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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 primary tool of Islamic social finance and has a tremendous potential to address the problem of poverty. In many developing countries including Bangladesh, however, it has not been able to contribute effectively for sustainable socio-economic development due to poor supervision, poor governance and poor management practices. This study aims to investigate the connections between Zakat Supervision, Zakat Governance, Zakat Management Effectiveness and Poverty Reduction, which is achieved by creating and testing an integrated conceptual framework. The research method was quantitative, and the data was gathered from 384 informants which included Zakat administrators, donors, beneficiaries, and representatives from Zakat institutions in Bangladesh by a structured questionnaire. Partial Least Squares Structural Equation Modeling (PLS-SEM) software in Smart PLS 4, was used to analyze the data. The results show that there is a significant positive effect between Zakat Supervision and Zakat Governance and a significant positive effect between Zakat Governance and Zakat Management Effectiveness. In addition, Zakat Management Effectiveness has a positive and significant effect on Poverty Reduction. The mediation analysis also shows a partial mediation effect of Zakat Governance and Zakat Management Effectiveness between Zakat Supervision and Poverty Reduction, supporting the complementary mediation effect. The results indicate that there is a need to increase the effectiveness of supervisory mechanisms, strengthen institutional governance and improve management in order to achieve the maximum potential poverty alleviation benefits from Zakat. The study adds to the existing body of knowledge of Islamic social finance by proposing an integrated model of serial mediation which explains how the combined effect of institutional factors helps in increasing the effectiveness of poverty alleviation via Zakat. The results can also be used for practical policymaking and Zakat institutions to enhance governance and facilitate sustainable poverty alleviation in Bangladesh.

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

INTRODUCTION

Despite the steady economic growth and many poverty alleviation measures, poverty continues to be one of the most important socio-economic problems around the developing world (Asni et al., 2025). Despite nationwide gains in income, education and health, significant parts of the populations in many countries are still vulnerable, without jobs, facing food insecurity, and unable to access key public services (Rusydiana et al., 2025). These challenges have spurred the interest of state policymakers and scholars in developing alternative financing models through religious organizations, such as religious endowments, in Muslim majority nations (Shayee Almansoori & Al Zitawi, 2025). Zakat is one of these mechanisms which has been highlighted due to its two-fold function as a religious duty and an institutional means to fight social injustice and economic inequality (Shayee Almansoori & Al Zitawi, 2025).

In the last two decades, Bangladesh has made an impressive economic development as evidenced by the steady increase of GDP, improvement in human development indicators and a decrease in extreme poverty (Arman & Rafi, 2025). Despite this, poverty and inequality are significant issues, especially for the rural

population, the informal sector, women-led households, and marginalized groups (Siddiq & Akbar, 2023). Financial pressures on low-income households have been further exacerbated by the impact of economic shocks, inflation, natural emergencies and the impact of global crises. Hence, enhancing the sustainable poverty reduction system is a key national development priority (Siddiq & Akbar, 2023).

Islamic social finance has Zakat as one of the most effective tools to alleviate poverty and ensure wealth is distributed fairly in society. The obligation of Zakat is one of the five pillars of Islam, in which a specific percentage of eligible Muslims' assets must be transferred to specific groups of beneficiaries as outlined in Islamic jurisprudence, such as the poor, needy, debtors, travelers, and other groups (Zauro et al., 2020). Unlike voluntary charity (Sadaqah), Zakat is an obligation that is designed to lead to a scheme of continuous exchange of wealth, which is meant to diminish differences in socio-economic statuses and enhance social solidarity. With proper management, Zakat can provide for the immediate needs, money can also be utilized for education, healthcare, vocational training, entrepreneurship and income generation which will help to achieve long term economic empowerment (Mustari et al., 2024).

Although there is a huge potential of Zakat, yet its efficacy is still not satisfactory in Bangladesh because of the shortcomings in governance and institutional watchdogs. With little documentation, monitoring and evaluation, the collection and distribution of Zakat is done through informal routes such as families, local communities, religious leaders and charitable organizations (Hoque, 2023). Lack of a unified supervisory system usually results in the lack of coordination and uniformity in collection systems, duplication of beneficiaries, inequitable distribution, lack of accountability and low level of public trust in formal Zakat institutions. This can lead to a large part of the Zakat funds not benefiting those that are most in need, diminishing the impact of Zakat on poverty alleviation.

The countries with a well-developed Zakat governance system like Malaysia and Indonesia have recorded higher institutional efficiency stemming from the use of standardized regulations, digital management systems, transparent auditing and effective monitoring mechanisms in accordance with international experience (Asni et al., 2025; Nasution et al., 2025; Zauro et al., 2020). These governance practices have contributed to better donor trust, administrative effectiveness and positive socio-economic results of Zakat programmes. This experience can help Bangladesh with the enhancement of institutional supervision which can significantly enhance the effectiveness of Zakat as an Islamic social finance tool (Arman & Rafi, 2025; Muneer & Khan, 2022; Mustari et al., 2024; Zami & Heni Satar Nurhaida, 2025).

Though previous studies have broadly explored the linkages between Zakat and poverty reduction, limited research has focused on the impact of supervision and governance in how Zakat programmes work in Bangladesh (Aderemi & Ishak, 2023; Akhter et al., 2025; Hoque, 2023). The current studies have concentrated on the collection and allocation of Zakat, the assistance provided to beneficiaries and the welfare of beneficiaries, while the oversight, accountability, transparency and coordination of the regulatory process and digital governance aspects are still under-researched (Alam et al., 2022; Hak et al., 2024; Hassan et al., 2023; Muyassarah et al., 2025). This gap hampers the formulation of sound policy recommendations that can help make Zakat more effective in its implementation and maximize the developmental outcomes.

The study found that the success rate of Zakat supervision in poverty alleviation in Bangladesh was analyzed based on empirical evidence gathered from 384. This research differs from the previous studies that focused on the Zakat collection and distribution process and examines the impact of governance mechanisms such as transparency, accountability, monitoring, institutional coordination, and supervisory practices, on the effectiveness of Zakat programmes for the benefit of beneficiaries' socio-economic status. The study employs qualitative approach with quantitative methods as its assessment, which aims to assess the relationship between Zakat supervision and poverty reduction, and to examine the institutional problems in managing Zakat effectively. The results will be used to develop evidence-based policy recommendations for the policy makers, Zakat institutions, and other stakeholders for strengthening the governance arrangement and improving the impact of Zakat on sustainable poverty alleviation and inclusive socio-economic development for Bangladesh.

LITERATURE REVIEW

Zakat is a Tool that can be Used in Islamic Social finance

Zakat is one of the five pillars of Islam and is a mechanism of institutionalization that is used to distribute wealth, bring social justice, and eradicate poverty. The difference between Zakat and voluntary giving of charity is that Zakat is a prescribed obligation that must be paid by all qualified Muslims, and is prescribed to be given to a specific group, whereas the voluntary giving of charity is done by willing and generous individuals (Nuradi

et al., 2025). In addition to its religious value, modern researchers have begun to see Zakat as a vital part of Islamic social finance and a mechanism for promoting inclusive economic growth and alleviating income disparities and the plight of the poor (Siti et al., 2024).

Past studies have always found that effective zakat management does not only address the immediate need of the poor households for consumption satisfaction (Siti et al., 2024). If administered appropriately, Zakat may be used to educate, treat, provide vocational training, provide opportunities for entrepreneurship and other productive activities that will help the beneficiaries achieve economic independence in the long term (Ghaouri et al., 2023). This, therefore, makes many researchers believe that Zakat need not be understood only as a transfer of charity but as a tool for sustainable development and a means to social inclusion and structural poverty reduction (Putra, 2026).

Zakat and Poverty Reduction

During the last two decades, a lot of scholarly work has been done on the link between Zakat and Eradication of poverty. In general, empirical studies report that well managed Zakat programmes have a positive effect on household income, raise household consumption, provide access to education and raise access to health services (Elhag, 2026; Siddiq & Akbar, 2023). Studies in various Muslim countries have indicated that a successful Zakat programme can be more effective than a lump sum payment in fostering sustainable livelihoods, as it assists in the creation of productive livelihoods by providing skills training, microenterprises and job creation.

Particularly, several researchers suggest that the idea of integrating Zakat with other Islamic financial facilities (Waqf, Musharakah and Mudarabah) can offer developmental advantages in the length run. Integrated Islamic social finance is not just a redistribution mechanism, but also a mechanism that allows Zakat institutions to invest in productive activities that can generate income for beneficiaries continuously (Elhag, 2026; Siddiq & Akbar, 2023). This practice not only makes Zakat a viable means of poverty reduction but also adds to the overall economic development goals (Alwi et al., 2023).

Governance and Institutional Supervision of Zakat

The possible development of Zakat is recognized, but its effectiveness will not be achieved without good institutional management. The most important factors which are cited as the success criterion for Zakat management are transparency, accountability, monitoring and effective supervision (Arman & Rafi, 2025; Muneer & Khan, 2022). Poor governance leads to ineffective utilization of funds, inequitable distribution, administrative duplication and loss of public trust in the Zakat institutions (Mustari et al., 2024).

In recent literature, it is stressed that there is a need for supervision in all stages of the management of the Zakat, such as collecting it, identifying beneficiaries, distributing the funds, implementation, supervision, auditing and evaluating the impact etc. (Asni et al., 2025). Supervisory mechanisms minimize the risks of misallocation, enhance financial accountability, and make sure Zakat funds are delivered to deserving beneficiaries as per Shariah. This has led to the institutional governance being one of the most talked about subjects in current research on Islamic social finance (Sucipto et al., 2025).

Digital Transformation in Zakat Management

The advancement of digital technology has had a significant impact on the administration of Zakat in many Muslim countries. Digital platforms, electronic payment mechanisms, linked beneficiary databases and real-time monitoring tools are seen to enhance the efficiency of operations and transparency of institutions (Hoque, 2023). Digital governance allows Zakat institutions to keep proper financial documentation, cut down on administrative expenses, cut down on duplication of beneficiaries and boost donor trust with increased transparency (Aderemi & Ishak, 2023). Digital technologies also help to implement evidence-based decision making which enables institutions to track the performance of the Programme and measure the socio-economic impacts of Zakat distribution (Muyassarah et al., 2025). In the context of Islamic financial institutions' digital transformation, technology plays a significant role in effective Zakat supervision and governance (Akhter et al., 2025).

International Experiences of Zakat Governance

The comparative studies show that there are significant variations in the performance of Zakat management in Muslim countries. Malaysia and Indonesia are often quoted as good examples as they have set up a structured institutional framework with national regulations, standardized operating procedures, digital management systems and detailed supervisory systems. These institutional arrangements have led to an increase in public trust, increased collection efficiency and better developmental outcomes of Zakat programmes (Nasution et al.,

2025; Zami & Heni Satar Nurhaida, 2025; Zauro et al., 2020). By contrast, Bangladesh still has mostly decentralized and informal systems of distributing Zakat. Distributing Zakat individually, through family networks, local mosques, community groups or private charitable programs, without any set monitoring or centralized coordination (Hassan et al., 2023). Such arrangements are necessary for religious and social reasons, but they may not ensure transparency, eliminate duplication of beneficiaries, or maximize the effectiveness of poverty alleviation (Hassan et al., 2023).

Zakat Management in Bangladesh

Previous studies have shown that Bangladesh has ample scope to use Zakat as an efficient poverty alleviation tool due to the large Muslim population and high level of religious commitment towards paying Zakat. (Alam et al., 2022; Hassan et al., 2023). But there are still some institutional issues which limit its effectiveness. The main challenges in the efficient management of Zakat are revealed by researchers to be fragmentation of collection systems, lack of coordination between Zakat organizations, lack of accountability mechanisms, lack of documentation and supervision, and lack of central supervisory authority. (Alam et al., 2022). These weaknesses affect the public trust in the formal Zakat organizations and constrain policymakers' efforts to mainstream Zakat in national poverty reduction strategies (Allawi & Wibowo, 2021). Hence, the issue of enhancing governance is becoming more relevant in order to maximize socio-economic benefits of Zakat in Bangladesh (Ayuniyyah et al., 2022).

Research Gap

The literature concurred that Zakat can be a successful tool of Islamic social finance in poverty alleviation and social benefit, however there are some gaps which warrant further research. Previous studies have focused on the socio-economic impact of Zakat distribution, the welfare outcomes of the Zakat recipients, the collection processes or the combination of Zakat and other Islamic financial tools and their impact (Hassan et al., 2024; Rizapoor, 2025; Rohim et al., 2026; Shayee Almansoori & Al Zitawi, 2025). In spite of the positive effect these studies have had in poverty reduction, they do not address much attention to the institutional factors that influence the success of Zakat programmes in attaining their goals. There is a huge lack of awareness regarding the role of supervision and governance and how it can improve the effectiveness of Zakat management. There are some existing studies that recognized the problems of weak accountability, lack of transparency, lack of administrative unity, and lack of monitoring of Zakat institutions, but there are not many studies that took an empirical approach to examine how supervisory mechanisms affect the performance of Zakat institutions (Mukhlishin et al., 2025; Rusydiana et al., 2025; Uddin & Hossain, 2025). Consequently, there is limited knowledge on how effective supervision translates into equal distribution of funds, greater institutional accountability and sustainable poverty reduction (Mukhlishin et al., 2025; Rusydiana et al., 2025; Uddin & Hossain, 2025). Moreover, the majority of the available empirical data comes from countries where Zakat is collected through institutional arrangements of Zakat boards, and the regulations are rigid and comprehensive like the Malaysian and Indonesia countries. On the other hand, the decentralized and informal nature of the Zakat management system is still very dominant in Bangladesh, and there is not much coordination among the government, religious institutions, and private charitable institutions (Asni et al., 2025; Nasution et al., 2025; Zami & Heni Satar Nurhaida, 2025; Zauro et al., 2020). Hence, the results of other countries cannot be blindly applied to the situation of Bangladesh due to the variations in institutional structure, governance system, socio-economic characteristics, and policy environment (Arman & Rafi, 2025; Muneer & Khan, 2022). Some of the drawbacks of the previous studies are the lack of incorporation of the principles of modern governance in the study of administration of Zakat. The subject of digital monitoring, transparency of institutions, performance evaluation, accountability of stakeholders, and evidence-based supervision are comparatively little studied in Bangladesh in the context of contemporary issues (Mustari et al., 2024; Sucipto et al., 2025). Thus, policy makers and Zakat administrators are still challenged to develop governance systems that would maximize the effect of Zakat resources to achieve the developmental effect (Aderemi & Ishak, 2023; Hoque, 2023).

This study tries to fill these lacunas by studying the impact of Zakat supervision on the poverty alleviation in the context of Bangladesh. To find out the effectiveness of supervision, accountability, transparency, monitoring and institutional governance in improving the efficiency and effectiveness of Zakat management, rather than simply collection or distribution, the research examines the role of these elements in Zakat management. This study, which gives empirical evidence from Bangladesh, adds to the growing body of literature on Islamic social finance and makes practical recommendations to support a more transparent, accountable and sustainable Zakat governance framework that is conducive to a national poverty reduction strategy.

THEORETICAL FOUNDATION

The study is based mainly on Agency Theory and Islamic Social Finance Theory, which gives a general picture of how the supervision improves the governance and effectiveness of Zakat institutions and hence poverty reduction (Sucipto et al., 2025). The Agency Theory is a theory that deals with the relationship between principals and agents in the case of agents who are responsible for some resources on behalf of a principal (Napitupulu et al., 2024). In the context of the management of Zakat, the principals are the Zakat payers (Muzakki) and the agents are the Zakat institutions (Amil) which collect, manage and distribute Zakat funds according to Islamic principles (Putra, 2026). Zakat institutions should rely on effective supervision, through monitoring and auditing, transparent reporting and regulatory oversight, to reduce agency problems and enhance public trust in the financial institutions (Rusydiana et al., 2025). Islamic Social Finance Theory is an addition to the Agency Theory where it highlights not only the importance of financial instruments like Zakat for religious obligations, but also their role in delivering social justice, equitable wealth distribution and sustainable socio-economic development (Mustari et al., 2024). In this context, Zakat is a formal process of transferring the wealth of the capable to the eligible people and thus alleviating poverty and fostering social cohesion (Elhag, 2026). The success of achieving these goals, however, will rely on the proper functioning of the institutions that will be established which must be transparent and efficient and abide by Shariah principles (Akhter et al., 2025). The relationships explored in this study can be logically explained by combining these theoretical perspectives (Allawi & Wibowo, 2021). By enhancing accountability, transparency, monitoring and coordination of institutions, Zakat supervision creates effective governance (Hoque, 2023). Good governance improves the efficiency of the operation of Zakat institutions, by making it easier to collect, manage and disburse the funds in an efficient manner to eligible beneficiaries (Asni et al., 2025). This will enable Zakat programmes to have a more meaningful impact in poverty reduction as they become more effective institutions that facilitate beneficiaries' access to financial assistance, livelihood support, education, health care and other factors (Hassan et al., 2023).

Theoretically, it has been suggested that the effect of the Zakat supervision on poverty alleviation is not a direct one. Rather, this is done by a successive enhancement in institutional governance and the efficacy of Zakat (Hak et al., 2024). This perspective has been used to develop the hypotheses of this study and to empirically explore the pathways by which effective supervision can promote the developmental role of Zakat in Bangladesh.



Figure 1: Conceptual Framework

HYPOTHESIS DEVELOPMENT

The role of Zakat supervision is a key element in good governance in Zakat institutions. Supervision assures that the collection, management and distribution of Zakat is managed according to the policies, Shariah principles and laws. It also enhances institutional transparency, accountability, monitoring and coordination of stakeholders. Agency theory illuminates the benefits of effective supervision of Zakat administration in terms of minimizing information asymmetry between the Zakat contributors (Muzakki) and the administrators of Zakat (Amil), and thus improving the accountability and trust of the organization (Danlami et al., 2023). The past research has all shown that clear mechanisms of supervision and monitoring lead to better governance by deepening institutional control, financial accountability and adherence to regulatory requirements (Muneer & Khan, 2022; Mustari et al., 2024). Hence, the supervision of Zakat is expected to have a positive impact on the supervision of Zakat institutions.

H_1: The higher the level of Zakat Supervision, the higher the level of Zakat Governance.

The institutional framework for efficient management of Zakat is provided by governance. Good governance mechanisms, including operational policies, transparent decision-making, involvement of stakeholders and effective monitoring mechanisms, help in the efficient collection, proper utilization, targeted distribution and ongoing monitoring of Zakat funds (Hak et al., 2024; Nuradi et al., 2025). Organizations that have strong governance are better able to be efficient in their operations and gain the trust of their stakeholders in line with Institutional Theory. Empirical research in Malaysia and Indonesia has shown that those Zakat institutions well governed have been able to perform their operations well and satisfied the beneficiaries of Zakat, as compared to the ones which have poor governance (Alam et al., 2022; Allawi & Wibowo, 2021). In line with these, it is hoped that with the improvement of governance, Zakat management will become more effective.

H_2: *The relationship between Zakat Governance and the effectiveness of Zakat management is positive and significant*.

The performance of Zakat management will affect the socio-economic benefits of the collected Zakat, which is able to be implemented as social assistance for those who are able to receive it. The efficiency of Zakat management is the main factor that will determine whether the collected Zakat is able to create significant and meaningful socio-economic benefits for the eligible beneficiaries. According to Ayuniyyah et al. (2022); Hassan et al. (2024), with proper management, Zakat money can be collected in an efficient manner, delivered to deserving persons, utilized in an effective manner and monitored continuously to yield the maximum developmental outcome. Good management of Zakat can not only alleviate households' immediate financial hardships, but it can also enhance their income, education, health, employment, and economic resilience, benefiting those who need it most. Empirical studies have indicated that the effective and productive administration of Zakat programmes can make a meaningful contribution to poverty alleviation and development of communities. Hence, the higher the effectiveness of the management of Zakat, the more this will benefit in reducing poverty.

H_3: *There is a positive and significant effect of* Zakat Management Effectiveness towards Poverty Reduction.

Supervision has a direct impact on strengthening institutional accountability, but most of the impacts on operational performance occur through the improvement of governance. Good supervision sets out clear processes, enhances institutional coordination, and enhances decision making. Enhanced good governance then leads to effective management of Zakat (Rizapoor, 2025; Shayee Almansoori & Al Zitawi, 2025). Thus, governance acts as a significant institutional instrument, by which supervision can affect organizational performance.

H_4: Zakat Governance mediates the link between the Zakat Supervision and Zakat Management Effectiveness.

Good governance is not enough to reduce poverty if it is not put into practice in the form of performance at the operational level. The improvement of governance leads to the improvement of institutional policies and accountability, and effective management leads to the collection, distribution, monitoring and utilization of the resources of Zakat in an efficient manner (Rohim et al., 2026; Rusydiana et al., 2025). Thus, the socio-economic benefits of governance can be felt when the effectiveness of the Zakat management is improved (Mukhlishin et al., 2025). Based on this, the effectiveness of Zakat management is expected to be able to buffer the relationship between governance and poverty reduction.

H_5: There is the mediating role of effectiveness in Zakat Management between Zakat Governance and Poverty Reduction.

This study suggests that the role of Zakat supervision in poverty alleviation takes place sequentially in the form of strengthening governance through transparency, accountability, monitoring and regulatory compliance. Good governance then leads to an effective management of Zakat operations, which leads to efficient collection, distribution, utilization of the funds and creation of better socio-economic benefits for those deserving of Zakat (Mukhlishin et al., 2025; Rusydiana et al., 2025; Uddin & Hossain, 2025). Thus, the effect of poverty reduction by supervision is the same as the indirect effect caused by the influence of mediation that occurs in the governance and Zakat management effectiveness.

H_6: Zakat Supervision indirectly influences Poverty Reduction by the intervening role of Zakat Governance and Zakat Management Effectiveness.

METHODOLOGY

In this study, the quantitative cross sectional research design has been used to find out the relationship among Zakat Supervision, Zakat Governance, Zakat Management Effectiveness and Poverty reduction in Bangladesh. A quantitative approach was considered because the proposed conceptual framework can be empirically tested, and the causal relationships between the constructs of the study can be investigated. The Primary Data were gathered on a structured questionnaire among the key informants who are related to Zakat management in Bangladesh such as Zakat administrator, Donor of Zakat (Muzakki), beneficiaries of Zakat (Mustahiq) and representatives of the Zakat institution. The measurement items were designed to have content and contextual validity using theoretical items from other good studies that have been performed on Islamic social finance, institutional governance, and Zakat management. The items were scored on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A total of 384 respondents participated in the study (Cochran, 1942). The sample size was calculated using the sample size formula accepted in the social science research for large populations, that is the Cochran sample size formula (Cochran, 1942). A purposive sampling technique was used to ensure the selection of the respondents having relevant knowledge and practical experiences on Zakat supervision, governance and management (Alwi et al., 2023; Asni et al., 2025; Nasution et al., 2025). This method guaranteed that the gathered data was based on informed perceptions and experiences of people involved in the administration of Zakat and the beneficiaries. The data collection period was from January 2026 to April 2026 and complies with all ethical considerations and ensure confidence and secure of respondents. SmartPLS 4 software was used to analyze the collected data following the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. Indicator reliability, internal consistency reliability (Cronbach's Alpha and Composite Reliability), convergent validity (Average Variance Extracted), and discriminant validity (Fornell-Larcker Criterion and the Heterotrait-Monotrait (HTMT) ratio) were used to assess the measurement model. Then the structural model was tested by checking out the mediation effects, testing the proposed hypotheses, collinearity (Variance Inflation Factor), the coefficient of determination (R^2), the effect size (f^2), and bootstrapping (5,000 times resampling) (Fornell & Larcker, 1981; Lindner & Lindner, 2024; Sarstedt et al., 2021).

ANALYSIS AND RESULTS

Demographic Overview of the Respondent

Demographic characteristics of the respondents give an overview of the background and diversity of the respondents engaged in the study. These characteristics are important to consider because the demographic profile of the respondents (gender, age, education level, occupation, respondent category, experience with zakat) could affect their perception, knowledge and responses towards the research topic. There were 384 respondents divided into various groups involved in the activities of zakat, such as donors, beneficiaries, administrators, and representatives from institutions.

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**

The overall information of the respondents is shown in Table 1. The majority respondents who were asked were male with 64.3% while 35.7% were female, which suggests that the male respondents participated more compared to the female. Age distribution shows that the highest number of participants was between 26 and 35 years (29.9%), 36 and 45 years (23.7%) and 46 and 55 years (20.6%). The age group under 25 represented 16.7% of the respondents and over 55 years, 9.1% of the respondents. As far as educational qualification is concerned, majority of the respondents had done Bachelor's (31.3%) followed by Master's (25.5%) and Higher Secondary (20.8%). Less than 10% of the respondents had Secondary education (10.7%), less than 7% other qualifications (7.0%) and less than 4% PhD degrees (4.7%). This means that the respondents had the moderate to high educational level. As revealed by the occupational profile, the respondents were from a variety of professions. People from religious institutions were the most likely (16.1%) to have been associated with that type of institution, followed by people in government service (15.4%), business (14.8%) and students (14.6%). People from other sectors, such as private services and NGOs, were also involved in the study, providing representation from different social and professional groups. In terms of Respondent categories, zakat Donor (Muzakki) had the highest number of 32.6%, and zakat Beneficiary (Mustahiq) had the second largest number of 27.9%. The Zakah institutions' representatives made up 21.1% of the sample, while the zakat administrators (Amil) represented 18.5% of the sample. The distribution is based on having different stakeholders in the zakat system.

Finally, the experience of the respondents with activities of zakat was different. The top three groups in terms of experience were those with 2–5 years of experience (35.9%), 6–10 years of experience (23.4%) and more than 10 years of experience (21.1%). 19.5% of the respondents had less than 2 years of experience. In general, the demographic profile shows that the study had a broad spectrum of respondents, experiences, and occupation, thus enhancing the reliability and representativeness of the results obtained.

Descriptive Analysis

The descriptive statistics of the core variables employed in the research are found in Table 2, 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: Descriptive Statistics (Variables)

Indicators	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			

Descriptive statistics of the study variables are based on responses from 384 participants presented in Table 2. Generally, there was a moderate to positive response by the respondents to the statements presented in this study as evidenced by the mean scores of all items that ranged from 3.46 to 3.62. 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 are between 0.696 to 0.845 that means that the opinion given by the respondents are not varied and moderately consistent. The variance values are also similar and mean that the items are measuring the concept with acceptable dispersion. The overall results indicate that the respondents had generally positive perceptions of the constructs measured in the study and there were no significant differences in their 'response pattern'.

Structural Equation Model

Structural equation modeling (SEM) is a family of powerful statistical tools used in empirical testing of causal relationships between observed variables and latent variables in various disciplines, such as psychology, education, medicine, management and ecology (Obiageli & Auwalu, 2024) (Figure 2). Structural Equation Modeling (SEM) is a combination of various statistical techniques that include regression analysis, factor analysis and path analysis, and is used to study theories about causal processes in depth (Sarstedt & Ringle, 2020). This is especially important because it allows for the modeling of not only manifest variables, but also latent variables, making it a flexible tool for empirical research.

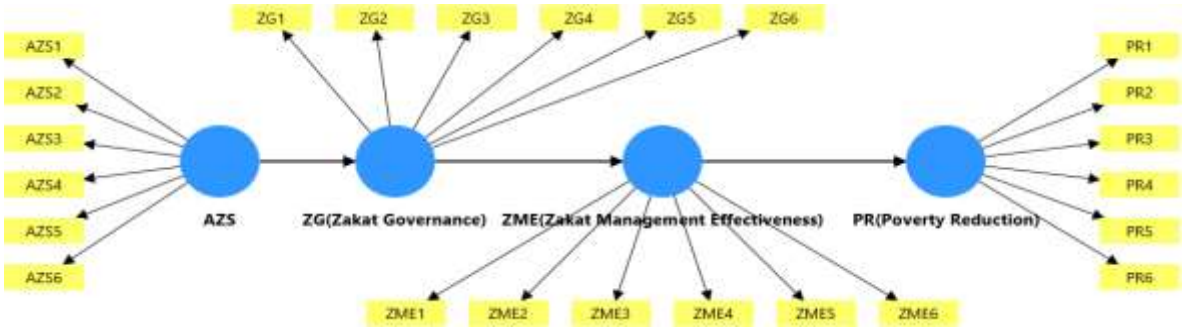


Figure 2: Structural Equation Model

Based on the proposed conceptual framework, the empirical analysis results are presented in Figure 2. Data analysis was conducted using SmartPLS 4, having two analyses for 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) (Figure 3). 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.

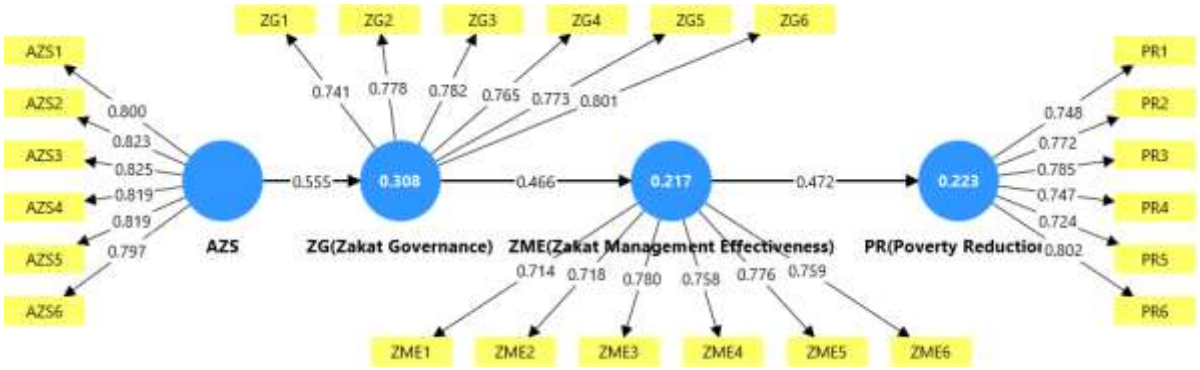


Figure 3: Measurement Model

Figure 3 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 3, 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

Indicators	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. The internal consistency is indicated by Cronbach's Alpha; however, Composite Reliability is often considered a more valid estimator within the context of Structural Equation Modeling because it uses the actual factor loadings (Hair et al., 2010). A score of 0.70 or higher is generally considered good for both measures, and a score higher than 0.90 indicates high reliability (Sarstedt et al., 2021).

Table 4: Construct Reliability Based on Cronbach's Alpha and Composite Reliability

Constructs	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). Cronbach's Alpha values ranged from 0.846 to 0.898, and Composite Reliability values ranged from 0.851 to 0.902 (see Table 4). The values of all items were above the recommended level of 0.70, which represents acceptable internal consistency and reliability of the measurement scales. Regarding the constructs, Zakat Supervision (ZS) had the highest reliability (Cronbach's Alpha = 0.898; Composite Reliability

= 0.902) while Zakat Management Effectiveness (ZME) had the lowest but still acceptable reliability (Cronbach's Alpha = 0.846; Composite Reliability = 0.851). In general, the results show that the instrument used is reliable and appropriate for further validity testing and structural analysis of the model (Hu & Bentler, 1999).

Construct Validity

Construct validity was examined using convergent lenses and discriminant validity over the general validity of the measurement model. Construct validity is important to make sure that the items of the measure reflect the theoretical constructs that are being measured (Fornell & Larcker, 1981). This section outlines the results with respect to the convergent validity using Average Variance Extracted (AVE) as the key measure of evaluation.

Convergent Validity: Convergent validity is reflected in how well different items that measure the same construct do converge or have a high amount of shared variance. Average Variance Extracted (AVE) is a standard for analysis in the paradigm of Structural Equation Modeling (SEM). The accepted cut-off point for the AVE is 0.50, which represents the ability of the construct to explain at least 50% of the variance of its observed variables (Fornell & Larcker, 1981).

Table 5: Construct Convergent Validity (AVE)

Constructs	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

The Average Variance Extracted (AVE) was used to evaluate the convergent validity, which explains the variance of the latent constructs from which the indicators are created. The AVE values were between 0.564 and 0.662 (as shown in Table 5). Specifically, Zakat Supervision (ZS) had the highest AVE (0.662), followed by Zakat Governance (ZG) (0.598), Poverty Reduction (PR) (0.583), and Zakat Management Effectiveness (ZME) (0.564). Because all AVE values were above the recommended value of 0.50, the results confirmed acceptable convergent validity, which means that all the indicators adequately reflect the underlying constructs. Thus, the measurement model has good construct validity and can be used for further analysis of the structural model.

Discriminant Validity: Discriminant validity is the extent to which a construct is indeed distinct from other constructs, both theoretically and empirically. One of the most common measures used for discriminant validity is the Fornell-Larcker one. According to this approach, the Average Variance Extracted (AVE) values for each construct (diagonal) should be higher than correlation with other constructs (off diagonal) for each construct (Fornell & Larcker, 1981).

Table 6: Discriminant Validity (Fornell-Larcker criterion)

Constructs	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

To measure the discriminant validity, the Fornell–Larcker criterion was used to examine if each construct was empirically different from the other constructs. Table 6 indicates that the AVEs of the latent variables are higher than the inter-construct correlations for each latent variable, as captured by the diagonal values. In particular, the diagonal values were found to be 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). These correlations were higher than other constructs, providing the evidence of satisfactory discrimination validity. This means that each construct is a different concept and each is statistically different from the other constructs in the study.

Table 7: Discriminant Validity (HTMT)

Constructs	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	

Additional assessment of discriminant validity among the study constructs was conducted using the ratio of the Heterotrait–Monotrait (HTMT) ratios. The value of HTMT presented in Table 7 ranged from 0.167 to 0.626, the highest value is between Zakat Supervision (ZS) and Zakat Governance (ZG) (0.626), and the lowest value is between Zakat Supervision (ZS) and Poverty Reduction (PR) (0.167). All HTMT values were below the recommended value of 0.85 indicating that each construct is empirically different from the other constructs. Thus the measurement model is acceptable in terms of the discriminant validity, which means that the constructs measure different theory aspects without much overlap.

Table 8: Discriminant Validity (Cross-Loadings)

Indicators	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

For discriminant validity, each measurement item was required to have a cross-loading with a score higher than that of the other construct if it was correlated with that construct. Table 8 indicates that all the loading of the indicators were highest on their corresponding latent variables. In particular, the loadings for Zakat Supervision (ZS) were from 0.797 to 0.825, Zakat Governance (ZG) 0.741 to 0.801, Zakat Management Effectiveness (ZME) 0.714 to 0.780, and Poverty Reduction (PR) 0.724 to 0.802. The cross-loading, on the other hand, for the rest of the constructs were significantly lower. These results replicate the findings from the previous study that each indicator is more closely correlated with the construct that the model is intended to measure than with any of the other constructs, thus offering further evidence of satisfactory discriminant validity, and 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 tested with the Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI) and other model fit statistics (J. F. Hair et al., 2010). The SRMR values for the saturated model and the estimated model were respectively 0.050 and 0.052, both of which are lower than the recommended value of 0.08, with a good model fit. For both models the Normed Fit Index (NFI) is 0.896, which is close to the recommended value of 0.90 and is acceptable (Hu & Bentler, 1999). Furthermore, the d_ULS and d_G were relatively small, suggesting that there was only a small difference between the observed and estimated covariance matrices. In sum, the model fit indexes indicate a good model fit and suggest that the proposed PLS-SEM model is suitable for testing the hypothesized relationships between the constructs of the present study (Table 9).

Hypothesis Testing

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to systematically evaluate the path coefficients (β), standard deviations, t-statistics, and p-values for each hypothesis to examine the interrelations among constructs in the proposed structural model (Hair et al., 2010). As seen in Table 10, the paths hypothesized gain significance, as expected, at the traditional significance level 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 tested for the significance of the proposed hypotheses by bootstrapping in SmartPLS 4. All hypothesized relationships were positive and statistically significant as presented in Table 10. **H_1:** Zakat Supervision has a positive and significant effect on Zakat Governance. Specifically, Zakat Supervision (ZS) had significant positive impact on Zakat Governance (ZG) ($\beta = 0.555$; $t = 15.252$; $p < 0.001$), which supports H1. The result shows that good supervision is good governance of Zakat institutions.

The results of this study indicated that there is a positive and significant relationship between Zakat Governance and Zakat Management Effectiveness. In the same way, there is a significant positive relationship between Zakat Governance (ZG) and Zakat Management Effectiveness (ZME) with the correlation ($\beta = 0.466$, $t = 11.098$, $p < 0.001$), and this result is in favor of **H_2**. This discovery implies that good governance practices are effective in the good management of Zakat. The results of this relationship indicate that the effectiveness of Zakat management has a positive and significant influence on poverty reduction. In addition, Zakat Management Effectiveness (ZME) positively influenced Poverty Reduction (PR) with significant value ($\beta = 0.472$, $t = 12.863$, $p<0.001$) which supported **H_3**. This finding shows that the effective utilization of Zakat resources is one of the key factors to enhance the outcome of poverty alleviation in Bangladesh. The results overall support the structural model proposed and prove that there is an indirect relationship between the concept of poverty and the role of Zakat supervision as a means of strengthening governance and improving the effectiveness of Zakat management.

Mediation Analysis

To explore the underlying mechanisms of Zakat Supervision on Poverty Reduction, a mediation analysis was carried out via bootstrapping method in SmartPLS 4. This analysis was done on a single and sequential basis, for Zakat Governance (ZG) and Zakat Management Effectiveness (ZME) (Table 11). The significance of the indirect effect was used to test for mediation, and indirect paths that reached statistical significance were considered to represent mediation. Furthermore, the direct relationships between these constructs were statistically significant, suggesting that the proposed model is a complementary partial mediation model, consistent with the idea that the mediators enhance the direct relationships between the constructs.

Table 11: Mediation Analysis

Hypothesis	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

The following research hypotheses were developed:

H_4: *Zakat Governance is a mediator in the relationship between Zakat Supervision and Zakat Management Effectiveness.*

The indirect effect of Zakat Supervision (ZS) on Zakat Management Effectiveness (ZME) mediated by Zakat Governance (ZG) was positive and statistically significant as shown in Table 11 ($\beta = 0.259$, $t = 8.209$, $p < 0.001$), thus supporting H4. This discovery suggests that the effectiveness of Zakat management is partly due to the improvement of the quality of supervision related to the governance of Zakat.

H_5: *Zakat Management Effectiveness has the mediation role between Zakat Governance and Poverty Reduction.*

In addition, Zakat Management Effectiveness (ZME) partly mediated the relationship between Zakat Governance (ZG) and Poverty Reduction (PR) ($\beta = 0.220$, $t = 7.704$, $p < 0.001$); this is in support of H5. This means that the impact of good governance is on poverty reduction through increasing the effectiveness of the collection, management and distribution of Zakat funds. The obtained results of the study revealed that the Zakat Supervision, Zakat Governance and Zakat Management Effectiveness are sequential mediators between variables of Zakat Supervision and Poverty Reduction. The sequential indirect effect of the Zakat Supervision (ZS) on Poverty Reduction (PR) via Zakat Governance (ZG) and Zakat Management Effectiveness (ZME) was also positive and significant ($\beta = 0.122$, $t = 6.239$, $p < 0.001$), thus supporting **H_6.** Based on this result, it can be concluded that the role of good supervision is to help reduce poverty by strengthening the governance system and then the effectiveness of Zakat management.

Overall, the mediation results show that Zakat Governance and Zakat Management Effectiveness are crucial as instruments to achieve poverty reduction in the field of Zakat Supervision. The substantial direct and indirect impacts show complementary partial mediation, which suggests that the direct impact alone is not sufficient to explain the poverty reduction impact that comes from the direct impact of effective supervision on the effectiveness of governance and management.

Final Validated Model

The final validated model was evaluated based on the strength, reliability, and significance of the associations that existed between the observed and the latent constructs as indicated in Table 12, using the outer loadings and bootstrapping results. Every item shown a statistically significant outer loading ($p < 0.001$), so the measurement model was substantiated (Hair & Alamer, 2022; Sarstedt et al., 2023).

Table 12: Outer Loadings

Hypothesis	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.

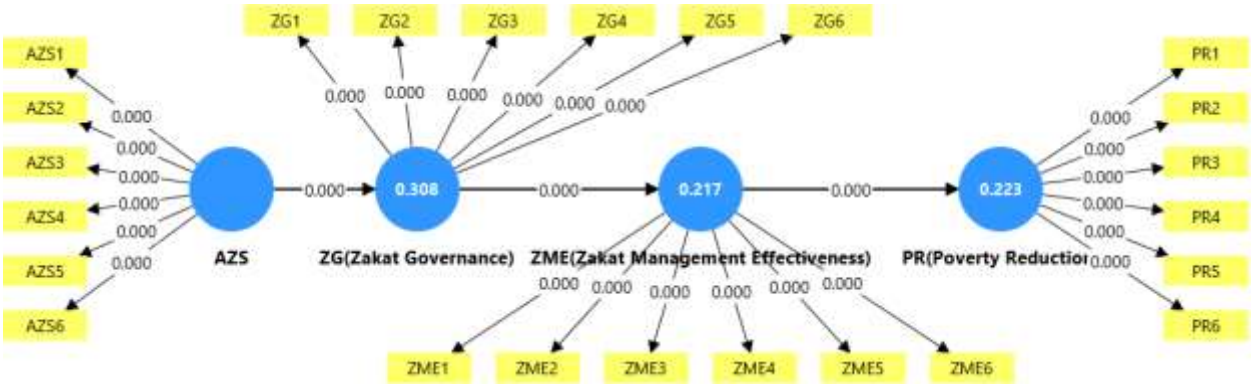


Figure 4: Validated Model

The final validated model is shown in table 12 and figure 4. The final validated In structural equation modeling (PLS-SEM), presents the bootstrapping results for the outer loadings of all measurement items. The results are satisfactory with the outer loadings of 0.714 to 0.825 being all above the recommended value of 0.70, which means that the indicators are reliable. In addition, all T-statistics values were much larger than the critical value of 1.96 (23.232 to 53.122) and all p-values were less than 0.001. The results of this analysis support the validity of the measured items as they all contribute significantly to the latent constructs in which they are measured. The loadings for the constructs showed the strongest indicator loadings for Zakat Supervision (ZS) ranging from 0.797 to 0.825 which shows that the items measuring the construct are consistent. Likewise, the loading for the indicators of the Zakat Governance (ZG), Zakat Management Effectiveness (ZME), and Poverty Reduction (PR) were also found strong and statistically significant. Altogether, the results obtained from the bootstrapping technique indicate that the measurement items have good reliability, are statistically significant, and are able to measure the constructs that have been formulated in the proposed PLS-SEM model.

DISCUSSION

The study analyzed the relationship between Zakat Supervision, Zakat Governance, Zakat Management Effectiveness and Poverty Reduction in Bangladesh. The empirical results are also supportive of the conceptual framework of the study as the effective supervision had a positive impact on governance and Zakat management effectiveness, which in turn led to poverty reduction. The significant mediation effects also indicate that governance and management effectiveness play a crucial role as a means by which supervision increases the effect of Zakat on socio-economic development.

The results suggest that Zakat Supervision significantly influences Zakat Governance which is consistent with the first hypothesis. This implies that the proper supervision of Zakat institutions, such as transparency, accountability, monitoring, regulatory compliance, digital supervision, and coordination among institutions, is an important aspect to reinforce the governance of Zakat institutions. Good implementation of supervisory mechanisms improves the accountability of the organization, transparency in the use of financial resources, and citizens' trust in the organization. This result is confirmed with Agency Theory which focuses on the importance of the monitoring effect to decrease the amount of information asymmetry between the stakeholders and the institutional managers, and in turn to boost the quality of governance. The finding is also consistent with other studies which had reported that better supervisory systems improve institutional performance and make people more confident in the administration of Zakat.

The study revealed that the Zakat Governance has significant positive impact on Zakat Management Effectiveness. The finding pointed to the important role of well-governed institutions in the efficient collection, management, distribution and monitoring of the Zakat funds. Clear policies, effective oversight, participation of stakeholders and transparent decision-making help to improve organizational performance and efficient use of resources. It is found that the result can support Institutional Theory which states that the organizations with good governance structure are more likely to achieve effectiveness and sustainability. This discovery is also in line with the previous study which showed that governance quality plays an important role in the implementation of good Zakat management.

In addition, the results indicate that the Zakat Management Effectiveness has a significant effect on Poverty Reduction. This implies that the responsibility of poverty alleviation depends on the amount of Zakat collected as well as the effective management and distribution of the funds. The collection, distribution, utilization, and continuous impact monitoring, combined with beneficiary satisfaction, contribute to the developmental role of Zakat. The results of this research align with the tenets of Islamic Social Finance Theory which emphasizes that the concept of Zakat is a viable tool for social justice, economic inclusion, and equitable distribution of wealth. The findings are also in line with previous empirical research which indicated that well-managed Zakat programmes positively influence the income, welfare, and living standards of households and the well-being of the community at large.

The mediation analysis gives further indication of the institutional processes that underlie relationships. The findings show that the effect of Zakat Supervision on Zakat Management Effectiveness is partially mediated by the variable of Zakat Governance, which implies that good supervision will enhance management effectiveness mainly through governance. Likewise, the connection between Zakat Governance and Poverty Reduction is somewhat mediated by Zakat Management Effectiveness, indicating that the absence of management effectiveness is a limitation of Zakat Governance. Furthermore, the high level of significance of the mediated effect of the series indicates that Zakat Supervision has an indirect impact on Poverty Reduction via governance and management effectiveness. The results highlight the need for an integrated institutional approach; for meaningful poverty alleviation, institutional supervision, governance and management must operate as a system and not as separate elements.

In general, this research adds to the literature by empirically confirming a serial mediation model between Zakat Supervision, Zakat Governance, Zakat Management Effectiveness, and Poverty reduction in Bangladesh. Previous studies have mostly focused on examining governance and management individually, however this research shows how governance and management work in a sequential manner to improve the effectiveness of Zakat as an Islamic social finance tool. The findings accordingly offer theoretical and practical evidence in support of the efficiency of strengthening supervisory and governance mechanisms to improve poverty reduction outcomes of Zakat programmes.

THEORETICAL IMPLICATIONS

The study contributes significantly to the Islamic social finance and Zakat management literature in several ways. First, it applied Agency Theory in order to show the role of Zakat supervision in strengthening institutional governance. The results indicate that effective supervision can decrease information asymmetry, increase transparency, and increase accountability in Zakat institutions, which in turn can strengthen good governance in Zakat institutions (Elhag, 2026; Ghaouri et al., 2023; Putra, 2026; Setyaningrum et al., 2022).

Secondly, the result of the study could support the Institutional Theory because the study found empirical evidence that effective governance is a basis for increasing the effectiveness of the operational performance of Zakat management. The findings reveal that governance structures, such as having clear policies, coordinating with stakeholders, and overseeing the system, have a significant impact on the efficiency of Zakat collection, distribution and utilization (Hassan et al., 2024; Shayee Almansoori & Al Zitawi, 2025).

Finally, this research provides confirmation of Islamic Social Finance Theory that effective management of Zakat is an important instrument that can play a role in poverty alleviation in accordance with Islamic teachings. This study differs from many of the earlier studies focusing on governance or management alone, and adds supervision, governance and management effectiveness together in a serial mediation model. The integrated perspective offers a thorough understanding of the socio-economic effects of Zakat, as it becomes clear that institutional practices play an influential role in this phenomenon (Mukhlishin et al., 2025; Rohim et al., 2026; Rusydiana et al., 2025).

In general, the study has provided a new conceptual and empirical model concerning how the sequential process of Zakat supervision is achieved, which leads to improved governance, effective management and ultimately to poverty alleviation in Bangladesh.

PRACTICAL IMPLICATIONS

This study presents several practical implications for the policy makers, Zakat institutions and other stakeholders in the Zakat administration of Bangladesh. Policymakers should tighten the regulation and put in place comprehensive supervisory mechanisms that will enhance the transparency, accountability and compliance in Zakat management. There is a need to monitor regularly and make independent audit to enhance the credibility of the institutions and boost the confidence of the public of Zakat institutions.

Secondly, Zakat institutions need to improve the governance practices by establishing clear operating policies, increasing participation of stakeholders and promoting institutional coordination. Effective governance bodies can result in improved collection, distribution and tracking of Zakat funds which can increase its social impact.

Third, the effectiveness of Zakat management needs to be enhanced by emphasizing digital record-keeping, reporting systems, and regular monitoring of the outcomes of the Zakat Supervision Programme. With proper management, the Zakat can be disbursed to the deserving ones on time, and the funds can be used for sustainable income generation, education, health services and life development.

Lastly, the results emphasize that the implementation of an integrated institutional approach, in which the institutional monitoring, governance and management are interrelated in strengthening poverty reduction capacity of Zakat institution, is very important. In enhancing these institutional aspects, Zakat can be made more effective to spearhead inclusive socio-economic development in Bangladesh.

CONCLUSION AND FUTURE RESEARCH

The study investigated the relationship between Zakat Supervision, Zakat Governance, Zakat Management Effectiveness and Poverty Reduction in Bangladesh with the Partial Least Squares Structural Equation Modeling (PLS-SEM) methodology. The observations have shown that supervision plays a crucial role in improving the governance of Zakat and good governance leads to good governance of Zakat. The better the Zakat is managed, the more it helps to alleviate poverty. Consistent with this, the mediation analysis also shows that the effect of governance and management effectiveness on poverty alleviation outcomes is a result of the interaction between these two.The mediation analysis further substantiates this, as the impact of governance and management effectiveness on poverty alleviation outcomes occurs through their interaction. The study shows that the amplification of supervisory measures is important, but only in conjunction with good governance and management, the study calls out. The research brings together these institutional aspects in an empirical context, thus providing empirical evidence for the importance of coordinating the administration of Zakat in order to improve transparency, accountability, operational efficiency and equitable distribution of resources. In general,

the findings of this study are useful and added to the existing knowledge on Islamic social finance to show the contribution of this institution to poverty alleviation as a sustainable tool, as the effectiveness of this institution is strengthened by improving the institutions themselves. The recommendations in the findings offer significant policy advice to policy makers, Zakat institutions and development workers to enhance governance and social outcomes of Zakat programmes in Bangladesh.

This study has some limitations, however. The research was cross sectional design which only gave the perceptions of respondents at one time only and did not examine the change in the attitude of the management of Zakat over time. Long-term studies could shed more light on the long-term impact of supervision and governance on poverty alleviation. Second, the study was conducted on stakeholders in Zakat management in the context of Bangladesh which may make the results less generalizable to other countries that have different institutional, cultural or regulatory context. Furthermore, the proposed model should be validated in other contexts with comparative studies across the various Islamic countries. Third, the study looked at the role of Zakat Supervision, Zakat Governance and Zakat Management Effectiveness. Further studies could introduce other factors including digital transformation, public trust, institutional performance, financial transparency, or beneficiary satisfaction, to enrich the understanding of the factors that influence the effectiveness of Zakat programmes. Last, mixed-method or qualitative research could be used for future studies to gain further insight into the experiences of the Zakat administrators, donors, and beneficiaries. These methods may be useful in enhancing quantitative data to give a more comprehensive picture of the institutional problems and possibilities in good Zakat management.

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