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Zakat Supervision for Poverty Reduction in Bangladesh: Strengthening Islamic Social Finance through Effective Governance

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Abstract

Zakat is a fundamental instrument of Islamic social finance with considerable potential to alleviate poverty. However, ineffective supervision, weak governance, and inefficient management practices often limit its contribution to sustainable socio-economic development in many developing countries, including Bangladesh. This study examines the relationships among Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty Reduction by proposing and empirically testing an integrated conceptual framework. A quantitative research approach was adopted, and primary data were collected from 384 respondents comprising Zakat administrators, donors, beneficiaries, and representatives of Zakat institutions in Bangladesh using a structured questionnaire. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with Smart PLS 4. The findings reveal that Zakat Supervision has a significant positive effect on Zakat Governance, while Zakat Governance significantly enhances Zakat Management Effectiveness. Furthermore, Zakat Management Effectiveness has a significant positive impact on Poverty Reduction. The mediation analysis further demonstrates that Zakat Governance and Zakat Management Effectiveness jointly mediate the relationship between Zakat Supervision and Poverty Reduction, indicating a complementary partial mediation effect. These findings highlight that strengthening supervisory mechanisms, improving institutional governance, and enhancing management effectiveness are critical to maximizing the poverty alleviation potential of Zakat. The study contributes to the literature on Islamic social finance by introducing an integrated serial mediation model that explains how institutional factors collectively enhance the effectiveness of Zakat in reducing poverty. The findings also provide practical insights for policymakers and Zakat institutions seeking to improve governance practices and promote sustainable poverty reduction in Bangladesh.

Keywords: *Zakat Supervision; Zakat Governance; Zakat Management Effectiveness; Poverty Reduction; Islamic Social Finance; PLS-SEM; Bangladesh*

INTRODUCTION

Poverty remains one of the most significant socio-economic challenges across the developing world despite sustained economic growth and numerous poverty alleviation initiatives. Although many countries have achieved improvements in income, education, and healthcare, a substantial proportion of their populations continue to experience economic vulnerability, unemployment, food insecurity, and limited access to essential public services (Rusydiana et al., 2025). In Muslim-majority countries, these challenges have encouraged policymakers and researchers to explore faith-based social finance mechanisms that complement conventional government welfare programmes (Shayee Almansoori & Al Zitawi, 2025). Among these mechanisms, Zakat has received increasing attention because of its dual role as a religious obligation and an institutional instrument for promoting social justice and economic redistribution (Shayee Almansoori & Al Zitawi, 2025).

Bangladesh has experienced remarkable economic progress during the past two decades, reflected in consistent GDP growth, improvements in human development indicators, and reductions in extreme poverty (Arman & Rafi, 2025). Nevertheless, poverty and income inequality remain major concerns, particularly among rural households, informal workers, female-headed families, and vulnerable communities (Siddiq & Akbar, 2023). Economic shocks, inflation, natural disasters, and the lingering effects of global crises have further

increased the financial vulnerability of low-income households. Consequently, strengthening sustainable poverty reduction mechanisms has become an important national development priority (Siddiq & Akbar, 2023).

Within the framework of Islamic social finance, Zakat represents one of the most effective instruments for reducing poverty and promoting equitable wealth distribution. As one of the five pillars of Islam, Zakat requires eligible Muslims to contribute a prescribed proportion of their wealth to specific categories of beneficiaries, including the poor, the needy, debtors, travelers, and other groups identified in Islamic jurisprudence (Zauro et al., 2020). Unlike voluntary charity (Sadaqah), Zakat is a mandatory obligation intended to create a continuous system of wealth circulation that reduces socio-economic disparities while strengthening social solidarity. When properly managed, Zakat can support immediate consumption needs while also financing education, healthcare, vocational training, entrepreneurship, and income-generating activities that contribute to long-term economic empowerment (Mustari et al., 2024).

Despite its considerable potential, the effectiveness of Zakat in Bangladesh remains limited due to weaknesses in governance and institutional supervision. Most Zakat is collected and distributed through informal channels, including families, local communities, religious leaders, and charitable organizations, with limited documentation, monitoring, or evaluation (Hoque, 2023). The absence of a centralized supervisory framework often leads to fragmented collection systems, duplication of beneficiaries, unequal distribution, weak accountability, and reduced public confidence in formal Zakat institutions. As a result, a significant portion of Zakat resources may not reach the households that need them most, thereby reducing its overall contribution to poverty alleviation.

International experience demonstrates that countries with well-established Zakat governance systems, such as Malaysia and Indonesia, have achieved greater institutional efficiency through standardized regulations, digital management systems, transparent auditing, and effective monitoring mechanisms (Asni et al., 2025; Nasution et al., 2025; Zauro et al., 2020). These governance practices have strengthened donor confidence, improved administrative efficiency, and enhanced the socio-economic impact of Zakat programmes. Such experiences provide valuable lessons for Bangladesh, where strengthening institutional supervision could substantially improve the effectiveness of Zakat as an instrument of Islamic social finance (Arman & Rafi, 2025; Muneer & Khan, 2022; Mustari et al., 2024; Zami & Heni Satar Nurhaida, 2025).

Although previous studies have extensively examined the relationship between Zakat and poverty reduction, relatively limited attention has been given to the role of supervision and governance in determining the effectiveness of Zakat programmes in Bangladesh (Aderemi & Ishak, 2023; Akhter et al., 2025; Hoque, 2023). Existing research has primarily focused on Zakat collection, distribution practices, and beneficiary welfare, while issues relating to institutional oversight, accountability, transparency, digital governance, and regulatory coordination remain insufficiently explored (Alam et al., 2022; Hak et al., 2024; Hassan et al., 2023; Muyassarah et al., 2025). This gap limits the development of evidence-based policy recommendations for improving Zakat management and maximizing its developmental impact.

The present study examines the effectiveness of Zakat supervision in reducing poverty in Bangladesh by analyzing empirical evidence collected from 384. Unlike previous studies that primarily focus on Zakat collection and distribution, this research investigates how governance mechanisms including transparency, accountability, monitoring, institutional coordination, and supervisory practices influence the effectiveness of Zakat programmes in improving the socio-economic well-being of beneficiaries. Using quantitative method, the study evaluates the relationship between Zakat supervision and poverty reduction while identifying the institutional challenges that hinder efficient Zakat management. The findings are expected to provide evidence-based recommendations for policymakers, Zakat institutions, and other stakeholders to strengthen governance frameworks and enhance the contribution of Zakat to sustainable poverty alleviation and inclusive socio-economic development in Bangladesh.

LITERATURE REVIEW

Zakat as an Instrument of Islamic Social Finance

Zakat is one of the fundamental pillars of Islam and serves as an institutional mechanism for wealth redistribution, social justice, and poverty alleviation. Unlike voluntary charitable contributions, Zakat is a compulsory financial obligation imposed on eligible Muslims, with the primary objective of transferring wealth from financially capable individuals to designated beneficiary groups (Nuradi et al., 2025). Beyond its religious significance, contemporary scholars increasingly recognize Zakat as an important component of Islamic social

finance that contributes to inclusive economic development by reducing income inequality and improving the welfare of disadvantaged populations (Siti et al., 2024).

Previous studies have consistently demonstrated that effective Zakat management extends beyond meeting the immediate consumption needs of poor households (Siti et al., 2024). When properly administered, Zakat can finance education, healthcare, vocational training, entrepreneurship, and other productive activities that enable beneficiaries to achieve long-term economic self-reliance (Ghaouri et al., 2023). Consequently, many researchers argue that Zakat should be viewed not merely as a charitable transfer but as a sustainable development instrument capable of promoting social inclusion and reducing structural poverty (Putra, 2026).

Zakat and Poverty Reduction

The relationship between Zakat and poverty alleviation has attracted considerable academic attention over the past two decades. Empirical studies generally report that well-managed Zakat programmes improve household income, increase consumption capacity, enhance educational opportunities, and strengthen access to healthcare services (Elhag, 2026; Siddiq & Akbar, 2023). Research conducted in different Muslim-majority countries suggests that productive Zakat programmes are more effective than one-time financial assistance because they encourage sustainable livelihood creation through skill development, microenterprise support, and employment generation.

Several researchers further argue that integrating Zakat with other Islamic financial instruments, such as Waqf, Musharakah, and Mudarabah, can generate long-term developmental benefits. Rather than functioning solely as a redistribution mechanism, integrated Islamic social finance enables Zakat institutions to invest in productive activities that create continuous income opportunities for beneficiaries (Elhag, 2026; Siddiq & Akbar, 2023). Such an approach transforms Zakat into a sustainable poverty reduction strategy while contributing to broader economic development objectives (Alwi et al., 2023).

Governance and Institutional Supervision of Zakat

Although the developmental potential of Zakat is widely acknowledged, its effectiveness depends largely on the quality of institutional governance. Transparency, accountability, monitoring, and effective supervision are frequently identified as the key determinants of successful Zakat management (Arman & Rafi, 2025; Muneer & Khan, 2022). Weak governance structures often result in inefficient fund utilization, unequal distribution, administrative duplication, and declining public confidence in Zakat institutions (Mustari et al., 2024).

Recent literature emphasizes that supervision is essential throughout the entire Zakat management process, including collection, verification of beneficiaries, fund allocation, implementation, monitoring, auditing, and impact evaluation (Asni et al., 2025). Effective supervisory mechanisms reduce the likelihood of misallocation, improve financial accountability, and ensure that Zakat resources reach eligible recipients in accordance with Shariah principles. Consequently, institutional governance has become one of the most widely discussed issues in contemporary Islamic social finance research (Sucipto et al., 2025).

Digital Transformation in Zakat Management

Advances in digital technology have significantly influenced the administration of Zakat in many Muslim countries. Researchers argue that digital platforms, electronic payment systems, integrated beneficiary databases, and real-time monitoring tools improve both operational efficiency and institutional transparency (Hoque, 2023). Digital governance enables Zakat institutions to maintain accurate financial records, reduce administrative costs, minimize duplication of beneficiaries, and strengthen donor confidence through greater accountability (Aderemi & Ishak, 2023). The adoption of digital technologies also facilitates evidence-based decision-making by allowing institutions to monitor Programme performance and evaluate the socio-economic outcomes of Zakat distribution (Muyassarah et al., 2025). As Islamic financial institutions increasingly embrace digital transformation, technology is becoming an important component of effective Zakat supervision and governance (Akhter et al., 2025).

International Experiences of Zakat Governance

Comparative studies demonstrate substantial differences in the effectiveness of Zakat management across Muslim-majority countries. Malaysia and Indonesia are frequently cited as successful examples because both countries have established structured institutional frameworks supported by national regulations, standardized operational procedures, digital management systems, and comprehensive supervisory mechanisms (Nasution et al., 2025; Zami & Heni Satar Nurhaida, 2025; Zauro et al., 2020). These institutional arrangements have

strengthened public trust, improved collection efficiency, and enhanced the developmental impact of Zakat programmes. In contrast, Bangladesh continues to rely predominantly on decentralized and informal Zakat distribution practices (Hassan et al., 2023). Most Zakat is distributed individually through family networks, local mosques, community organizations, or private charitable initiatives without standardized monitoring or centralized coordination. Although these informal arrangements fulfill important religious and social functions, they often limit transparency, create duplication among beneficiaries, and reduce the overall efficiency of poverty alleviation efforts (Hassan et al., 2023).

Zakat Management in Bangladesh

Existing research indicates that Bangladesh possesses considerable potential to utilize Zakat as an effective poverty reduction mechanism because of its large Muslim population and widespread religious commitment to Zakat payment (Alam et al., 2022; Hassan et al., 2023). However, several institutional challenges continue to constrain its effectiveness. Researchers frequently identify fragmented collection systems, limited coordination among Zakat organizations, inadequate monitoring, insufficient documentation, weak accountability mechanisms, and the absence of a centralized supervisory authority as the principal obstacles to efficient Zakat management (Alam et al., 2022). These institutional weaknesses reduce public confidence in formal Zakat organizations and limit the ability of policymakers to integrate Zakat into broader national poverty reduction strategies (Allawi & Wibowo, 2021). Consequently, strengthening governance structures has become increasingly important for maximizing the socio-economic benefits of Zakat in Bangladesh (Ayuniyyah et al., 2022).

Research Gap

Although the literature consistently recognizes Zakat as an effective instrument of Islamic social finance for reducing poverty and promoting social welfare, several important gaps remain in existing research. Most previous studies have concentrated on evaluating the socio-economic impact of Zakat distribution, beneficiary welfare, collection mechanisms, or the integration of Zakat with other Islamic financial instruments (Hassan et al., 2024; Rizapoor, 2025; Rohim et al., 2026; Shayee Almansoori & Al Zitawi, 2025). While these studies have demonstrated the positive contribution of Zakat to poverty alleviation, they provide limited attention to the institutional factors that determine whether Zakat programmes achieve their intended objectives. A significant gap exists in understanding the role of supervision and governance in enhancing the effectiveness of Zakat management. Existing studies frequently acknowledge issues such as weak accountability, inadequate transparency, fragmented administration, and inefficient monitoring; however, relatively few have empirically examined how supervisory mechanisms influence the performance of Zakat institutions (Mukhlishin et al., 2025; Rusydiana et al., 2025; Uddin & Hossain, 2025). As a result, there is insufficient evidence regarding the extent to which effective supervision contributes to equitable fund distribution, improved institutional accountability, and sustainable poverty reduction. Furthermore, much of the existing empirical evidence originates from countries such as Malaysia and Indonesia, where Zakat is administered through centralized institutional frameworks supported by comprehensive regulatory systems (Asni et al., 2025; Nasution et al., 2025; Zami & Heni Satar Nurhaida, 2025; Zauro et al., 2020). In contrast, Bangladesh continues to rely largely on decentralized and informal Zakat management practices, with limited coordination among government agencies, religious institutions, and private charitable organizations (Arman & Rafi, 2025; Muneer & Khan, 2022). Consequently, findings from other countries cannot be directly generalized to the Bangladeshi context because of differences in institutional structures, governance arrangements, socio-economic conditions, and policy environments. Another limitation of previous research is the limited integration of modern governance principles into the study of Zakat administration (Mustari et al., 2024; Sucipto et al., 2025). Contemporary issues such as digital monitoring, institutional transparency, performance evaluation, stakeholder accountability, and evidence-based supervision have received comparatively little empirical attention in Bangladesh. Consequently, policymakers and Zakat administrators continue to face challenges in designing governance systems capable of maximizing the developmental impact of Zakat resources (Aderemi & Ishak, 2023; Hoque, 2023).

This study addresses these gaps by examining the role of Zakat supervision in strengthening poverty reduction efforts in Bangladesh. Rather than focusing solely on the collection or distribution of Zakat funds, the research investigates how effective supervision, accountability, transparency, monitoring, and institutional governance contribute to improving the efficiency and effectiveness of Zakat management. By providing empirical evidence from Bangladesh, this study contributes to the growing literature on Islamic social finance

and offers practical recommendations for developing a more transparent, accountable, and sustainable Zakat governance framework that supports national poverty reduction strategies.

Theoretical Foundation

This study is primarily grounded in Agency Theory and Islamic Social Finance Theory, which together provide a comprehensive framework for explaining how supervision enhances the governance and effectiveness of Zakat institutions, ultimately contributing to poverty reduction (Rashid et al., 2025). Agency Theory explains the relationship between principals and agents in situations where one party is entrusted to manage resources on behalf of another. Within the context of Zakat management, Zakat payers (Muzakki) act as the principals, while Zakat institutions and administrators (Amil) serve as the agents responsible for collecting, managing, and distributing Zakat funds according to Islamic principles (Setyaningrum et al., 2022). Because Zakat contributors generally have limited direct control over the management of their contributions, effective supervision becomes essential to minimize information asymmetry, strengthen accountability, and ensure that resources are distributed fairly and efficiently. supervisory mechanisms including monitoring, auditing, transparent reporting, and regulatory oversight help reduce agency problems while increasing public confidence in Zakat institutions (Setyaningrum et al., 2022). Islamic Social Finance Theory complements Agency Theory by emphasizing that financial instruments such as Zakat are designed not only to fulfill religious obligations but also to promote social justice, equitable wealth distribution, and sustainable socio-economic development (Danlami et al., 2023). Within this framework, Zakat functions as a structured mechanism for transferring wealth from financially capable individuals to eligible beneficiaries, thereby reducing poverty and strengthening social solidarity. However, the successful realization of these objectives depends on effective institutional governance that ensures transparency, efficiency, and compliance with Shariah principles (Napitupulu et al., 2024). Integrating these theoretical perspectives provides a logical explanation for the relationships examined in this study. Zakat supervision establishes effective governance by improving accountability, transparency, monitoring, and institutional coordination. Improved governance enhances the operational effectiveness of Zakat institutions by ensuring that funds are collected, managed, and distributed efficiently to eligible recipients (Napitupulu et al., 2024). Greater institutional effectiveness subsequently strengthens the contribution of Zakat programmes to poverty reduction by improving beneficiaries' access to financial assistance, livelihood opportunities, education, healthcare, and other essential services.

Accordingly, the theoretical framework proposes that the influence of Zakat supervision on poverty reduction is not solely direct. Instead, this relationship operates through sequential improvements in institutional governance and Zakat effectiveness. This perspective provides the conceptual foundation for developing the study's hypotheses and empirically examining the pathways through which effective supervision enhances the developmental role of Zakat in Bangladesh.



Figure 1: Conceptual Framework

Hypothesis Development

supervision is fundamental to establishing effective governance within Zakat institutions. Supervision ensures that Zakat collection, management, and distribution are conducted in accordance with established policies, Shariah principles, and regulatory requirements. It also strengthens institutional transparency, accountability, monitoring, and coordination among stakeholders. According to Agency Theory, effective supervision reduces information asymmetry between Zakat contributors (Muzakki) and Zakat administrators (Amil), thereby enhancing organizational accountability and public trust (Danlami et al., 2023). Previous studies have consistently reported that transparent supervision and robust monitoring mechanisms improve governance quality by strengthening institutional control, financial accountability, and compliance with regulatory standards (Muneer & Khan, 2022; Mustari et al., 2024). Therefore, Zakat supervision is expected to positively influence the governance of Zakat institutions.

H1: Zakat Supervision has a positive and significant effect on Zakat Governance.

Effective governance provides the institutional foundation necessary for efficient Zakat management. Governance practices such as clear operational policies, transparent decision-making, stakeholder participation, and effective oversight contribute to the efficient collection, proper utilization, targeted distribution, and continuous monitoring of Zakat funds (Hak et al., 2024; Nuradi et al., 2025). Institutional Theory suggests that organizations operating under strong governance structures are more capable of achieving operational efficiency and maintaining stakeholder confidence. Empirical studies conducted in Malaysia and Indonesia have demonstrated that well-governed Zakat institutions consistently achieve better operational performance and greater beneficiary satisfaction than institutions with weaker governance systems (Alam et al., 2022; Allawi & Wibowo, 2021). Consequently, improved governance is expected to enhance the effectiveness of Zakat management.

H2: Zakat Governance has a positive and significant effect on Zakat Management Effectiveness.

The effectiveness of Zakat management determines whether collected funds generate meaningful socio-economic benefits for eligible beneficiaries. Effective management ensures that Zakat resources are collected efficiently, distributed to deserving recipients, utilized productively, and monitored continuously to maximize developmental outcomes. Rather than providing only temporary financial relief, effective Zakat management can improve household income, support education and healthcare, create employment opportunities, and strengthen economic resilience among vulnerable populations. Previous empirical research has shown that productive and well-managed Zakat programmes significantly contribute to poverty alleviation and community development

(Ayuniyyah et al., 2022; Hassan et al., 2024). Therefore, greater Zakat management effectiveness is expected to contribute positively to poverty reduction.

H3: Zakat Management Effectiveness has a positive and significant effect on Poverty Reduction.

Although supervision directly strengthens institutional accountability, its influence on operational performance is largely realized through improvements in governance. Effective supervisory practices establish transparent procedures, strengthen institutional coordination, and improve decision-making processes, all of which contribute to better organizational governance. Enhanced governance subsequently improves the effectiveness of Zakat management (Rizapoor, 2025; Shayee Almansoori & Al Zitawi, 2025). Therefore, governance serves as an important institutional mechanism through which supervision influences organizational performance.

H4: Zakat Governance mediates the relationship between Zakat Supervision and Zakat Management Effectiveness.

Strong governance alone cannot achieve poverty reduction unless it is translated into effective operational performance. Governance improves institutional policies and accountability, while effective management ensures that Zakat resources are collected, distributed, monitored, and utilized efficiently (Rohim et al., 2026; Rusydiana et al., 2025). Consequently, the socio-economic benefits of governance are realized through improvements in Zakat management effectiveness (Mukhlishin et al., 2025). Therefore, Zakat management effectiveness is expected to mediate the relationship between governance and poverty reduction.

H5: Zakat Management Effectiveness mediates the relationship between Zakat Governance and Poverty Reduction.

This study proposes that the contribution of Zakat supervision to poverty reduction occurs through a sequential institutional process. supervision enhances governance by strengthening transparency, accountability, monitoring, and regulatory compliance. Improved governance subsequently increases the effectiveness of Zakat management, resulting in more efficient collection, equitable distribution, better utilization of funds, and greater socio-economic benefits for eligible beneficiaries (Mukhlishin et al., 2025; Rusydiana et al., 2025; Uddin & Hossain, 2025). Accordingly, the influence of supervision on poverty reduction is expected to operate indirectly through the combined mediating roles of governance and Zakat management effectiveness.

H6: Zakat Supervision has a positive indirect effect on Poverty Reduction through the sequential mediating roles of Zakat Governance and Zakat Management Effectiveness.

Methodology

This study employed a quantitative, cross-sectional research design to examine the relationships among Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty Reduction in Bangladesh. A quantitative approach was considered because it facilitates the empirical testing of the proposed conceptual framework and the examination of causal relationships among the study constructs. Primary data were collected through a structured questionnaire administered to key stakeholders involved in Zakat management in Bangladesh, including Zakat administrators, donors (Muzakki), beneficiaries (Mustahiq), and representatives of Zakat institutions. The measurement items were adapted from established studies on Islamic social finance, institutional governance, and Zakat management to ensure content validity and contextual relevance. All items were measured using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A total of 384 respondents participated in the study. The sample size was determined based on Cochran's sample size formula, which is widely accepted for large populations in social science research (Cochran, 1942). A purposive sampling technique was employed to select respondents who possessed relevant knowledge and practical experience regarding Zakat supervision, governance, and management (Alwi et al., 2023; Asni et al., 2025; Nasution et al., 2025). This approach ensured that the collected data reflected informed perceptions and experiences of individuals directly engaged with Zakat administration and its beneficiaries. The data collection period was from January 2026 to April 2026, and it follows all ethical considerations and maintain the confident and security of the respondents. The collected data were analyzed using SmartPLS 4 following the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The measurement model was evaluated by assessing indicator reliability, internal consistency reliability (Cronbach's Alpha and Composite Reliability), convergent validity (Average Variance Extracted), and discriminant validity using the Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio. Subsequently, the structural model was assessed by examining collinearity (Variance Inflation Factor), path coefficients, coefficients of determination (R^2), effect sizes (f^2),

predictive relevance (Q^2), and bootstrapping with 5,000 resamples to test the proposed hypotheses and mediation effects (Fornell & Larcker, 1981; Lindner & Lindner, 2024; Sarstedt et al., 2021).

RESULTS AND DISCUSSION

Demographic Overview of the Respondent

The demographic characteristics of the respondents provide an overview of the background and diversity of the participants involved in the study. Understanding these characteristics is important because respondents' demographic profiles, such as gender, age, education, occupation, respondent category, and experience with zakat, may influence their perceptions, knowledge, and responses regarding the research topic. A total of 384 respondents participated in the survey, representing different groups associated with zakat activities, including donors, beneficiaries, administrators, and institutional representatives.

Table 2 represents the overall information of the respondents. As presented in Table 2, the majority of respondents were male (64.3%), while 35.7% were female, indicating a higher participation rate among male respondents. Regarding age distribution, the largest group belonged to the 26–35 years category (29.9%), followed by respondents aged 36–45 years (23.7%) and 46–55 years (20.6%). Respondents below 25 years accounted for 16.7%, while only 9.1% were above 55 years of age. In terms of educational background, most respondents had a Bachelor's degree (31.3%), followed by a Master's degree (25.5%) and Higher Secondary education (20.8%). A smaller proportion of respondents had Secondary education (10.7%), other qualifications (7.0%), and PhD degrees (4.7%). This indicates that the respondents generally possessed a moderate to high level of educational attainment. The occupational profile shows that respondents came from diverse professional backgrounds. The highest representation was from individuals associated with religious institutions (16.1%), followed by government service (15.4%), business (14.8%), and students (14.6%). Respondents from private service, NGOs, and other occupations also contributed to the study, ensuring representation from various social and professional groups. Considering respondent categories, zakat donors (Muzakki) formed the largest group with 32.6%, followed by zakat beneficiaries (Mustahiq) at 27.9%. Representatives of zakat institutions accounted for 21.1%, while zakat administrators (Amil) represented 18.5% of the sample. This distribution reflects the inclusion of different stakeholders involved in the zakat system.

Table 1: Demographic Information of the Respondents

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	137	35.7
	Male	247	64.3
Age	Below 25	64	16.7
	26–35	115	29.9
	36–45	91	23.7
	46–55	79	20.6
	Above 55	35	9.1
Education	Secondary	41	10.7
	Higher Secondary	80	20.8
	Bachelor's	120	31.3
	Master's	98	25.5
	PhD	18	4.7
	Others	27	7.0
Occupation	Business	57	14.8
	Government Service	59	15.4
	NGO	45	11.7
	Private Service	52	13.5
	Religious Institution	62	16.1
	Student	56	14.6
	Others	53	13.8
Respondent Category	Zakat Donor (Muzakki)	125	32.6
	Zakat Beneficiary (Mustahiq)	107	27.9
	Representative of Zakat Institution	81	21.1
	Zakat Administrator (Amil)	71	18.5
Zakat Experience	Less than 2 years	75	19.5
	2–5 years	138	35.9
	6–10 years	90	23.4
	More than 10 years	81	21.1
Total Respondents	—	**384**	**100.0**

Finally, respondents' experience with zakat activities varied. The largest proportion had 2–5 years of experience (35.9%), followed by those with 6–10 years (23.4%) and more than 10 years (21.1%). Respondents with less than 2 years of experience represented 19.5% of the total sample. Overall, the demographic profile demonstrates that the study included respondents with diverse backgrounds, experiences, and roles, which strengthens the reliability and representativeness of the findings.

Descriptive Analysis

The descriptive statistics of the core variables employed in the research are found in Table 3, which is the ZS (Zakat Supervision), ZG (Zakat Governance), ZME (Zakat Management Effectiveness), and PR (Poverty Reduction). The table provides a summary of the mean, the standard deviation and the variance of each item measured under these constructs on the basis of 384 participant's responses. The results of descriptive statistics are summarized below:

Table 2 presents the descriptive statistics of the study variables based on responses from 384 participants. The mean values of all items range from 3.46 to 3.62, indicating that respondents generally showed a moderate to positive level of agreement with the statements. The highest mean score was recorded for ZS2 (Mean = 3.62, SD = 0.837), while the lowest was observed for ZG3 (Mean = 3.46, SD = 0.770). The standard deviation values range between 0.696 and 0.845, suggesting that respondents' opinions were relatively consistent with limited variation in their responses. The variance values also show a similar pattern, indicating acceptable dispersion across all measurement items. Overall, the results suggest that the respondents had generally favorable perceptions toward the constructs measured in the study, with no significant differences in response patterns.

Table 2: Descriptive Statistics (Variables)

	N	Mean	Std. Deviation	Variance
ZS1	384	3.61	0.845	0.714
ZS2	384	3.62	0.837	0.700
ZS3	384	3.59	0.825	0.681
ZS4	384	3.60	0.812	0.659
ZS5	384	3.61	0.810	0.656
ZS6	384	3.51	0.814	0.663
ZG1	384	3.48	0.768	0.590
ZG2	384	3.55	0.783	0.613
ZG3	384	3.46	0.770	0.594
ZG4	384	3.51	0.785	0.616
ZG5	384	3.57	0.789	0.622
ZG6	384	3.48	0.758	0.574
ZME1	384	3.53	0.757	0.574
ZME2	384	3.58	0.696	0.484
ZME3	384	3.56	0.786	0.618
ZME4	384	3.54	0.722	0.521
ZME5	384	3.53	0.784	0.615
ZME6	384	3.53	0.722	0.521
PR1	384	3.51	0.758	0.574
PR2	384	3.50	0.758	0.574
PR3	384	3.50	0.765	0.585
PR4	384	3.49	0.761	0.580
PR5	384	3.51	0.768	0.590
PR6	384	3.49	0.751	0.564
Valid N (listwise)	384			

Structural Equation Model

Structural equation modeling (SEM) constitutes a collection of sophisticated statistical methodologies employed for the empirical examination of hypotheses concerning causal relationships between both observed and latent variables across diverse fields including psychology, education, medicine, management, and ecology (Obiageli & Auwalu, 2024). Structural Equation Modeling (SEM) synthesizes an array of statistical practices, featuring regression analysis, factor analysis, and path analysis, to thoroughly analyze theories concerning causal dynamics (Sarstedt & Ringle, 2020). Its significance is particularly pronounced due to its capacity to simultaneously model both manifest and latent variables, thereby rendering it an adaptable instrument in empirical research.

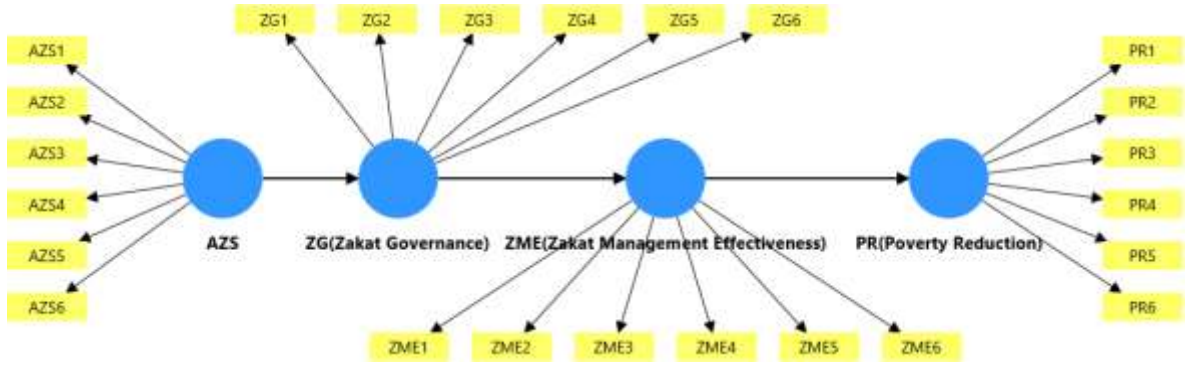


Figure 2: Structural Equation Model

The figure 3 presents the findings of the empirical analysis based on the proposed conceptual framework. The data were analyzed using SmartPLS 4 to evaluate both the measurement model and the structural model. The measurement model was first assessed to establish the reliability and validity of the constructs by examining indicator loadings, internal consistency, convergent validity, and discriminant validity. Subsequently, the structural model was evaluated to test the proposed hypotheses by analyzing the path coefficients, coefficient of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and mediation effects. The results provide empirical evidence on the relationships among Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty Reduction in Bangladesh.

Measurement Model

Measurement models frequently incorporate theoretical constructs that forecast the functionality of measurement instruments and the characteristics of measurement scales (Tal, 2024). The evaluation of a measurement model is an important aspect of Structural Equation Modeling (SEM) since it provides evidence of the reliability and validity of the variables and their indicators.

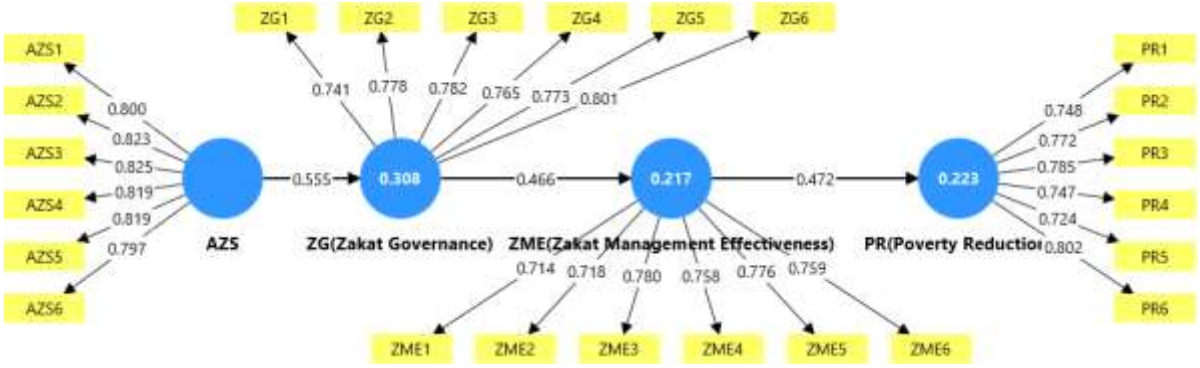


Figure 3: Measurement Model

Figure 4 demonstrates the measurement model. The measurement model was assessed by examining the outer loadings of the indicators associated with each latent construct. As shown in Figure 4, the outer loadings for Zakat Supervision (ZS) ranged from 0.797 to 0.825, indicating that all six indicators strongly represented the construct. Similarly, the loadings for Zakat Governance (ZG) ranged from 0.741 to 0.801, while those for Zakat Management Effectiveness (ZME) ranged from 0.714 to 0.780. The indicators for Poverty Reduction (PR) exhibited loadings between 0.724 and 0.802. Since all indicator loadings exceeded the recommended threshold of 0.70, the results demonstrate satisfactory indicator reliability and confirm that the measurement items adequately represent their respective latent constructs. Overall, the measurement model provides a reliable basis for further assessment of construct reliability, validity, and the structural relationships among the study variables.

Factor Loadings

Table 3 summarizes the factor loading of each observed variable to the corresponding latent constructs and was derived using SmartPLS analysis; ZS (Zakat Supervision), ZG(Zakat Governance), ZME(Zakat Management Effectiveness), and PR (Poverty Reduction) .

Table 3: Factor Loadings

	ZS (Zakat Supervision)	PR(Poverty Reduction)	ZG (Zakat Governance)	ZME(Zakat Management Effectiveness)
ZS1	0.800			
ZS2	0.823			
ZS3	0.825			
ZS4	0.819			
ZS5	0.819			
ZS6	0.797			
PR1		0.748		
PR2		0.772		
PR3		0.785		
PR4		0.747		
PR5		0.724		
PR6		0.802		
ZG1			0.741	
ZG2			0.778	
ZG3			0.782	
ZG4			0.765	
ZG5			0.773	
ZG6			0.801	
ZME1				0.714
ZME2				0.718
ZME3				0.780
ZME4				0.758
ZME5				0.776
ZME6				0.759

Factor loadings were examined to assess the reliability of the measurement items associated with each latent construct. As presented in Table 3, the factor loadings for Zakat Supervision (ZS) ranged from 0.797 to 0.825, Zakat Governance (ZG) from 0.741 to 0.801, Zakat Management Effectiveness (ZME) from 0.714 to 0.780, and Poverty Reduction (PR) from 0.724 to 0.802. Since all factor loadings exceeded the recommended threshold of 0.70, each measurement item demonstrated satisfactory indicator reliability and contributed meaningfully to its respective construct. These results indicate that the observed variables adequately represent the underlying latent constructs and provide a reliable foundation for subsequent reliability, validity, and structural model analyses.

Reliability Analysis

In order to ascertain the consistency and dependability of the measurement model, both Cronbach's Alpha (α) and Composite Reliability (rho_a) were computed for each latent construct. While Cronbach's Alpha serves as an indicator of internal consistency, Composite Reliability is frequently regarded as a more precise estimator within the realm of Structural Equation Modeling since it incorporates the actual factor loadings (Hair et al., 2010). A benchmark of 0.70 or above is typically deemed acceptable for both metrics, with values exceeding 0.90 signifying exceptional reliability (Sarstedt et al., 2021).

Table 4: Construct Reliability (Cronbach's Alpha and Composite Reliability)

	Cronbach's alpha	Composite reliability (rho_a)
ZS (Zakat Supervision)	0.898	0.902
PR (Poverty Reduction)	0.857	0.858
ZG (Zakat Governance)	0.866	0.867
ZME (Zakat Management Effectiveness)	0.846	0.851

The reliability of the measurement constructs was assessed using Cronbach's Alpha and Composite Reliability (rho_a). As shown in Table 4, the Cronbach's Alpha values ranged from 0.846 to 0.898, while the Composite Reliability values ranged from 0.851 to 0.902. All values exceeded the recommended threshold of 0.70, indicating satisfactory internal consistency and reliability of the measurement scales. Among the constructs, Zakat Supervision (ZS) demonstrated the highest reliability (Cronbach's Alpha = 0.898; Composite Reliability = 0.902), whereas Zakat Management Effectiveness (ZME) showed the lowest, but still acceptable, reliability (Cronbach's Alpha = 0.846; Composite Reliability = 0.851). Overall, the results confirm that the

measurement instrument is reliable and suitable for subsequent validity assessment and structural model analysis (Hu & Bentler, 1999).

Construct Validity

In order to evaluate the overarching validity of the measurement model, the construct validity was scrutinized through the lenses of convergent and discriminant validity. Construct validity is critical in ensuring that the measurement items faithfully represent the theoretical constructs they are designed to assess (Fornell & Larcker, 1981). This section delineates the findings pertaining to convergent validity, employing Average Variance Extracted (AVE) as the principal evaluative measure.

Convergent Validity: Convergent validity reflects the extent to which multiple items that assess the same construct genuinely converge or exhibit a substantial degree of shared variance. Within the paradigm of Structural Equation Modeling (SEM), Average Variance Extracted (AVE) operates as a standard for this analysis. An AVE value of 0.50 or greater is deemed acceptable, as it implies that the construct elucidates a minimum of 50% of the variance inherent in its observed variables (Fornell & Larcker, 1981).

Table 5: Construct Convergent Validity (AVE)

	Average variance extracted (AVE)
ZS (Zakat Supervision)	0.662
PR (Poverty Reduction)	0.583
ZG (Zakat Governance)	0.598
ZME (Zakat Management Effectiveness)	0.564

Convergent validity was assessed using the Average Variance Extracted (AVE), which measures the extent to which the indicators explain the variance of their respective latent constructs. As presented in Table 5, the AVE values ranged from 0.564 to 0.662. Specifically, Zakat Supervision (ZS) recorded the highest AVE (0.662), followed by Zakat Governance (ZG) (0.598), Poverty Reduction (PR) (0.583), and Zakat Management Effectiveness (ZME) (0.564). Since all AVE values exceeded the recommended threshold of 0.50, the results confirm satisfactory convergent validity, indicating that the indicators adequately capture the underlying constructs. Therefore, the measurement model demonstrates an acceptable level of construct validity and is suitable for further structural model analysis.

Discriminant Validity: Discriminant validity pertains to the degree to which a construct is genuinely separate from other constructs, in both theoretical and empirical dimensions. The Fornell-Larcker criterion is frequently employed to assess discriminant validity. Per this methodology, the square root of the Average Variance Extracted (AVE) for each construct (indicated on the diagonal) must exceed its correlation with any alternative construct (represented off-diagonal) (Fornell & Larcker, 1981).

Table 6: Discriminant Validity (Fornell-Larcker criterion)

	ZS (Zakat Supervision)	PR (Poverty Reduction)	ZG (Zakat Governance)	ZME (Zakat Management Effectiveness)
ZS (Zakat Supervision)	0.814			
PR (Poverty Reduction)	0.147	0.763		
ZG (Zakat Governance)	0.555	0.283	0.774	
ZME (Zakat Management Effectiveness)	0.256	0.472	0.466	0.751

Discriminant validity was assessed using the Fornell–Larcker criterion to determine whether each construct was empirically distinct from the others. As shown in Table 6, the square root of the Average Variance Extracted (AVE), represented by the diagonal values, was higher than the corresponding inter-construct correlations for all latent variables. Specifically, the diagonal values were 0.814 for Zakat Supervision (ZS), 0.774 for Zakat Governance (ZG), 0.751 for Zakat Management Effectiveness (ZME), and 0.763 for Poverty Reduction (PR). Since these values exceeded the correlations with other constructs, the results confirm satisfactory discriminant validity. This indicates that each construct measures a unique concept and is empirically distinct from the other constructs included in the study.

Table 7: Discriminant Validity (HTMT)

	ZS (Zakat Supervision)	PR (Poverty Reduction)	ZG (Zakat Governance)	ZME (Zakat Management Effectiveness)
ZS (Zakat Supervision)				
PR (Poverty Reduction)	0.167			
ZG (Zakat Governance)	0.626	0.327		
ZME (Zakat Management Effectiveness)	0.288	0.550	0.537	

The Heterotrait–Monotrait (HTMT) ratio was used as an additional measure to assess discriminant validity among the study constructs. As presented in Table 7, the HTMT values ranged from 0.167 to 0.626, with the highest value observed between Zakat Supervision (ZS) and Zakat Governance (ZG) (0.626), and the lowest value between Zakat Supervision (ZS) and Poverty Reduction (PR) (0.167). Since all HTMT values were well below the recommended threshold of 0.85, the results confirm that each construct is empirically distinct from the others. Therefore, the measurement model demonstrates satisfactory discriminant validity, indicating that the constructs capture different theoretical concepts without significant overlap.

Table 8: Discriminant Validity (Cross-Loadings)

	ZS(Zakat Supervision)	PR(Poverty Reduction)	ZG(Zakat Governance)	ZME(Zakat Management Effectiveness)
ZS1	0.800	0.114	0.406	0.168
ZS2	0.823	0.140	0.440	0.203
ZS3	0.825	0.104	0.514	0.216
ZS4	0.819	0.108	0.464	0.200
ZS5	0.819	0.124	0.465	0.241
ZS6	0.797	0.130	0.406	0.217
PR1	0.118	0.748	0.240	0.372
PR2	0.122	0.772	0.241	0.386
PR3	0.098	0.785	0.176	0.352
PR4	0.092	0.747	0.230	0.363
PR5	0.074	0.724	0.165	0.319
PR6	0.162	0.802	0.236	0.364
ZG1	0.404	0.172	0.741	0.318
ZG2	0.434	0.216	0.778	0.388
ZG3	0.421	0.244	0.782	0.375
ZG4	0.459	0.286	0.765	0.310
ZG5	0.411	0.203	0.773	0.380
ZG6	0.448	0.194	0.801	0.386
ZME1	0.094	0.361	0.260	0.714
ZME2	0.205	0.336	0.321	0.718
ZME3	0.171	0.323	0.349	0.780
ZME4	0.222	0.317	0.349	0.758
ZME5	0.251	0.414	0.422	0.776
ZME6	0.192	0.365	0.375	0.759

Discriminant validity was further assessed using the cross-loadings criterion to examine whether each measurement item loaded more strongly on its assigned construct than on the other constructs. As shown in Table 8, all indicators exhibited their highest loading on their respective latent constructs. Specifically, the loadings for Zakat Supervision (ZS) ranged from 0.797 to 0.825, Zakat Governance (ZG) from 0.741 to 0.801, Zakat Management Effectiveness (ZME) from 0.714 to 0.780, and Poverty Reduction (PR) from 0.724 to 0.802. In contrast, the cross-loadings on the remaining constructs were substantially lower. These findings confirm that each indicator is more strongly associated with its intended construct than with any other construct, thereby providing additional evidence of satisfactory discriminant validity and supporting the adequacy of the measurement model.

Model Fitness Testing

Table 9: Model Fit Summery

	Saturated model	Estimated model
SRMR	0.050	0.052
d_ULS	0.755	0.811
d_G	0.205	0.206
Chi-square	453.947	455.534
NFI	0.896	0.896

The overall model fit was evaluated using the Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), and other model fit statistics (J. F. Hair et al., 2010). As presented in Table 9, the SRMR values were 0.050 for the saturated model and 0.052 for the estimated model, both of which are below the recommended threshold of 0.08, indicating a good model fit. The Normed Fit Index (NFI) was 0.896 for both models, suggesting an acceptable level of model fit as it is close to the recommended value of 0.90 (Hu & Bentler, 1999). In addition, the d_ULS and d_G values were relatively low, indicating only minor discrepancies between the observed and estimated covariance matrices. Overall, the model fit indices demonstrate that the proposed PLS-SEM model adequately fits the data and is for testing the hypothesized relationships among the study constructs.

Hypothesis Testing

To investigate the interrelations among constructs within the proposed structural model, path coefficients (β), standard deviations, t-statistics, and p-values were systematically assessed for each hypothesis through the application of Partial Least Squares Structural Equation Modeling (PLS-SEM) (Hair et al., 2010). The findings delineated in Table 10 elucidate whether the posited paths achieve statistical significance, adhering to a conventional significance threshold of $p < 0.05$.

Table 10: Summary of Hypothesis Test Results

	Beta Coefficient	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ZS (Zakat Supervision) -> ZG (Zakat Governance)	0.555	0.036	15.252	0.000
ZG (Zakat Governance) -> ZME (Zakat Management Effectiveness)	0.466	0.042	11.098	0.000
ZME (Zakat Management Effectiveness) -> PR (Poverty Reduction)	0.472	0.037	12.863	0.000

The structural model was evaluated using the bootstrapping procedure in SmartPLS 4 to examine the significance of the proposed hypotheses. As presented in Table 10, all hypothesized relationships were found to be positive and statistically significant.

H1: Zakat Supervision has a positive and significant effect on Zakat Governance.

Specifically, Zakat Supervision (ZS) had a significant positive effect on Zakat Governance (ZG) ($\beta = 0.555$, $t = 15.252$, $p < 0.001$), providing support for H1. This indicates that stronger supervisory practices enhance the governance of Zakat institutions.

H2: Zakat Governance has a positive and significant effect on Zakat Management Effectiveness.

Similarly, Zakat Governance (ZG) exerted a significant positive influence on Zakat Management Effectiveness (ZME) ($\beta = 0.466$, $t = 11.098$, $p < 0.001$), supporting H2. This finding suggests that sound governance practices contribute to more effective Zakat management.

H3: Zakat Management Effectiveness has a positive and significant effect on Poverty Reduction.

Furthermore, Zakat Management Effectiveness (ZME) had a significant positive effect on Poverty Reduction (PR) ($\beta = 0.472$, $t = 12.863$, $p < 0.001$), confirming H3. This result indicates that effective management of Zakat resources plays an important role in improving poverty alleviation outcomes in Bangladesh.

Overall, the findings provide strong empirical support for the proposed structural model and demonstrate that Zakat supervision contributes to poverty reduction indirectly by strengthening governance and improving the effectiveness of Zakat management.

Mediation Analysis

To further examine the underlying mechanisms through which Zakat Supervision influences Poverty Reduction, a mediation analysis was conducted using the bootstrapping procedure in SmartPLS 4. The analysis assessed the indirect effects of Zakat Governance (ZG) and Zakat Management Effectiveness (ZME), both individually and sequentially. Mediation was evaluated based on the significance of the indirect effects, with statistically significant indirect paths indicating the presence of mediation. Because the direct relationships among the constructs were also statistically significant, the results indicate complementary partial mediation, suggesting that the mediators strengthen rather than replace the direct relationships within the proposed model.

Table 11: Mediation Analysis

	Beta Coefficient	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ZS (Zakat Supervision)-> ZG (Zakat Governance) -> ZME (Zakat Management Effectiveness)	0.259	0.032	8.209	0.000
ZS (Zakat Supervision) -> -> ZG (Zakat Governance) -> ZME(Zakat Management Effectiveness) -> PR(Poverty Reduction)	0.122	0.020	6.239	0.000
ZG (Zakat Governance) -> ZME (Zakat Management Effectiveness) -> PR (Poverty Reduction)	0.220	0.029	7.704	0.000

H4: Zakat Governance mediates the relationship between Zakat Supervision and Zakat Management Effectiveness.

As presented in Table 11, the indirect effect of Zakat Supervision (ZS) on Zakat Management Effectiveness (ZME) through Zakat Governance (ZG) was positive and statistically significant ($\beta = 0.259$, $t = 8.209$, $p < 0.001$), supporting H4. This finding indicates that improvements in Zakat governance partially explain how supervision enhances the effectiveness of Zakat management.

H5: Zakat Management Effectiveness mediates the relationship between Zakat Governance and Poverty Reduction.

Furthermore, Zakat Management Effectiveness (ZME) significantly mediated the relationship between Zakat Governance (ZG) and Poverty Reduction (PR) ($\beta = 0.220$, $t = 7.704$, $p < 0.001$), supporting H5. This indicates that good governance enhances poverty reduction primarily by improving the effectiveness with which Zakat funds are collected, managed, and distributed.

H6: Zakat Supervision has a positive indirect effect on Poverty Reduction through the sequential mediating roles of Zakat Governance and Zakat Management Effectiveness.

The sequential indirect effect of Zakat Supervision (ZS) on Poverty Reduction (PR) through Zakat Governance (ZG) and Zakat Management Effectiveness (ZME) was also positive and significant ($\beta = 0.122$, $t = 6.239$, $p < 0.001$), providing support for H6. This result suggests that effective supervision contributes to poverty reduction by first strengthening governance and subsequently improving the effectiveness of Zakat management.

Overall, the mediation results demonstrate that Zakat Governance and Zakat Management Effectiveness serve as important mechanisms through which Zakat Supervision contributes to poverty reduction. The significant direct and indirect effects indicate complementary partial mediation, confirming that effective supervision not only has a direct influence on institutional performance but also enhances poverty reduction through improvements in governance and management effectiveness.

Final Validated Model

The final validated model underwent evaluation predicated upon the strength, reliability, and significance of the associations between latent constructs and their corresponding observed variables, employing the outer loadings and bootstrapping results delineated in Table 12. All items attained statistically significant outer loadings ($p < 0.001$), thereby substantiating the robustness of the measurement model (Hair & Alamer, 2022; Sarstedt et al., 2023).

Table 12: Outer Loadings

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ZS1 <- ZS (Zakat Supervision)	0.800	0.799	0.019	42.033	0.000
ZS2 <- ZS (Zakat Supervision)	0.823	0.822	0.018	44.991	0.000
ZS3 <- ZS (Zakat Supervision)	0.825	0.825	0.016	53.122	0.000
ZS4 <- ZS (Zakat Supervision)	0.819	0.818	0.018	44.553	0.000
ZS5 <- ZS (Zakat Supervision)	0.819	0.819	0.018	44.709	0.000
ZS6 <- ZS (Zakat Supervision)	0.797	0.796	0.019	41.793	0.000
PR1 <- PR (Poverty Reduction)	0.748	0.747	0.024	30.600	0.000
PR2 <- PR (Poverty Reduction)	0.772	0.771	0.022	34.576	0.000
PR3 <- PR (Poverty Reduction)	0.785	0.784	0.023	34.311	0.000
PR4 <- PR (Poverty Reduction)	0.747	0.745	0.026	28.744	0.000
PR5 <- PR (Poverty Reduction)	0.724	0.724	0.028	25.993	0.000
PR6 <- PR (Poverty Reduction)	0.802	0.801	0.020	39.942	0.000
ZG1 <- ZG (Zakat Governance)	0.741	0.740	0.027	27.425	0.000
ZG2 <- ZG (Zakat Governance)	0.778	0.778	0.023	34.059	0.000
ZG3 <- ZG (Zakat Governance)	0.782	0.781	0.022	35.310	0.000
ZG4 <- ZG (Zakat Governance)	0.765	0.764	0.022	34.342	0.000
ZG5 <- ZG (Zakat Governance)	0.773	0.772	0.022	34.955	0.000
ZG6 <- ZG (Zakat Governance)	0.801	0.800	0.019	41.743	0.000
ZME1 <- ZME (Zakat Management Effectiveness)	0.714	0.713	0.029	24.977	0.000
ZME2 <- ZME (Zakat Management Effectiveness)	0.718	0.717	0.031	23.232	0.000
ZME3 <- ZME (Zakat Management Effectiveness)	0.780	0.779	0.022	36.005	0.000
ZME4 <- ZME (Zakat Management Effectiveness)	0.758	0.757	0.026	29.361	0.000
ZME5 <- ZME (Zakat Management Effectiveness)	0.776	0.775	0.020	39.084	0.000
ZME6 <- ZME (Zakat Management Effectiveness)	0.759	0.758	0.025	30.939	0.000

The final validated model of constructs SOR, DEN, MDY, and PGI are presented in figure 4.3.

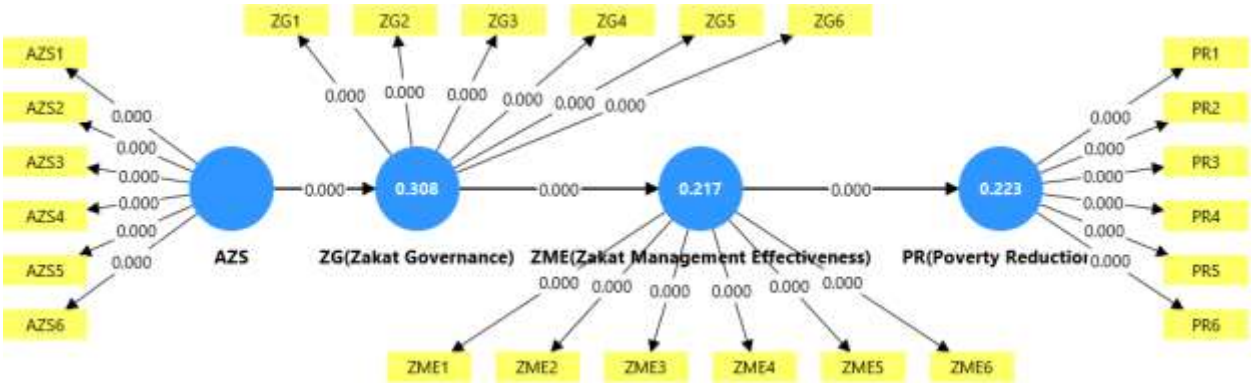


Figure 5: Validated Model

Table 12 and figure 5 represent the final validated model. The final validated In structural equation modeling (PLS-SEM), presents the bootstrapping results for the outer loadings of all measurement items. The results indicate that the outer loadings ranged from 0.714 to 0.825, with all indicators exceeding the recommended threshold of 0.70, demonstrating satisfactory indicator reliability. Furthermore, all T-statistics were substantially higher than the critical value of 1.96, ranging from 23.232 to 53.122, while all p-values were below 0.001. These findings confirm that each measurement item significantly contributes to its respective latent construct.

Among the constructs, Zakat Supervision (ZS) exhibited the strongest indicator loadings, ranging from 0.797 to 0.825, indicating that its measurement items consistently represent the construct. Similarly, the indicators for Zakat Governance (ZG), Zakat Management Effectiveness (ZME), and Poverty Reduction (PR) also demonstrated strong and statistically significant loadings. Overall, the bootstrapping results provide robust evidence that the measurement items are reliable, statistically significant, and for measuring their respective constructs within the proposed PLS-SEM model.

DISCUSSION

This study examined the relationships among Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty Reduction in Bangladesh. The empirical findings provide strong support for the proposed conceptual framework, demonstrating that effective supervision strengthens governance, improves the effectiveness of Zakat management, and ultimately contributes to poverty reduction. The significant mediation effects further reveal that governance and management effectiveness serve as important mechanisms through which supervision enhances the socio-economic impact of Zakat.

The findings indicate that Zakat Supervision has a significant positive effect on Zakat Governance, supporting the first hypothesis. This suggests that effective supervisory practices, including transparency, accountability, monitoring, regulatory compliance, digital oversight, and institutional coordination, play a vital role in strengthening governance within Zakat institutions. When supervisory mechanisms are properly implemented, they enhance organizational accountability, improve transparency in financial management, and promote stakeholder confidence. This finding is consistent with Agency Theory, which emphasizes that effective monitoring reduces information asymmetry between stakeholders and institutional managers, thereby improving governance quality. The result also aligns with previous studies reporting that stronger supervisory systems enhance institutional governance and increase public trust in Zakat administration.

The study also found that Zakat Governance has a significant positive influence on Zakat Management Effectiveness. This finding highlights that well-governed institutions are better equipped to collect, manage, distribute, and monitor Zakat funds efficiently. Clear policies, effective oversight, stakeholder participation, and transparent decision-making contribute to better organizational performance and more efficient resource utilization. The result supports Institutional Theory, which argues that organizations operating within strong governance frameworks are more likely to achieve operational effectiveness and long-term sustainability. This finding is also consistent with previous research demonstrating that governance quality is a key determinant of successful Zakat management.

Furthermore, the findings reveal that Zakat Management Effectiveness significantly contributes to Poverty Reduction. This suggests that poverty alleviation depends not only on the amount of Zakat collected but also on how effectively the funds are managed and distributed. Efficient collection systems, timely distribution, utilization of funds, continuous impact monitoring, and beneficiary satisfaction collectively enhance the developmental role of Zakat. These findings support the principles of Islamic Social Finance Theory, which views Zakat as a sustainable mechanism for promoting social justice, economic inclusion, and equitable wealth distribution. The results are also consistent with earlier empirical studies showing that professionally managed Zakat programmes contribute to improving household income, living standards, and overall community welfare.

The mediation analysis provides additional insights into the institutional mechanisms underlying these relationships. The results demonstrate that Zakat Governance partially mediates the relationship between Zakat Supervision and Zakat Management Effectiveness, indicating that effective supervision improves management performance primarily by strengthening governance practices. Similarly, Zakat Management Effectiveness partially mediates the relationship between Zakat Governance and Poverty Reduction, suggesting that governance alone is insufficient unless it translates into effective operational performance. Moreover, the significant serial mediation effect confirms that Zakat Supervision contributes to Poverty Reduction indirectly through improvements in governance and management effectiveness. These findings demonstrate that achieving

meaningful poverty alleviation requires an integrated institutional approach in which supervision, governance, and management function together rather than independently.

Overall, this study extends the existing literature by empirically validating a serial mediation model linking Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty Reduction within the context of Bangladesh. While previous studies have generally examined governance or management separately, this research demonstrates how these institutional factors operate sequentially to enhance the effectiveness of Zakat as an instrument of Islamic social finance. The findings therefore provide both theoretical and practical evidence that strengthening supervisory and governance mechanisms can significantly improve the poverty reduction outcomes of Zakat programmes.

THEORETICAL IMPLICATIONS

This study makes several important theoretical contributions to the literature on Islamic social finance and Zakat management. First, it extends Agency Theory by demonstrating that Zakat supervision plays a critical role in strengthening institutional governance. The findings suggest that effective supervision reduces information asymmetry, enhances transparency, and improves accountability within Zakat institutions, thereby reinforcing sound governance practices (Elhag, 2026; Ghaouri et al., 2023; Putra, 2026; Setyaningrum et al., 2022).

Second, the study contributes to Institutional Theory by providing empirical evidence that effective governance serves as a foundation for improving the operational effectiveness of Zakat management. The results indicate that governance mechanisms, including clear policies, stakeholder coordination, and institutional oversight, significantly enhance the efficiency of Zakat collection, distribution, and utilization (Hassan et al., 2024; Shayee Almansoori & Al Zitawi, 2025).

Third, this research enriches the literature on Islamic Social Finance Theory by confirming that effective Zakat management is a key mechanism through which Zakat contributes to poverty reduction. Unlike many previous studies that examined governance or management independently, this study integrates supervision, governance, and management effectiveness into a single serial mediation framework. This integrated perspective provides a more comprehensive understanding of how institutional practices influence the socio-economic impact of Zakat (Mukhlishin et al., 2025; Rohim et al., 2026; Rusydiana et al., 2025).

Overall, the study offers a novel conceptual and empirical model that explains the sequential process through which Zakat supervision enhances governance, improves management effectiveness, and ultimately contributes to poverty reduction in Bangladesh.

Practical Implications

The findings of this study offer several practical implications for policymakers, Zakat institutions, and other stakeholders involved in Zakat administration in Bangladesh. First, policymakers should strengthen regulatory frameworks and establish comprehensive supervisory mechanisms to ensure greater transparency, accountability, and compliance in Zakat management. Regular monitoring and independent audits can improve institutional credibility and increase public confidence in Zakat institutions.

Second, Zakat institutions should invest in strengthening governance practices by developing clear operational policies, enhancing stakeholder participation, and improving institutional coordination. Strong governance structures can lead to more efficient collection, distribution, and monitoring of Zakat funds, thereby maximizing their social impact.

Third, greater emphasis should be placed on improving the effectiveness of Zakat management through digital record-keeping, transparent reporting systems, and continuous evaluation ofZS Programme outcomes. Effective management can ensure that Zakat resources reach deserving beneficiaries promptly and are utilized to support sustainable income generation, education, healthcare, and livelihood development.

Finally, the findings highlight the importance of adopting an integrated institutional approach in which supervision, governance, and management work together to enhance the poverty reduction potential of Zakat. Strengthening these institutional dimensions can help position Zakat as a more effective instrument for promoting inclusive socio-economic development in Bangladesh.

CONCLUSION AND FUTURE RESEARCH

This study examined the relationships among Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty Reduction in Bangladesh using a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The findings demonstrate that supervision significantly strengthens Zakat governance,

while effective governance enhances the effectiveness of Zakat management. In turn, improved Zakat management contributes significantly to poverty reduction. The mediation analysis further confirms that governance and management effectiveness jointly explain how supervision ultimately improves poverty alleviation outcomes. The study highlights that strengthening supervisory mechanisms alone is insufficient unless accompanied by sound governance and effective management practices. By integrating these institutional dimensions into a single empirical framework, the research provides evidence that effective Zakat administration requires a coordinated approach that promotes transparency, accountability, operational efficiency, and equitable resource distribution. Overall, this study contributes to the growing body of knowledge on Islamic social finance by demonstrating how institutional improvements can enhance the effectiveness of Zakat as a sustainable tool for poverty reduction. The findings provide valuable guidance for policymakers, Zakat institutions, and development practitioners seeking to improve the governance and social impact of Zakat programmes in Bangladesh.

Despite its contributions, this study has several limitations. First, the research employed a cross-sectional design, which captures respondents' perceptions at a single point in time and therefore does not allow for the examination of changes in Zakat management practices over time. Longitudinal studies could provide deeper insights into the long-term effects of supervision and governance on poverty reduction. Second, the study focused on stakeholders involved in Zakat management in Bangladesh, which may limit the generalizability of the findings to other countries with different institutional, cultural, or regulatory environments. Comparative studies across different Islamic countries would help validate the proposed model in diverse contexts. Third, the study examined the roles of Zakat Supervision, Zakat Governance, and Zakat Management Effectiveness. Future research may incorporate additional variables, such as digital transformation, public trust, institutional performance, financial transparency, or beneficiary satisfaction, to develop a more comprehensive understanding of the factors influencing the effectiveness of Zakat programmes. Finally, future studies may adopt mixed-method or qualitative approaches to explore the experiences of Zakat administrators, donors, and beneficiaries in greater depth. Such approaches could complement quantitative findings and provide richer insights into the institutional challenges and opportunities associated with effective Zakat management.

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