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Technological Integration within Zakat Institutions: A Comprehensive Review and Prospective Research Directions

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ABSTRACT

This research undertakes a meticulous systematic literature review on the integration of technology within zakat institutions. With the surge in technological advancements, these institutions stand to reap significant benefits, particularly regarding the digital management practices in zakat collection and distribution. This review amalgamates various research methodologies and guided by the ROSES (RepOrting standards for Systematic Evidence Syntheses) publication standard. We selected articles from two foremost databases, SCOPUS and Web of Science, for this study. Thematic analysis yielded two principal themes: the fundamental understanding of digital zakat, and; practices of digital management. The former theme encompasses seven sub-themes (awareness, trust, perceived risk, personal innovativeness, information integration, technology implementation, and efficiency), while the latter is divided into two sub-themes, namely digital collection and distribution procedures. Our findings underscore the significance of implementing technology in managing zakat and present a roadmap for future research in this area. This study contributes to the existing body of literature by examining the adoption of technology in the field of Islamic social finance research.

Keywords: Digital, Finance, Islamic finance, Social Finance, Technology.

Over the past years, Islamic social finance has gained global momentum, with zakat, waqf, and *sadaqah* (charity) utilized as potent tools for alleviating poverty and fostering socio-economic growth for over 1,400 years. Zakat, the third Pillar of Islam, is a mandatory contribution from financially capable Muslims for specific recipients in eight categories (Wahab & Abdul Rahman 2011; Yusuf & Derus 2013). Zakat serves as a potent catalyst for societal development, facilitating economic justice and enhancing living standards (Abdullah et al. 2015; Saad et al., 2020). Scholarly attention on zakat research has significantly grown, encompassing multiple sub-domains and conducted across various nations (Razak 2020; Cokrohadisumarto et al. 2019; Ali & Hatta 2014; Sohag et al. 2015; Ali et al. 2015). This interest has expanded beyond religious studies

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into socio-economic analysis and compliance behavior studies (Wahid et al. 2021; Adnan & Abu Bakar 2009; Saad et al. 2020).

Although extensive research has been conducted regarding the potential of zakat to alleviate poverty, a limited number of scholars have executed systematic reviews on this subject. The necessity for systematic review is underscored by the challenges conventional literature reviews face, including their susceptibility to reviewer bias, their occasional lack of comprehensiveness, and their infrequent consideration of differences in study quality (Robinson & Lowe 2015).

This study employs a systematic literature review (SLR), a methodologically rigorous process which involves classification, selection, and critical appraisal of prior studies (Dewey & Drahota 2016). It aims to synthesize scholarly literature regarding the intersection of technology use and zakat institutions, addressing the primary research question: How has zakat management evolved in the context of digital technology? By systematically reviewing past research, this study bridges the existing knowledge gap and deepens our understanding of technological adaptation in zakat institutions. This can aid a range of stakeholders, highlighting the need for expansive technology implementation in various potential areas to ensure swift and effective responses to unforeseen circumstances such as the Covid-19 pandemic.

Methodology

This study employs the ROSES (RepOrting standards for Systematic Evidence Syntheses) review methodology as its structure, specifically designed for systematic reviews (Haddaway et al. 2018). The process began with the formulation of critical research questions and then proceeded with a systematic search technique comprising three stages: identification, screening, and eligibility determination of potential studies. The quality assessment of selected articles followed, along with the data extraction, analysis, and validation. The ROSES diagram is illustrated in Figure 1.

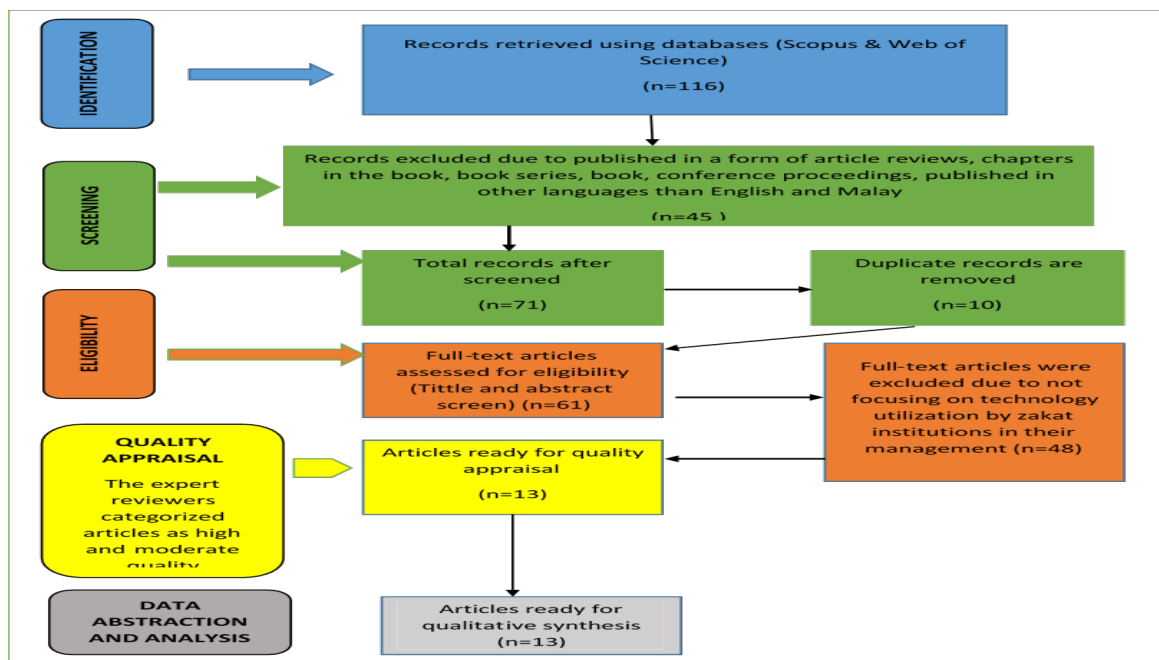


Figure 1: A flow diagram of ROSES of technology implementation in zakat institutions

Formulation of Research Questions

Research questions were developed using the PICO framework, focused on three aspects: zakat institutions (the 'population'), the adaptation of technology by these institutions ('interest'), and zakat management ('context'). This formed the basis for two central research questions guiding this study. From 116 initially identified articles, only 13 met the criteria for inclusion in this review.

Systematic Searching Strategies

The systematic searching strategies process consists of three primary steps: identification, screening, and eligibility.

1. *Identification*: In the identification stage, the study employs synonyms and variations of the primary keywords "digital zakat" and "zakat technology" to broaden the search scope for relevant articles within the Scopus and Web of Science databases. Keyword selection was guided by the study topic and derived from an online thesaurus, previous research, Scopus suggestions, and domain experts. An extensive search string was then constructed based on these terms (Table 1). These databases offer advanced search functionalities, extensive indexing, quality control, and multidisciplinary focus. From this process, a total of 116 articles were initially identified.

Table 1. The Search String

Database	Search string
Scopus	TITTLE-ABS-KEY (("Zakah" OR "Zakat") AND ("administrat*" OR "management" OR "distribution*") AND ("digital" OR "tech*" OR "artificial intelligence" OR "Online" OR "blockchain" OR "A.I"))
Web of Science	TS= (("Zakah" OR "Zakat") AND ("administrat*" OR "management" OR "distribution*") AND ("digital" OR "tech*" OR "artificial intelligence" OR "Online" OR "blockchain" OR "A.I"))

2. *Screening*: The study applied a selection criterion to the 61 identified articles based on the research question with the inclusion and exclusion criteria in Table 2. Due to practicality, Okoli (2015) recommended setting a feasible time frame for review. Given that studies related to technology adaptation in zakat institutions began to increase noticeably from 2015, the period between 2015 and 2021 was chosen as an inclusion criterion. To ensure quality, only empirical journal articles in English or Malay were included, leading to the exclusion of 71 articles and removal of 18 duplicates. The remaining 111 articles proceeded to the eligibility determination phase (Higgins & Green 2011).

Table 2. The Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Timeline	The earliest until 2022	-
Document Type	Article Journal	Chapters in the book, book series, book, conference proceeding
Language	English and Malay	Other than English and Malay
Region	All	-

3. *Eligibility*: The third phase in the process, eligibility, involves a meticulous manual review of the retrieved articles to ensure that all remaining articles, post-screening, align with the established criteria. This process was facilitated by examining the title and abstract of each article. This phase resulted in the exclusion of 48 articles owing to factors such as a primary focus on zakat collection and distribution rather than technology adaptation within zakat institutions, a non-empirical focus, undefined methodology sections, and

publication in book chapter format. Consequently, a total of 13 articles were selected for review.

Quality Appraisal

In order to vouchsafe the quality of the articles' content, the remaining articles were submitted to two domain experts for a comprehensive quality assessment. Following Petticrew and Roberts' (2006) guidance, the experts categorized the remaining articles into one of three quality tiers: high, moderate, or low. Only articles categorized as high or moderate were retained for further review. The experts' evaluation centered on the methodological aspects of the articles to determine their quality ranking. For an article to be included in the review, both authors were required to reach a mutual consensus regarding its quality, which needed to be at least of a moderate level. Any discrepancies were resolved through discussion between the authors before making the final decision regarding the article's inclusion or exclusion from the review. This process resulted in the ranking of 10 articles as high and 3 articles as moderate, making all the remaining articles eligible for review.

Data Abstraction and Analysis

Adopting an integrative review approach, this study embraced diverse research designs and employed a qualitative approach for data synthesis (Whittemore & Knafl 2005). The 13 articles were thoroughly examined, focusing on abstracts, results, and discussions, and data related to the research questions were extracted and tabulated. Then, a thematic analysis identified overarching themes and sub-themes within the data (Braun & Clarke 2006; Flemming et al. 2018). This technique effectively condenses data in a flexible manner and complements other data analysis methods (Vaismoradi et al. 2013). The analysis involved generating themes, reviewing them for accuracy, and assigning names to them. This process resulted in two main themes and nine sub-themes. The theme development was collaboratively done by the authors, resolving any discrepancies or interpretations influencing data interpretation. These themes were presented to two experts, who affirmed their relevance and suitability for the review's results.

Results

The review culminated in the selection of 13 articles. Upon conducting a thematic analysis, two central themes were refined, namely 'general knowledge of digital zakat' and 'digital zakat management practice'. Further examination of these themes gave rise to 9 sub-themes. Geographical distribution of these studies indicated that nine were undertaken in Indonesia, three in Malaysia, and a solitary study in Singapore. The ensuing discussion expounds on each of the sub-themes in Table 3.

Table 3. The Themes and Sub-Themes of Technology Implementation in Zakat Institutions

No	Studies	Years	Methodology	General Knowledge of Digital Zakat							Digital Zakat Management Practice	
				A	T	PR	PI	II	TI	E	ZC	ZD
1	Ascarya	2020	Content Analysis	/					/			
2	Sabri et al.	2021	Interview	/				/		/		/
3	Riyanto et al.	2021	Content Analysis	/						/		
4	Mutamimah et al.	2021	Interview					/	/			/
5	Mohd Nor et al.	2021	Interview / Survey	/				/	/	/		
6	Widiastuti et al.	2021	Interview					/		/		/
7	Hudaefi & Beik	2020	Market Sentiment	/						/		
8	Abidin & Utami	2020	Mix Method							/		
9	Sukmana et al.	2019	Interview						/			
10	Akbar & Handriani	2018	Theoretical						/			

11	Hidayatullah & Priantina	2018	Interview					/	/			
12	Faisol Ibrahim	2014	Content analysis	/								
13	Oktavendi & Mua'ammal	2022	Survey	/	/	/	/				/	
Total				7	1	1	1	5	6	3	5	3

ZC- Zakat Collection ZD-Zakat Distribution	A-Awareness T-Trust PR-Perceived Risk PI-Personal Innovativeness	II-Information Integration TI-Technology Implementation E-Efficiency
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General Knowledge of Digital Zakat

1. *Awareness*: Technology holds the potential to improve zakat management, and numerous institutions have embraced its incorporation. However, awareness of these advancements among zakat contributors and beneficiaries, particularly in Malaysia and Indonesia, seems limited (Ascarya 2022; Riyanto et al. 2021; Sabri et al. 2021). Notably, Generation Z shows greater readiness to use digital platforms for zakat payments compared to older generations (Oktavendi & Mu'ammal 2022). The need for improved awareness can be addressed through robust promotion strategies, with Malaysian institutions utilizing official websites (Faisol 2014) and the Indonesian government leveraging social media platforms (Hudaefi & Beik 2020).

2. *Technology Implementation*: The review has showed that there is imperative need for technology implementation within zakat institutions. Zakat, as a vital tool for addressing significant challenges such as the Covid-19 pandemic and economic crises, often encounters obstacles in terms of adequate zakat allocation and handling the voluminous manual zakat applications. Zakat institutions, therefore, must embrace technology to expedite the process of zakat collection and distribution (Akbar & Handriani 2018). Ascarya (2022) illustrates how adopting fintech can broaden the reach to zakat payers, streamline the zakat processing cycle, and expedite the recovery of household economic situations. Maintaining a robust database can be beneficial for (i) record-keeping of zakat recipients for future reference (Sukmana et al. 2019), and (ii) averting double disbursement. Hidayatullah & Priantina (2018) advocate for the development of an IT-based zakat recipients' database, which could harmonize disparate databases across government and private zakat institutions in Indonesia. Moreover, the incorporation of blockchain technology into zakat management has been proposed. The allure of blockchain technology stems from its provision of transparency, traceability, and accessibility of transactions. These attributes potentially elevate the trust of zakat payers by enhancing the efficiency of zakat management, minimizing human errors, and thereby escalating annual zakat collections (Mohd Nor et al. 2021).

3. *Information Integration*: Information integration is a critical aspect, specifically in regards to coordination between different zakat institutions or governmental entities. For instance, in Indonesia, both governmental agencies and private zakat institutions independently undertake the responsibility of zakat collection and distribution. Due to this lack of inter-organizational coordination, issues concerning zakat integration surface, leading to disparities in zakat distribution between economic hubs such as Java and more remote regions (Hidayatullah & Priantina 2018; Widiastuti et al. 2021). Key information that necessitates integration includes collected zakat amounts, the requirements of zakat recipients, personal details of the recipients, among other pertinent data. Efficient information integration would empower other institutions, such as universities, to share information about potential zakat recipients, thereby aiding zakat institutions in their operational decision-making (Sabri et al., 2021). Such collaborative approaches ease the process of zakat distribution, especially when a third party, like a university, participates in facilitating the process. Blockchain technology has been suggested as a potential

mechanism for information integration. Blockchain functions as a digital ledger, comparable to a traditional logbook, documenting every transaction and connecting every participating party. Each transaction recorded in the ledger undergoes verification and mutual agreement by all system participants. The indelibility of input data ensures transparency, making blockchain an effective mechanism for monitoring and controlling zakat distributions. This system not only provides transparency, but also traceability of transactions, thereby bolstering stakeholder confidence (Mohd Nor et al., 2021).

4. Efficiency: Efficiency aspect has anchored in digital zakat research within the broader category of general knowledge. Sabri et al. (2021) elucidate how a digital platform can streamline zakat distribution, using the case study of Universiti Terengganu Malaysia (UMT) students. The digital platform acts as a facilitator, linking zakat institutions with eligible students (*asnaf*) at the university, culminating in an efficient arrangement. The results of their research reveal that this system can precipitate a reduction in operational costs by an impressive 97% (curtailing the yearly management expense from RM43,000 to a mere RM1,440). In addition to its cost-effectiveness, the platform has been demonstrated to condense processing time by 70% (reducing from 20-34 days to just 7 days). In a different research context, Mutamimah et al. (2021) advocate for the endorsement of a 3C ICT-based collaborative framework across zakat institutions in Indonesia. The 3C model encapsulates the elements of Communication, Coordination, and Cooperation. Implementation of this framework could eradicate overlaps in zakat collection, distribution, and empowerment. Such ICT-based collaboration aids in mapping zakat payers and recipients, thus promoting economic empowerment equity. In contrast to the digital platform and ICT-based collaborative framework, Mohd Nor et al. (2021) propose the utilization of blockchain technology. The blockchain holds potential for refining zakat collection and distribution in a professional, structured, and transparent fashion by emphasizing honesty and eliminating personal and group interests. Their research reveals that the implementation of blockchain could augment zakat distributions owing to its inherent governance mechanism, attributable to its traceability and transparency features. Moreover, they found that blockchain technology elevates accessibility to undertake zakat-associated activities such as payments and information retrieval. Lastly, they emphasized that data management using blockchain technology is cost-effective.

5. Trust: The transition to digital zakat has raised concerns about trust and security, especially in Indonesia (Oktavendi & Mu'ammal 2022). Trust can both facilitate and hinder the adoption of digital platforms for zakat, shaped by security, confidentiality, and system effectiveness. Risks tied to the digital zakat platforms include data privacy issues, transaction errors, system reliability, and potential cyber-attacks. Therefore, zakat institutions must reassure contributors by clearly communicating the steps taken to secure transactions, protect data, and ensure reliable system performance. This can enhance trust and promote the use of digital platforms for zakat. Hence, it is critical for institutions to adopt rigorous cybersecurity measures, effective risk communication, and robust system reliability checks to build trust in digital zakat platforms.

6. Perceived Risk: The dimension of perceived risk emerges within the general knowledge of digital zakat. In the context of technology adoption, risks are conceptualized as a combination of uncertainty and potential adverse consequences that users may encounter when leveraging new technology. Such risks are multifaceted, encompassing financial, performance, temporal, physical, psychological, and social dimensions. Financial risk refers to the potential loss of monetary value resulting from the usage of novel technology. Performance risk, on the other hand, pertains to potential impediments to user performance linked with the employment of such technology. Time risk revolves around the possibility of wasting precious time due to inefficient technology usage. Physical risk implicates the inherent danger associated with physical activities, while psychological risk pertains to possible negative impacts on the user's mental state. Lastly, social risk refers to potential harm to the user's social standing or image due to the use of new technology. It is essential to recognize that these risk dimensions are product-specific and may

not correlate directly with one another, signifying that each technological product comes with its unique risk specification dimensions. In this light, perceived risk can be defined as the consumer's apprehension of uncertainty and potential negative outcomes associated with a particular purchase decision. Within the scope of this study, the perceived risk entails two primary components, namely, security risk and privacy risk (Oktavendi & Mu'ammal 2022). Security risk pertains to the risk of data security breaches or data loss associated with the utilization of a novel technology. Concurrently, privacy risk embodies the possibility of privacy infringement and the diminishment of personal space. In the era of digital zakat collection, security risk plays a crucial role, impacting the acceptance and utilization of new technology. Therefore, it is paramount to meticulously consider and address these risk factors to foster the successful implementation of a digital platform dedicated to zakat collection.

7. Personal Innovativeness: The final sub-theme that surfaced within the general knowledge of digital zakat is personal innovativeness. For the purposes of zakat collection, it is incumbent on the zakat institutions to instigate innovations in existing payment systems, enhancing their user-friendliness (Oktavendi & Mu'ammal 2022). The construct of personal innovativeness plays a significant role in shaping the readiness to adopt new technology, as it is echoed in facets such as perceived ease of use, perceived usefulness, facilitating conditions (FC), and social influence (SI). Research conducted by Oktavendi & Mu'ammal (2022) indicates that Generation Z, being proficient in using digital devices and technologies, demonstrates a high level of personal innovativeness. Their readiness to embrace technology adds to their personal innovativeness, which, in turn, has been found to influence their behavioral intention to adopt digital platforms for zakat payments. Thus, the degree of personal innovativeness has a strong bearing on the likelihood of adopting technological solutions for zakat contribution, underscoring the importance of this factor in designing user-oriented digital zakat platforms.3.5

Digital Zakat Management Practice

1. Digital Zakat Collection: Numerous zakat institutions have embarked on the adoption of digital management for the process of zakat collection (Riyanto et al. 2021; Widiastuti et al. 2021). In countries with a Muslim minority such as Singapore, the Islamic Religious Council of Singapore (MUIS) centralizes the management of zakat, effectively leveraging multiple digital payment methods such as PayNow, eNETS online, and AXS to streamline zakat collection (Riyanto et al. 2021). Conversely, predominantly Muslim nations like Indonesia champion an optimal governance system for zakat. This organizational governance structure encompasses elements like corporate culture, values, systems, policies, and organizational structures, all designed to foster more efficient and effective management. Optimal governance in zakat management enhances the benefits derived from zakat, fostering poverty alleviation and community welfare improvement. Notwithstanding the benefits digital zakat management, there is a recognized deficit of IT experts among *amil* in various zakat institutions, leading to data integration issues and consequent double counting in the zakat collection and distribution process (Widiastuti et al. 2021). Despite this hurdle, Abidin & Utami (2020) acknowledge that the digitalization trend in zakat payments contributes positively to zakat recipients. The advent of an online platform for zakat payment has not only simplified the process for zakat payers but has also boosted zakat collection figures. Oktavendi & Mu'ammal (2022) shows that the generation entering adulthood in the second decade of the 21st century, who are recognized for their internet proficiency from an early age, are prepared to utilize digital platforms for zakat payments, provided the platforms are safe. Simultaneously, the importance of digital marketing activities for digital zakat collection targeting the public has been emphasized by Hudaefi and Beik (2020). They argue that campaigning zakat as a religious obligation shapes the social and economic dynamics of a Muslim community, especially during challenging periods like the Covid-19 pandemic. With strategic digital advertising, zakat payers can better comprehend their Islamic responsibilities, which include the payment of zakat.

2. *Digital Zakat Distribution*: The subsequent theme focuses on the zakat distribution process. Within the Indonesian context, zakat institutions confront a significant challenge in the deficit of proficient manpower, especially *amil* who are adept in leveraging technology. Widiastuti et al. (2021) underscore the necessity for *amil* to be technologically competent, particularly in terms of information technology (IT), to effectively orchestrate the zakat distribution process and address correlated challenges such as discerning the needs of zakat recipients. The researchers propose two strategic approaches that emphasize enhancing the IT capabilities of *amil*: Firstly, providing comprehensive training and secondly, augmenting the team of technologically proficient *amil* through recruitment of IT literate employees. In a similar vein, Mutamimah et al. (2021) advocate for collaborative engagement among all institutions overseeing zakat distribution within Indonesia. This includes mosques, private organizations, and governmental agencies, with a shared responsibility to monitor the distribution process and maintain comprehensive records of zakat recipients to prevent redundancies. Within the Malaysian setting, Universiti Malaysia Terengganu (UMT) has harnessed a localized digital platform to locate *asnaf* students within the university. The digital scrutiny of students' information allows UMT to identify those eligible for zakat and subsequently reach out to them via the university portal (Sabri et al. 2021). This systematic approach ensures that students who qualify for zakat but lack awareness thereof are properly notified.

Discussion

The thematic analysis yielded two overarching themes (General Knowledge of Digital Zakat and Digital Zakat Management Practice), and further subdivided into nine sub-themes (Awareness, Trust, Perceived Risk, Personal Innovativeness, Information Integration, Technology Implementation, Efficiency, Zakat Collection, Zakat Distribution). This section delves into a more detailed discourse of these themes. The evolution of zakat, which consistently progresses over time, initially had a digital research focus centered around awareness, information integration, and technology implementation. However, beginning in 2020, a shift was noted towards efficiency, trust, perceived risk, and personal innovativeness as the key parameters for evaluating digital zakat collection and distribution practices.

In the technological sphere, numerous tools such as blockchain, fintech, and digital databases are available that zakat institutions can leverage to enhance their operations. A prior investigation in 2014 by Ibrahim Faisol (2014) delved into the positive impact of internet utilization on zakat management within Malaysia. The advent of the internet allowed zakat institutions to create websites as platforms for information dissemination to zakat recipients and payers. Consequently, future research could explore the further potential of websites, such as crowdfunding, digital applications, etc.

In Indonesia, several organizations, including mosques, government agencies, and private institutions, are tasked with managing zakat collection and distribution. These entities need to integrate and share information related to zakat to avert data duplication. Previous studies have advocated for the establishment of an easily accessible digital database to prevent misunderstandings (Hidayatullah & Priantina 2018). Moreover, Akbar & Handriani (2018) suggested the use of the MVC (Model, View, and Control) architecture framework for zakat information technology.

The Covid-19 pandemic outbreak in 2020 led to an increased discourse around the necessity of technology implementation in zakat management, specifically to expedite the processes of collection and distribution. Sukmana et al. (2019) proposed an application, 'Model of Radar Zakat' (RAZAR), which could assist zakat institutions in Indonesia to directly pinpoint the location of zakat recipients using the Application Program Interface (API) from Google Maps. In tandem, Ascarya (2020) highlighted the crucial role of financial aid from zakat institutions for economic recovery during the pandemic. Concurrently, Hudaefi & Beik (2020) demonstrated the potential benefits of social media platforms for zakat institutions in enhancing awareness and consequently, zakat collections.

The contemporary era, dominated by technological advancements, has seen innovations not only in the financial industry but also within non-financial sectors, both public and private, such as zakat institutions. These innovations aim to streamline the collection and distribution of zakat through online systems. As an Islamic social finance tool, zakat is increasingly integrating financial technology to accelerate zakat fund transactions. Online transactions enable zakat payers to calculate their zakat, make payments, and monitor their transactions conveniently via online platforms (Ahmad et al. 2014).

In the context of technology acceptance research, a pivotal factor to consider is the effort expectancy of the user, which essentially represents the perceived ease of using the technology (Venkatesh et al. 2003). The simplicity associated with learning and operating the technology often serves as a cornerstone in the decision-making process for technology adoption. A number of studies, including those by Li et al. (2018), Sulaeman and Ninglasari (2020), and Venkatesh et al., (2003), have underlined that effort expectancy exerts a positive influence on the intention to use online platforms for zakat payment.

Beyond the user's perspective, it is incumbent upon zakat institutions to ensure their staff, specifically the *amil*, are equipped with adequate IT literacy. To facilitate efficient operations, the *amil* should be provided with comprehensive training on technology usage, in addition to honing organizational skills essential for managing the institutions (Mulyadi et al., 2018). This strategic skilling and upskilling of staff are integral for successful digital integration within zakat institutions.

Future Research Agenda

The primary objective of this study is to conduct a comprehensive review of the integration of technology within zakat institutions. This study yields several notable contributions both to practical applications and the existing body of knowledge. By evaluating the systematic review, various stakeholders such as policymakers, the general public, researchers, and zakat institutions can formulate both short-term and long-term adaptation strategies for indigenous groups. The findings of this study provide foundational knowledge regarding the assimilation of local insights into the creation of adaptable technology, as well as identifying potential areas for technological enhancement.

The outcomes of this study guide researchers towards specific areas where the content of studies related to technological adaptation should be concentrated. The review underscores the importance of equipping zakat institutions, zakat payers, and zakat recipients with a robust understanding of digital zakat prior to the full-scale implementation of any technological solution. It is crucial that aspects such as awareness, trust, perceived risk, personal innovativeness, efficiency, information integration, and the choice of technology for implementation are thoroughly examined beforehand.

While the focus in digital zakat management has largely centered around zakat distribution, zakat management, and zakat collection, other areas like zakat application warrant further investigation, as the number of studies conducted in this area remains relatively limited. This investigation presents a range of considerations for prospective researchers to explore. The outcomes of the systematic literature review, along with the content analysis, have revealed a plethora of unexplored terrains and promising avenues for future academic inquiry. The study outlines the future research agenda in Table 4.

Table 4. Future Research Agenda

Research Stream	Future Research Questions	Author(s)
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General Knowledge on digital zakat	1. What are the potential advantages and dynamics of collaborative management between zakat institutions and key stakeholders, encompassing governmental bodies, non-governmental organizations, and financial institutions, in the enhancement of zakat management procedures?	Mutamimah et al. 2021.
	2. What risk management framework can be devised to ensure the secure and efficient operation of digital zakat collection and distribution?	Ali et al. 2020.
	3. What pertinent regulations are in place or should be developed to safeguard the personal data of zakat recipients and payers?	Sukmana et al. 2019.
	4. What determinants influence the perceptions of zakat payers with regard to the zakat digital payment system?	Wahyu et al. 2021.
Digital Management Practice	1. What is the role and impact of Islamic Social Finance (ISF) instruments, specifically zakat, infaq, and waqf, in addressing community challenges and fostering societal development?	Ascarya 2020.
	2. How can the adoption and improvement of an online financial aid system augment the efficiency of zakat management, particularly in large, diverse communities with varied applicant backgrounds and financial complexities?	Sabri et al. 2021.
	3. What methods can be employed to construct a specialized zakat blockchain model that generates societal benefits and augments transparency?	Mohd Nor et al. 2021; Ali et al. 2020.
	4. What strategies can be devised to optimize governance in zakat institutions, with particular focus on the analysis of benefits, opportunities, costs, and potential risks?	Widiastuti et al. 2021.

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