current literature can be identified:

While there is a growing body of research on zakat management and digital transformation, much of the existing literature focuses on national or global perspectives. Studies often examine zakat practices in countries with established Islamic financial systems, such as Malaysia, Saudi Arabia, or Pakistan (Zain & Rahman, 2020; Bashir, 2016). However, there is a lack of research exploring zakat management in specific regional contexts, such as East Kalimantan, Indonesia. This region has unique socioeconomic, cultural, and technological dynamics that can influence the implementation and effectiveness of digital transformation in zakat management. Addressing this gap will provide local insights that can inform tailored strategies for zakat institutions in similar contexts.

Although digital transformation has been widely discussed in the broader context of financial services and Islamic finance, limited research specifically addresses the application of advanced digital tools such as blockchain, artificial intelligence (AI), and big data analytics in zakat management (Alharbi, 2020). Most research focuses on basic digitalization efforts, such as online payment platforms or mobile applications (Khan et al., 2021). However, the potential of cutting-edge technology to improve transparency, efficiency, and accountability in zakat management remains largely unexplored. This study aims to investigate how this technology can be leveraged to address existing challenges and open up new opportunities.

While the benefits of digital transformation in zakat management are often highlighted, empirical evidence on the challenges faced by zakat institutions during the digitalization process is lacking. Existing studies tend to focus on theoretical frameworks or success stories, without adequately addressing practical barriers, such as limited technological infrastructure, resistance to change, lack of digital literacy, and regulatory hurdles (Mohammed, 2018). This study seeks to fill this gap by providing empirical data on the specific challenges faced by zakat institutions in East Kalimantan, Indonesia, and offering actionable recommendations to address them.

Most research on zakat management and digital transformation tends to focus on institutional perspectives, such as those of zakat organizations or policymakers (Hassan & Ali, 2019). However, the perspectives of other stakeholders—such as donors, recipients, and technology providers—are often overlooked. Understanding the experiences, expectations, and concerns of these stakeholders is crucial for designing effective digital solutions that meet the needs of all parties involved. This study aims to address this gap by incorporating stakeholder perspectives through surveys and interviews.

While numerous studies discuss the potential benefits of digital transformation in zakat management, few provide concrete metrics or frameworks to measure its impact on efficiency, transparency, and social outcomes (Sulaiman & Rahman, 2021). This study aims to develop and implement measurable indicators to assess the effectiveness of digital tools in improving zakat management processes and outcomes in East Kalimantan.

C. RESEARCH METHODOLOGY

This research uses a qualitative research design, using an exploratory and descriptive approach. Qualitative methods are deemed appropriate because this research seeks to understand the processes, perceptions, institutional adaptations, and socio-religious implications of digital transformation in zakat management, rather than testing statistical relationships.

This study aims to explore how zakat institutions, government agencies, and community stakeholders in East Kalimantan, Indonesia, adopt digital technologies—such as mobile applications, electronic payment systems, and online fundraising platforms—to improve zakat collection, distribution, and accountability.

This exploratory design allows for a deep understanding of the context and nuances of digital transformation in the Islamic philanthropy sector. It helps uncover opportunities, such as increased transparency, efficiency, and accessibility, as well as challenges, including digital literacy gaps, regulatory constraints, cybersecurity risks, and institutional resistance to technological change. Creswell's (2018) qualitative research framework, research with studies library to build a comprehensive understanding of the digitalization process in zakat institutions.

This research was conducted in East Kalimantan Province, a rapidly developing region in Indonesia with growing interest in digital governance and Islamic philanthropy. This province provides a relevant case study due to the presence of government-supported zakat management institutions that integrate digital platforms into their operations, particularly those providing public information. The socio-economic diversity and ongoing digital transformation initiatives by local governments make East Kalimantan an ideal place to examine how traditional faith-based philanthropy adapts to the digital ecosystem.

Data was collected from primary and secondary sources as follows:

Primary Data, Observation of digital platforms, online campaigns, and administrative processes used by zakat institutions to facilitate collection and distribution. And then secondary data, analysis of institutional reports, government policies, and official statistics related to zakat management. A review of academic literature, news articles, and regulatory frameworks on digital transformation and Islamic finance.

This combination of data sources allows the researcher to triangulate findings and ensure validity through cross-verification of information. The data were analyzed using thematic analysis as proposed by Braun and Clarke (2006). This involved several stages:

1. Introduction to sourced data from the media
2. Generating initial code related to opportunities, challenges, and strategies for digital zakat management.
3. Look for themes like “technology adoption,” “governance reform,” “transparency,” and “public trust.”
4. Review and refine themes to ensure coherence and consistency.
5. Produce analytical narratives that connect empirical findings with theoretical frameworks of digital governance and Islamic social finance.

D. RESULT AND DISCUSSION

Current State of Zakat Management

The study revealed that zakat management in East Kalimantan has undergone gradual institutional development but is still in the transition phase between conventional and digital systems. The management structure is dominated by the National Zakat Agency (BAZNAS) of East Kalimantan Province and several other institutions. Amil Institution Zakat (LAZ) is managed by Islamic organizations and community groups.

a. Institutional Practices

Most zakat institutions still rely on manual processes to collect and distribute zakat funds, although digital elements are beginning to emerge. For example:

- Collection still ongoing heavily reliant on direct payments, mosque-based collection points, and salary deductions for civil servants.
- Distribution (distribution) often follow the traditional charity model, focusing on consumptive assistance rather than productive empowerment programs.
- Reporting and accountability have improved, but transparency remains hampered by limited technology integration and inconsistent digital literacy among administrators.

b. Technology Adoption

Several institutions have started adopting digital payment gateways (e.g., QRIS, online transfer systems, and mobile banking) and experimenting with official websites and social media platforms. to reach younger muzakki (zakat payers). However, these digital tools are largely fragmented and underutilized , lacking a unified digital ecosystem for zakat management in the province.

c. Regulatory and Coordination Aspects

Regional Regulations (Governor's Regulations) on zakat management are generally in line with the national legal framework (Law No. 23/2011 on Zakat Management) However, it does not yet contain a specific clause addressing digital transformation or the e-zakat system . Coordination between BAZNAS, LAZ, and local governments remains limited, resulting in overlapping programs and inefficiencies. Overall, the current system can be characterized as semi-digital , where traditional management practices coexist with early-stage digital innovations.

Opportunities for Digital Transformation

The research identified several strategic opportunities that could accelerate the digital transformation of zakat management in East Kalimantan .

a. Expansion of the Digital Payment Ecosystem

Increased penetration mobile banking , e- wallet , and fintech platforms offers significant potential for zakat institutions to modernize payment and donation channels. Collaborating with established fintech companies or local startups can simplify zakat transactions and attract tech-savvy donors.

b. Increasing Transparency and Accountability

Digital platforms enable real-time reporting, data visualization, and automated tracking of zakat funds . Implementing blockchain- based or cloud- based management systems can increase public trust, ensure data integrity, and minimize misuse or duplication of funds.

c. Data-Driven Policies and Social Targeting

Through digital transformation, zakat institutions can utilize big data analytics To identify potential zakat payers , map poverty zones, and evaluate the effectiveness of distribution programs. Integration with government databases such as the Integrated Social Welfare Data (DTKS) will increase targeting accuracy and social impact.

d. Strengthening Collaboration

The digital ecosystem promotes synergy between BAZNAS, LAZ, banks, fintech, and government agencies , creating an integrated zakat management model that aligns with the national digital transformation policy.

e. Socio-Religious Involvement

Online campaigns, social media outreach, and mobile apps can strengthen community engagement, especially among younger generations who value transparency and convenience in religious giving.

This opportunity positions East Kalimantan as a potential model for regional digital zakat innovation. if well supported by policies, infrastructure, and human resource capacity.

Despite promising opportunities, this study identifies several structural, institutional, and technological challenges. which hinders the realization of full digital zakat management.

a. Limited Digital Literacy

The main barrier lies in the digital skills gap. between zakat administrators and beneficiaries. Many local amil (zakat officers) lack adequate training to operate digital tools or manage data securely, resulting in underutilization of available technology.

b. Infrastructure and Connectivity Issues

In some remote areas of East Kalimantan , internet connectivity remains unstable , impacting the accessibility of online zakat services. Uneven distribution of ICT infrastructure limits the scalability of digital platforms.

c. Regulatory and Legal Constraints

Current zakat management regulations does not explicitly regulate digital transactions, data protection, or online fundraising mechanisms . There is a lack of clear legal guidelines on digital accountability and privacy standards. creating uncertainty for institutions and donors.

d. Resistance and Organizational Culture

Some zakat institutions exhibit organizational inertia , with leaders and staff preferring conventional systems out of habit, lack of trust in technology, or fear of transparency. This cultural resistance slows the pace of digital innovation.

e. Cybersecurity and Data Protection Risks

The use of digital platforms creates new risks related to Data breaches, hacking, and misuse of personal or financial information . Many zakat institutions lack adequate cybersecurity protocols or backup systems.

f. Fragmented Institutional Coordination

Different zakat agencies operate with varying levels of digital readiness and data management standards. The lack of a centralized provincial database or interoperable digital system resulting in inefficiency, duplication, and limited information sharing.

Table 1 Summary of Findings

Aspect	Current State	Opportunity	Challenge
Technology Adoption	Early stage, semi-digital	Integration with fintech and mobile apps	Low digital literacy, limited infrastructure
Institutional Governance	Conventional but improving	Enhanced transparency, data analytics	Regulatory gaps, fragmented coordination
Public Engagement	Limited reach	Strong potential through social media and online campaigns	Cultural resistance, trust issues
Policy Framework	In line with national law, not yet focused on digital	Possible e-zakat arrangements	Absence of specific digital legal provisions

In short, zakat management in East Kalimantan is at a critical juncture : it has basic institutional capacity and growing digital awareness, but to achieve full transformation, it must overcome legal, infrastructure, and human resource challenges. These findings underscore the need for a comprehensive provincial roadmap. for digital zakat governance that combines technological innovation with strong regulatory support and ethical management principles.

Discussion

Interpretation of Findings

This section aims to interpret and explain the research findings and relate them to the study objectives regarding the digital transformation of zakat management in East Kalimantan, Indonesia .

The results of the study show that zakat management in East Kalimantan Currently, the region is dominated by manual or semi-digital systems. Most Zakat Management Organizations (BAZNAS and LAZ) have begun adopting digital platforms such as mobile

applications , websites , and social media; however, these systems have not been fully integrated into a comprehensive data management framework. This finding highlights a significant gap between digital potential and implementation in the region.

The interpretation of these findings can be described as follows:

1. Relevance to Research Objectives

These findings confirm that the study's objective—to explore the opportunities and challenges of digital transformation in zakat management—is well-aligned with current realities. Digital transformation offers the potential to increase efficiency, transparency, and accountability in zakat administration. However, its success requires adaptive strategies, institutional readiness, and capacity building among zakat officials and local authorities.

2. Implications for the Effectiveness of Zakat Management

The use of digital technology can increase public participation through online zakat payment systems, real-time reporting, and greater access to information. However, limited digital literacy among zakat administrators and inadequate internet infrastructure in rural areas remain significant barriers. Therefore, the effectiveness of digitalization depends heavily on institutional readiness, regulatory support, and local government involvement.

3. Relationship with Theoretical Framework and Previous Studies

These findings are consistent with previous research emphasizing that digital transformation in Islamic philanthropy requires more than just technological innovation—it demands organizational and governance reform. Studies from Malaysia and the Middle East show that successful zakat digitalization depends on information system integration, public trust, and clear regulations on data protection and financial transparency.

4. Social and Economic Implications

Socially, a digital zakat system has the potential to expand the reach of beneficiaries and ensure more equitable distribution, especially in remote areas. Economically, digital implementation can reduce operational costs, accelerate fund distribution, and increase the accumulation of productive zakat funds that support community empowerment programs.

5. Local Context of East Kalimantan

In the context of East Kalimantan, findings indicate that the success of digital transformation of zakat management depends on strong collaboration between the local BAZNAS office, the provincial government, Islamic financial institutions, and the local technology sector. Incorporating local wisdom is also crucial to ensure that technology adoption aligns with the region's socio-religious dynamics and is well-received by the local community.

In short, the interpretation of these findings reinforces the understanding that the digital transformation of zakat management in East Kalimantan is not simply a technological shift but also a transformation in governance, policies, and institutional culture . Achieving effectiveness and sustainability requires synergy between regulatory frameworks, technological innovation, and social engagement in building a robust digital zakat ecosystem.

Comparison with Previous Studies

The findings of this study on the digital transformation of zakat management in East Kalimantan reveal both alignments and divergences with previous research conducted in other regions and contexts. This comparison provides deeper insights into regional specificities, institutional readiness, and the socio-technological dynamics shaping zakat digitalization in Indonesia.

1. Alignment with Studies in Other Islamic Countries

The results are consistent with findings from Malaysia and the Middle East , where zakat digitalization has been shown to improve efficiency, transparency, and accountability in fund collection and distribution. Studies by Johari et al. (2021) and Rahman (2020), for example, show that the use of online zakat platforms and integrated databases significantly increases donor trust and institutional credibility. Similarly, findings from East Kalimantan indicate that digital tools—such as mobile apps and online payment gateways—have begun to improve the accessibility and traceability of zakat transactions.

2. Differences between Institutional and Technological Readiness

However, compared to more advanced zakat ecosystems in Malaysia or the Gulf countries, East Kalimantan exhibits lower institutional and technological maturity . Previous studies (e.g., Wahid & Kadir, 2022) highlight that the success of digital transformation in zakat institutions relies heavily on digital literacy, government support, and robust technological infrastructure. In East Kalimantan, these supporting elements are still developing, particularly in rural districts where internet access and human resource capacity are still limited.

3. Regulatory and Governance Aspects of Several

research has emphasized the role of legal frameworks and governance mechanisms in ensuring accountability and compliance in digital zakat systems. For example, Mahomed (2019) argued that a clear regulatory structure increases trust among muzakki (donors) and prevents misuse of funds. However, this study found that the regulatory framework in Indonesia—especially at the provincial level—remains fragmented , and that coordination between BAZNAS, local governments, and financial technology institutions needs to be further strengthened.

4. Cultural and Behavioral Dimensions

Previous research in Indonesia (e.g., Lubis et al. , 2020) also noted that cultural and religious values play a central role in the adoption of digital zakat platforms. This study supports this observation: while many zakat payers in East Kalimantan expressed a willingness to use digital channels, the traditional preference for direct, face-to-face payments remains prevalent. This suggests that digital transformation must be accompanied by cultural adaptation and outreach strategies to increase acceptance among Muslims.

5. Contribution to Existing Literature

Unlike most previous research that focuses on technologically advanced national or regional institutions, this study contributes by highlighting the local dynamics and challenges of digital zakat management in a resource-rich but geographically diverse province. It underscores that digital transformation is not a one-size-fits-all process, but rather a context-specific evolution that requires attention to local governance, infrastructure gaps, and socio-religious nuances.

In short, this research both confirms and expands existing knowledge on zakat digitalization. While consistent with previous findings on the potential benefits of technology in improving zakat management, it also reveals new insights into regional disparities, regulatory fragmentation, and cultural barriers that must be addressed for digital transformation to be sustainably successful in Indonesia.

Practical Implications

The findings of this study contribute both theoretically and practically to the growing discourse on digital transformation in Islamic social finance , particularly in the context of zakat management in Indonesia. By examining the case of East Kalimantan, this study not only validates existing theories but also broadens our understanding of how digitalization operates in a decentralized and socio-culturally diverse environment.

Theoretical Implications

From a theoretical perspective, this study strengthens and extends the framework of Islamic digital transformation and institutional readiness proposed by Hassan and Aliyu (2018) and Wahid and Kadir (2022). Evidence from East Kalimantan supports the notion that digitalization in zakat management is not a purely technological process but a multidimensional transformation encompassing technological innovation, governance adaptation, and socio-religious legitimacy.

Consistent with Johari, Rahman, and Alias (2021), this study confirms that digitalization increases transparency, accountability, and trust in zakat institutions. However, it also introduces a new layer of complexity particularly regarding regional disparities in digital literacy and infrastructure that has rarely been addressed in previous models of the digital zakat ecosystem. Therefore, this study expands the theoretical debate by highlighting the importance of contextual variables (e.g., local governance capacity, public religiosity, and infrastructure access) in shaping the success of digital transformation in Islamic social finance.

Furthermore, this research aligns with Rahman (2020), who argues that fintech integration into Islamic philanthropy requires a balance between Sharia compliance, technological efficiency, and regulatory clarity. The case of East Kalimantan demonstrates that when one of these pillars specifically regulatory support is weak, digital innovation remains fragmented and underutilized. This insight deepens the theoretical understanding of the "digital trust gap" in Islamic social financial institutions.

Practically, these findings have several implications for policy makers, zakat institutions, and technology developers:

1. For Policy Makers:

This study emphasizes the need for clear and harmonized regulations governing the digital zakat system, particularly regarding data protection, transparency, and interoperability between BAZNAS, local governments, and fintech partners. Consistent with Mahomed (2019), establishing a standardized legal framework will increase accountability and strengthen public trust in digital zakat operations.

2. For Zakat Institutions (BAZNAS and LAZ):

Institutions should invest in capacity-building programs to enhance the digital literacy of zakat officers and develop internal digital governance structures. As suggested by Basri and Idris (2021), technology adoption should be accompanied by organizational restructuring and ongoing training to ensure long-term sustainability.

3. For Technology Developers and Fintech Partners :

Collaboration between Islamic financial institutions and technology developers can foster innovative zakat solutions—such as mobile zakat apps, AI-based fund allocation systems, and blockchain-based transparency platforms. Such tools can address challenges with data integration and reporting accuracy, as identified in this study.

4. For the Muslim Community:

Public education and awareness campaigns are needed to bridge cultural resistance to digital zakat payments. Consistent with Lubis, Ahmad, and Tarmizi (2020), promoting digital platforms through religious figures and community influencers can increase acceptance and trust among traditional zakat payers.

5. For Academics and Future Research:

This study provides an empirical basis for developing a localized digital zakat transformation model that incorporates local governance, cultural adaptation, and technological accessibility. Future research could use longitudinal and comparative methods to evaluate the impact of digitalization across various Indonesian provinces or ASEAN countries.

Overall, this research contributes to the theoretical discourse on Islamic digital governance while offering practical insights for the implementation of a sustainable digital zakat system in developing regions. It highlights that digital transformation in zakat management is not simply a process of automation, but rather an evolution toward integrated, transparent, and community-based Islamic financial governance .

E. CONCLUSION

This study explores the digital transformation of zakat management in East Kalimantan, Indonesia , focusing on current practices, opportunities, and challenges faced by zakat institutions. The findings reveal several key insights:

1. Current Practice:

Zakat management in East Kalimantan remains predominantly semi-digital, with BAZNAS and LAZ institutions using websites, mobile apps, and social media platforms for collection and reporting. However, integration between digital tools and management systems remains limited.

2. Opportunities:

Digitizing zakat offers significant opportunities to increase efficiency, transparency, and public trust. Digital tools can expand reach to rural communities, facilitate real-time monitoring, and strengthen accountability in fund distribution.

3. Challenges:

Key barriers identified include limited digital literacy among zakat officers, inadequate technological infrastructure in remote areas, and a fragmented regulatory framework. Furthermore, traditional cultural preferences for direct, face-to-face zakat payments continue to hinder digital adoption.

4. Institutional Readiness:

The success of digital transformation depends on institutional readiness, regulatory support, and effective collaboration among stakeholders—including BAZNAS, local governments, fintech providers , and religious leaders.

Overall, this study highlights that digital transformation in zakat management is not simply a technological shift but an institutional and cultural evolution that requires coordinated governance, public trust, and continuous innovation.

Based on these findings, several recommendations are proposed to strengthen the digital transformation of zakat management in East Kalimantan and its surroundings:

1. For Policy Makers and Regulators:

- Develop a national digital zakat governance framework to ensure system interoperability , data security, and transparency.
- Strengthening collaboration between the Ministry of Religion, BAZNAS, and financial technology (fintech) authorities to create an integrated digital payment and reporting system.
- Provide financial and technical support for digital infrastructure in underdeveloped areas to ensure equitable access.

2. For Zakat Institutions (BAZNAS and LAZ):

- Improving human resource capacity through digital literacy training and workshops for zakat officers.
- Establish a digital innovation unit within the zakat institution to manage system development, data integration, and digital monitoring.
- Adopt customer-centric digital services , such as easy-to-use apps, online dashboards, and automated reporting systems.

3. For Community Engagement:

- Conducting public awareness campaigns that emphasize Sharia compliance, convenience, and security of digital zakat payments.
 - Engage scholars and influencer communities in promoting digital zakat literacy to bridge traditional and modern practices.
4. For Technology Collaboration:
- Fostering partnerships with fintech companies and Islamic banks to design a secure and transparent digital zakat ecosystem.
 - Explore the uses of blockchain technology to improve traceability and AI tools to optimize zakat allocation and impact assessment.

Future Research Directions

While this study provides valuable insights into digital zakat management in East Kalimantan, it also opens up several avenues for future research:

1. Comparative Study:
Future research should compare digital zakat implementation across provinces or countries (e.g., Indonesia, Malaysia, and Brunei) to identify contextual differences and best practices.
2. Longitudinal Impact Assessment:
Studies that track the long-term effects of digital transformation on zakat collection, distribution efficiency, and poverty alleviation will provide empirical evidence on the outcomes of digitalization.
3. Behavioral and Cultural Analysis:
Further exploration is needed into how cultural, religious, and behavioral factors influence the acceptance of digital zakat systems among Muslim communities.
4. Technology Innovation Research:
Future studies could investigate the role of new technologies—such as blockchain, artificial intelligence (AI), and data analytics—in improving transparency, governance, and impact measurement in zakat management.
5. Policy and Governance Evaluation:
Empirical studies are needed on the effectiveness of digital zakat policies and regulatory frameworks in supporting innovation while maintaining Sharia compliance and public accountability.

In conclusion, this study underscores that the digital transformation of zakat management is a crucial step towards modernizing Islamic social finance in Indonesia. With strong institutional commitment, clear regulations, and inclusive technological innovation, East Kalimantan and Indonesia as a whole can build a transparent, efficient, and socially impactful zakat ecosystem in the digital era.

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