

Management information system adoption and municipal service delivery performance in Bangladesh

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Abstract

In the modern world, Management Information Systems (MIS) have become an integral component in public service delivery. In the notion of the fourth industrial revolution, citizens are now demanding technology-driven quick service delivery and real-time responses. From this standpoint, the principal aim of the study was to explore the impact of implementing the MIS in improving the municipal service delivery in Bangladesh. The researchers conducted the study using a quantitative research approach, while they followed a positivist research philosophy and an exploratory research approach. A survey method was carried out to collect the primary data, and following the z-score formula, 396 respondents (service providers) participated from 12 randomly selected municipalities in Bangladesh across three districts: Kishoreganj, Mymensingh, and Jamalpur. However, the findings of the study revealed that municipal corporations in Bangladesh are struggling to implement the MIS in public service delivery due to budgetary constraints, lack of skilled manpower, and inadequate training facilities. Conversely, it was found that MIS has significant potential for prompt decision-making, real-time interaction, efficient resource mobilization, and effective public service delivery to citizens. From this perspective, the study provided suitable policy recommendations to address the issues behind the successful implementation of the MIS in the municipal corporations in Bangladesh. However, the major limitation of the study was that it did not consider the service recipients' thoughts. Future research may explore the service recipients' satisfaction with the MIS-based service delivery in the municipal corporations.

Keywords: *digital governance, municipal organizations, effective service delivery, citizen satisfaction*

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1. Introduction

Improving governance is essential for promoting equitable development in emerging and developing nations because governance directly influences economic performance and social outcomes. The relationship between governance and development is complex, as several facets of governance can have varying effects on development outcomes (The World Bank, 2017). Political stability and effective governance, in particular, are strongly associated with overall development, especially economic development. Countries characterized by political stability and efficient governance tend to demonstrate stronger economic performance (Ahmed, 2023). Conversely, weaknesses in governance may constrain development. Gani (2011) found that voice and accountability, as well as corruption, were negatively associated with development, which indicates that governance deficiencies can undermine development outcomes in developing countries.

Governance challenges in developing countries can further contribute to public mistrust, institutional weaknesses, and economic stagnation (Chanda et al., 2017; Palmisano & Sacchi, 2024). One important factor underlying these challenges is the unequal access to information between citizens and government institutions. Information asymmetries can particularly disadvantage rural populations by limiting their ability to influence public service delivery. Improving access to information can therefore strengthen governance by enabling citizens to monitor service providers, assess the quality of public services, and communicate their preferences regarding government policies (Kosec & Wantchekon, 2020). From this perspective, access to reliable and timely information is not simply an administrative requirement but an important mechanism for strengthening accountability and citizen participation.

Electronic governance can play an important role in addressing these information and accountability gaps by improving the availability and accessibility of government information and services. By facilitating communication between government institutions and citizens, electronic governance can improve the monitoring of service delivery. These functions are particularly important where institutional capacity is limited and public resources are constrained. As the effective delivery of public services depends on rational institutions and well-structured administrative systems, governments must ensure that limited resources are used efficiently and effectively (The World Bank, 2017). Consequently, improvements in

governance and information access are closely interconnected and can collectively contribute to more responsive and sustainable public service delivery.

Efficient and effective service delivery is particularly important for achieving sustainable development in developing countries, where institutional and resource constraints can significantly affect citizens' access to essential services (Razia & Abu Bakar Ah, 2023). At the local level, these challenges can become more pronounced because urban local governments are often required to respond directly to growing populations and increasingly complex service demands while operating within limited administrative and financial capacities. Poor governance can further intensify these difficulties (Rauf, 2023). Strengthening local governance is therefore critical to ensuring that public institutions are capable of translating available resources into accessible services.

The importance of effective local governance is particularly evident in Bangladesh, where municipalities constitute an important part of the local government system. According to the Local Government Engineering Department (LGED), Bangladesh has 330 municipalities distributed across eight divisions, which are classified into three categories: “A,” “B,” and “C” (Miti et al., 2018). The Chittagong district has the highest concentration of municipalities, accounting for 64 of the 330 municipalities (LGD, 2025). Table 1 presents the number of municipalities across the eight divisions of Bangladesh.

Table 1

Urban local administrative overview of Bangladesh by division

Division	Headquarters	Municipalities	Area (km ²)	Population (2011)	Density (/km ²) (2011)
Barisal Division	Barisal	26	13225.20	8,325,666	613
Chittagong Division	Chittagong	64	33908.55	29,145,000	831
Dhaka Division	Dhaka	63	20593.74	46,729,000	1751
Khulna Division	Khulna	36	22284.22	15,687,759	699
Mymensingh Division	Mymensingh	28	10584.06	11,370,000	1074
Rajshahi Division	Rajshahi	62	18153.08	18,485,858	1007
Rangpur Division	Rangpur	30	16184.99	15,787,758	960
Sylhet Division	Sylhet	20	12635.22	9,910,219	779
Totals	(8)	330	147570.00	149,772,364	1015

Source: LGED, 2025

Bangladesh's municipalities are facing a governance crisis characterized by a lack of administrative efficiency, transparency, and robust civic engagement (Begum & Ahmed, 2023). These challenges undermine urban governments' ability to respond to citizens' needs and erode public trust in municipal governance systems (Zaqout & Hueso, 2020). In this context, management information system (MIS) solutions have become crucial for evaluating organizational performance (Fulweiler, 2001). MIS provides an essential framework for organizational heads and managers to make strategic decisions based on credible and relevant data that are systematically processed (El-Ebiary et al., 2023). In addition, an MIS is a system that systematically collects, organizes, and analyzes data and presents it in a manner that facilitates decision-making (Ali, 2019). Furthermore, the use of MIS in businesses offers various advantages, such as increased profits, enhanced organizational performance, and greater organizational productivity (Dwivedi et al., 2015).

In the context of Bangladesh, MIS can assist municipal organizations in addressing service delivery challenges and ensuring the effectiveness of services provided to citizens. Municipal MIS have primarily focused on improving administrative workflows, data management, and decision-making (Ali, 2019), thereby enhancing governance effectiveness and flexibility. An effective MIS can transform urban local government by improving municipal services through greater operational efficiency, enhanced transparency, and increased citizen involvement in municipal decision-making processes. Despite the advantages that such systems can offer, the use of MIS in municipal organizations in Bangladesh is relatively new, and limited research has examined their implementation, use, and impact. In this regard, this study aimed to explore the impact of implementing MIS on improving municipal service delivery in Bangladesh. In particular, this research focused on providing actionable strategies and insights into the processes and challenges associated with MIS integration for policymakers and urban local government leaders in Bangladesh.

2. Literature Review

The inclusion of MIS into governance frameworks has drawn considerable interest as a method to improve effectiveness, openness, and responsibility in public administration. This section explores the current knowledge on the adoption of MIS in municipalities, especially in developing nations. The objective is to provide a contextual analysis of particular challenges

and benefits related to the implementation of MIS in the municipalities of Kishoregonj, Mymensingh, and Jamalpur districts in Bangladesh. The review incorporates research from both international and regional studies, illustrating successful case studies and pointing out common obstacles such as insufficient digital literacy, poor technological infrastructure, and aversion to change. The study looks at theoretical frameworks and actual data to provide readers with a thorough knowledge of how MIS might change municipal government service delivery.

2.1 Current Status of Using MIS in Public Service Delivery at Municipal Services

Bari (2020) articulated that while MIS include a synergy of technology, human resources, and equipment, it is essential for businesses or institutions to ensure optimal service delivery. MIS may diminish excessive expenditures, ensure efficient and effective service delivery, facilitate prompt decision-making, and optimize the utilization of resources. The absence of IT proficiency among workers, reluctance to change, and organizational culture are identified as the primary obstacles to the MIS implementation in both public and business organizations in Bangladesh (Bari, 2020). As highlighted by Tarhan and Aydın (2019), private sector organizations throughout the world have gained significant attention from the customers through incorporating ICT and MIS in their service delivery. While the dynamic and innovative private sector businesses may readily adjust to these developments, the adoption of information technology within the Izmir Metropolitan Municipality, Turkey do not operate or behave like profit-driven entities in the private sector. As cities increasingly integrate economically, culturally, and infrastructurally, public sector entities such as municipalities must include MIS in their service delivery processes (Tarhan & Aydın, 2019).

2.2 Impact of Implementing MIS to Enhance Public Service Delivery Schemes

According to Azeez and Yaakub (2019), there is a direct correlation between MIS indicators and organizational performance, information quality, and user satisfaction. Therefore, the implementation of MIS is essential for improving service delivery in organizations. However, the study did not examine the significance of MIS in public sector organizations, such as municipal corporations. Similarly, Young-Harry et al. (2018) found that MIS has a positive and significant effect on organizational outcomes, including employee performance. Sustaining organizational success can be achieved through the regular evaluation

of MIS (Lemchi, 2018). However, this study also did not examine the status of MIS in public sector organizations or their role in public service delivery.

Aityassine (2017) found that MIS is essential for providing managers with the information required for decision-making, with moderate to high efficacy and convenience and a significant correlation between MIS implementation and the effectiveness of managerial decision-making. However, the study did not demonstrate the specific impact of MIS on municipal service delivery in developing countries. Similarly, Aalipoor and Ahmadabadi (2015) investigated the effects of implementing MIS on the organizational structure of municipalities in the Khuzestan region of Iran, which emphasized that information is an essential determinant of all forms of decision-making. MIS has a positive impact on the complexity and formality dimensions of organizational structure. However, there was no evidence to support the notion that management information systems affected centralization.

Moreover, Tarhan and Aydın (2019) argued that the rapid advancement of information and communication technology has significantly transformed management practices and perceptions worldwide. Organizational structure, human resources, and risk-taking culture have been identified as factors influencing efficient decision-making processes in municipalities. The application of MIS can enhance the efficiency and effectiveness of decision-making in municipalities and can help municipalities adapt to rapid technological advancements, thereby contributing to improved service delivery.

2.3 Research Gap

Although the previous studies demonstrated the significance of MIS in decision-making across various public and private organizations, including municipalities worldwide, no holistic study has yet explored the current status and application of MIS in the service delivery systems of municipal organizations in Bangladesh. Moreover, no specific study has examined the challenges associated with implementing MIS in the service delivery systems of municipal organizations from a Bangladeshi perspective. Specifically, previous studies have primarily examined the effects of MIS on organizational structure, culture, operations, and decision-making from Middle Eastern perspectives. While the findings of these studies are relevant to public and private organizations, they have not specifically addressed the application and implementation of MIS in municipal organizations in Bangladesh. Additionally, previous studies differ from the proposed study in terms of the study area, aims

and objectives, sampling, methods, variables, and data collection procedures. From this perspective, the present study aimed to investigate the current status and impact of implementing MIS on the service delivery systems of selected municipal organizations in Bangladesh.

3. Research Methodology

The study was guided by a positivist research philosophy and adopted an explanatory research approach. Specifically, a quantitative research approach was employed to examine the current status of the use and implementation of MIS in the service delivery systems of selected municipalities in Bangladesh. Using quantitative methods, a cross-sectional survey was conducted to collect primary data. For this purpose, a structured questionnaire was developed and administered to the participants.

3.1 Study Area

The study was conducted in municipal organizations across the Kishoreganj, Mymensingh, and Jamalpur districts of Bangladesh. Specifically, twelve (12) municipalities were randomly selected from these three districts for inclusion in the study (see Table 2).

Table 2

Study area

Division	District	Municipalities
Dhaka and Mymensingh	Kishoreganj	Bhairab Municipality
		Kuliarchar Municipality
		Bajitpur Municipality
		Katiadi Municipality
	Mymensingh	Muktagacha Municipality
		Fulbaria Municipality
		Bhaluka Municipality
		Trishal Municipality
	Jamalpur	Dewangonj Municipality
		Melandaha Municipality
		Islampur Municipality
		Jamalpur Sadar Municipality

3.2 Study Population and Sample

Since the study adopted a quantitative approach, cross-sectional survey data were collected from service providers in randomly selected municipalities in the Kishoreganj, Mymensingh, and Jamalpur districts of Bangladesh. A total of 396 participants, comprising service providers from the selected municipalities, participated in the study. These participants were predominantly officials and employees of the randomly selected municipalities within the study areas.

Probability sampling was employed to select the participants. Probability sampling involves the random selection of study participants from the target population (Elfil & Negida, 2019). Specifically, stratified random sampling was used to select the respondents from the service providers of the randomly selected municipalities across the three districts. This approach ensured that the sample adequately represented the target population within the defined study areas.

Table 3

Sample size for survey

Name of the Municipality and Country	Study Area		Criteria	No. of Participants
	Name of the District	Name of Municipalities	Service Providers	
Kishoregonj, Mymensingh and Jamalpur Districts in Bangladesh	Kishoreganj District	Bhairab Municipality	33	132
		Kuliarchar Municipality	33	
		Bajitpur Municipality	33	
		Katiadi Municipality	33	
	Mymensingh District	Muktagacha Municipality	33	132
		Fulbaria Municipality	33	
		Bhaluka Municipality	33	
		Trishal Municipality	33	
	Jamalpur Districts	Dewangonj Municipality	33	132
		Melandaha Municipality	33	
		Islampur Municipality	33	
		Jamalpur Sadar Municipality	33	
Total Respondents				396

As presented in Table 4, the demographic data provide an overview of the study participants in terms of age, gender, designation, years of work experience, and MIS-related training within municipal organizations. Understanding these characteristics is essential for interpreting the current status, implications, and challenges associated with the implementation of MIS in the selected municipal organizations in Bangladesh.

Table 4

Demographic characteristics

	Variables	F	%	Cumulative %
Gender	Male	333	84%	84%
	Female	63	16%	100%
Age Range	25-34	77	19%	19%%
	35-44	160	41%	60%
	45-54	151	38%	98%
	55-Above	8	2%	100%
Designation	Frontline Staff (Authorized Users)	301	76%	76%
	Tax Officers	39	10%	86%
	Account Officer	8	2%	88%
	City Planner and Community Officers	36	9%	97%
	Administrative Officers	12	3%	100%
Job Experience	Less than 1 Year	8	2%	2%
	1-3 Years	46	12%	14%
	4-6 Years	80	20%	34%
	7-10 Years	40	10%	44%
	Over 10 Years	222	56%	100%

Source: Field Data, 2025

84% of the participants were male, while 16% were female, indicating a gender imbalance within the municipal organizations. This imbalance may have implications for understanding the composition of the municipal workforce and its potential influence on service delivery systems. Regarding age distribution, the largest proportion of participants (40.4%) belonged to the 35–44 age group; mid-career professionals constituted a substantial proportion of the participants involved in the adoption and implementation of MIS in municipalities. The 45–54 age group accounted for 38.1% of the participants while 19.4% of

the participants were aged 25–34. In terms of designation, approximately 76% of the participants were frontline personnel, the primary users of MIS in the municipalities. Tax officers (9.0%) and city planners and community officers (9.09%) together accounted for approximately 18.1% of the participants. Administrative and financial personnel were also represented, although their proportion was comparatively smaller. Regarding work experience, 56% of the participants had more than 10 years of experience, with extensive knowledge of changes in municipal governance and the development of MIS over time. Participants with 4–6 years of experience (20%) and 7–10 years of experience (10%) provided perspectives from employees with moderate levels of experience, which may be valuable for understanding day-to-day operations and identifying operational issues. Meanwhile, junior staff members with 1–3 years of experience (12%) and less than one year of experience (2.0%) provided perspectives on onboarding, training, system usability, and the effectiveness of training processes.

3.3 Data Measurement Tools and Collection

In this study, different measurement tools were employed to collect data. Primarily, a 5-point Likert scale was used for quantitative data collection because of its ease of use and ability to effectively capture participants' evaluations. The use of this scale also helped increase the survey response rate and facilitated efficient data analysis (Finstad, 2010). In addition, closed-ended questions were used to collect the survey data.

Survey data were collected from the selected participants through a structured questionnaire administered face-to-face by trained data collectors. This method facilitated direct interaction with the participants, which allowed the data collectors to clarify questions and responses when necessary and potentially reduce nonresponse. The questionnaire was structured and standardized to ensure consistency and uniformity throughout the data collection process.

3.4 Data Analysis Method

Data analysis involves the processes of selecting, manipulating, coding, modeling, and presenting data to extract relevant information for a specific objective. The primary objective of data analysis is to generate valuable insights that can support decision-making (Ali & Bhaskar, 2016). In this study, the collected data were statistically analyzed using the Statistical

Package for the Social Sciences (SPSS), and the results were subsequently presented and interpreted in the study.

4. Findings

The cross-sectional survey data were analyzed using a univariate approach. The main findings were presented using tables, pie charts, and bar charts, with frequency distributions and percentage analyses serving as the primary methods of data presentation.

4.1 Current Status of Using MIS in Public Service Delivery at Municipal Services

One of the main objectives of the study was to assess the current state of MIS in public service delivery within municipalities in Bangladesh. This objective examined the extent to which MIS is currently utilized in municipal service delivery. Accordingly, the following findings were obtained through univariate analysis.

Table 5

Participants' length of experience on using MIS

	Frequency	Percent	Cumulative Percent
Less than 1 Year	55	13.9	13.9
1-2 Years	31	7.8	21.7
3-5 Years	57	14.4	36.1
More than 5 Years	253	63.9	100.0
Total	396	100.0	

Source: Field Data, 2025

Table 5 shows that 63.9% of the service providers had more than five years of experience using MIS in public service delivery, while 14.4% had more than three years of experience. Majority (78.3%) of them had moderate experience in using MIS for public service delivery and possessed sufficient knowledge of the advantages of MIS. Although a smaller proportion of service providers (13.9% and 7.8%) had less than two years of experience, MIS was already being utilized to facilitate public service delivery in municipal organizations in Bangladesh.

Although the majority of service providers were currently using MIS for municipal public service delivery, the findings on Table 5 also revealed that 57.8% of the service providers had not received formal training, indicating a substantial gap in their technical

capacity. In addition, 19.9% of the service providers had received basic training, suggesting limited exposure to MIS functionalities and processes. Furthermore, 10.1% of the participants had received intermediate-level training, indicating a moderate level of operational familiarity, while only 12.1% had received advanced training, representing a relatively small group of employees with extensive knowledge of MIS tools. Municipal organizations in Bangladesh may not be providing comprehensive MIS training to employees responsible for delivering services to citizens within their jurisdictions.

Table 6*Training in MIS*

	Frequency	Percent	Cumulative Percent
No Formal Training	229	57.8	57.8
Basic Training	79	19.9	77.8
Intermediate Training	40	10.1	87.9
Advanced Training	48	12.1	100.0
Total	396	100.0	

Source: Field Data, 2025

The study examined how frequently municipalities in Bangladesh use MIS in their daily operations to assess the progress of MIS implementation. Results are shown in Table 7.

Table 7*Frequency of MIS usage*

	Frequency	Percent	Cumulative Percent
Daily	206	52.0	52.0
Several Times a Week	94	23.7	75.8
Weekly	24	6.1	81.8
Monthly	16	4.0	85.9
Rarely	56	14.1	100.0
Total	396	100.0	

Source: Field Data, 2025

According to the field survey, 52% of the service providers reported using MIS in their daily operations; approximately half of the employees in municipal organizations regularly perform MIS-based tasks. However, this finding appears inconsistent with the earlier result

showing that 57.8% of service providers had not received formal training in MIS. Nevertheless, the presence of infrequent users (14.1%) and weekly and monthly users (10.1%) suggests that some employees may occupy positions in which MIS is used less frequently or may have limited training or motivation to engage with the system regularly. Despite these challenges, MIS has been integrated into key municipal processes, including data entry, monitoring, and decision-making, and has become an important component of municipal operations.

Table 8

Level of agreement on the integration of all departments within the MIS system

	Frequency	Percent
Strongly Disagree	8	2.0
Disagree	35	8.8
Neutral	28	7.1
Agree	164	41.4
Strongly Agree	161	40.7
Total	396	100.0

Source: Field Data, 2025

The study investigated the level of integration among different departments and offices within municipal organizations in relation to the implementation of MIS. The field survey revealed that MIS connects most relevant departments within the municipal organizations. Among the 396 participants, 41.4% agreed and 40.7% strongly agreed with the statement that all departments are interconnected through MIS, resulting in a combined 82.1% of participants expressing agreement. This attests that MIS integration across departments is well established and plays an important role in municipal operations. Municipal organizations have made considerable progress in integrating digital systems across their institutional structures. Furthermore, MIS integration has become an important component of operations in most municipalities, potentially contributing to more transparent, accountable, and coordinated public service management.

4.2 The Impact of Implementing the MIS to Enhance Service Delivery Schemes

MIS is widely regarded as an important mechanism for improving public service delivery by integrating technology into service provision. This objective specifically examined

the extent to which MIS has enhanced the overall efficiency of municipal service delivery, facilitated timely decision-making among service providers, improved resource allocation and management, reduced service deficiencies and delays, and increased client satisfaction following its implementation.

Table 9

Level of agreement on improved overall efficiency of the Municipal service delivery in using MIS

	Frequency	Percent
Disagree	7	1.8
Agree	120	30.3
Strongly Agree	269	67.9
Total	396	100.0

Source: Field Data, 2025

According to the field survey, the integration of MIS has significantly improved the efficiency of public service delivery in municipal organizations in Bangladesh. Among the 396 participants, a substantial majority expressed a favorable view of the role of MIS in improving service efficiency. Specifically, 67.9% of the participants strongly agreed and 30.3% agreed that MIS positively affects the efficiency of municipal services, while only 1.8% disagreed.

Table 10

Level of agreement on quicker decision-making in using MIS

	Frequency	Percent
Disagree	7	1.8
Agree	277	69.9
Strongly Agree	112	28.3
Total	396	100.0

Source: Field Data, 2025

The use of MIS has contributed to faster decision-making processes in municipal organizations in Bangladesh. Among the 396 participants, 69.9% agreed and 28.3% strongly agreed that the implementation of MIS had made decision-making faster and more efficient, while only 1.8% disagreed.

As shown in Table 11, the participants had a highly favorable perception of the role of MIS in improving resource allocation and management for service delivery operations in the

sampled municipalities in Bangladesh. 71.7% of the participants strongly agreed and 26.3% agreed that MIS had improved resource management, while only 2.0% remained neutral. This high level of agreement may be attributed to the capacity of MIS to facilitate systematic data collection, real-time tracking, and continuous monitoring, thereby supporting more informed and timely decision-making.

Table 11

Level of agreement on better resource allocation and management in using MIS

	Frequency	Percent
Neutral	8	2.0
Agree	104	26.3
Strongly Agree	284	71.7
Total	396	100.0

Source: Field Data, 2025

The implementation of MIS has contributed to reducing errors and service gaps in the selected municipalities in Bangladesh (Table 12). Among the 396 participants, 52.8% strongly agreed and 45.2% agreed that MIS had helped reduce errors and interruptions in service delivery, while only 2.0% disagreed. MIS has contributed not only to operational efficiency within municipal organizations but also to the reliability of municipal services.

Table 12

Level of agreement on reduction of errors and service delays in using MIS

	Frequency	Percent
Disagree	8	2.0
Agree	179	45.2
Strongly Agree	209	52.8
Total	396	100.0

Source: Field Data, 2025

As shown in Table 13, 44.2% of the 396 participants agreed and 43.9% strongly agreed that clients had been satisfied with municipal services since the implementation of MIS. Meanwhile, 9.8% expressed a neutral response, while only 2.0% strongly disagreed. A substantial majority of participants perceived improvements in service quality and

responsiveness following the implementation of MIS in municipal organizations. This finding is significant because MIS can enhance transparency, accountability, and efficiency in service delivery, which may contribute to greater client satisfaction. By automating processes, reducing delays, minimizing errors, and facilitating communication between service providers and recipients, MIS can make municipal services more accessible and responsive to citizens.

Table 13

Level of agreement on satisfaction with MIS services

	Frequency	Percent
Strongly Disagree	8	2.0
Neutral	39	9.8
Agree	175	44.2
Strongly Agree	174	43.9
Total	396	100.0

Source: Field Data, 2025

4.3 The Challenges in Implementing MIS in the Municipal Organizations

MIS has substantial potential to enhance public service delivery; however, issues related to data privacy, data quality, data integration, user acceptance, and infrastructure can pose significant challenges to their implementation within organizations. Therefore, the study investigated the challenges associated with the successful implementation of MIS in municipal organizations in Bangladesh. The following sections present the major challenges affecting the implementation of MIS in the selected municipalities in Bangladesh.

Table 14

Challenges in MIS implementation

Challenges	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
Lack of sufficient funding	8	2.0	24	6.0	16	4.0	79	20.0	269	68.0
Shortage of skilled technical personnel to manage the MIS	16	4.0	48	12.1	15	3.8	112	28.3	205	51.8
Insufficient training programs hinder the proper use of MIS	8	2.0	32	8.0	0	0	194	49.0	162	41.0
Bureaucratic complexity	24	6.1	155	39.1	87	22.0	75	18.9	55	13.9

Source: Field Data, 2025; Legend: Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (SA); Frequency (F)

In terms of the inadequate financial resources, among the 396 participants, 68.0% strongly agreed and 20.0% agreed that inadequate funding is a major obstacle to the effective implementation of MIS, resulting in a combined 88.0% expressing agreement. In contrast, 6.0% disagreed, 2.0% strongly disagreed, and 4.0% remained neutral. Insufficient funding is perceived as a significant barrier to MIS implementation, which constrain investments in critical components such as digital infrastructure, hardware and software, staff training, system maintenance, and technical consultancy.

In terms of the shortage of skilled technical personnel, 51.8% of the participants strongly agreed and 28.3% agreed that a lack of skilled personnel is a significant challenge, resulting in a combined 81.1% acknowledging it as a pressing issue. In contrast, 12.1% disagreed, 4.0% strongly disagreed, and 3.8% remained neutral. The technical human resource constraints are a major barrier to the effective implementation and management of MIS in municipal organizations. Even when appropriate hardware and software are available, the absence of skilled personnel may limit their effective use and long-term sustainability. Skilled MIS personnel are essential for tasks such as data management, system customization, cross-departmental integration, and cybersecurity.

In terms of the insufficient training programs, 49% of the participants agreed and 41% strongly agreed that a lack of adequate training is a significant barrier to the effective use of MIS, resulting in a combined 90% who identified insufficient training as a critical issue. In contrast, only 8% disagreed and 2% strongly disagreed with the statement. Although municipalities may have adopted MIS infrastructure, the absence of structured and continuous training programs may limit its effective utilization. Furthermore, inadequate training may contribute to underperformance, data mismanagement, and reduced coordination among different departments.

The bureaucratic processes that impede the implementation and expansion of MIS in local government settings had varied perceptions. A significant proportion, 39.1%, disagreed and 6.1% strongly disagreed that bureaucratic processes constitute a major barrier to MIS implementation, resulting in a combined 45.2% expressing disagreement. In contrast, 18.9% agreed and 13.9% strongly agreed that bureaucratic procedures hinder MIS implementation, representing 32.8% of the participants. Meanwhile, 22% remained neutral, suggesting some uncertainty or variation in perceptions across departments or municipalities. These mixed responses indicate that the extent to which bureaucratic processes affect MIS implementation

may vary across municipal organizations. Where bureaucratic inefficiencies exist, factors such as rigid hierarchies, limited interdepartmental coordination, slow decision-making, and extensive administrative procedures may delay system integration, procurement, and project approvals.

5. Discussion

The MIS is a systematic framework that gathers, stores, and evaluates necessary data to support decision-making. It ensures the collection of relevant information and the organization of data to enhance strategic insights and operational efficiency. It also serves as a catalyst for real-time reporting, predictive analytics, and interdepartmental collaboration (Thorson, 2025). To examine the current status of MIS implementation in municipal organizations in Bangladesh, the study first considered the demographic characteristics of service providers, including their experience and training in using MIS. The findings revealed that the majority of participants, who were predominantly frontline service providers, lacked formal MIS training. Although there was a high demand for MIS in public service delivery within municipal organizations in Bangladesh, the workforce was predominantly male, and the implementation of MIS remained incomplete despite municipal organizations providing MIS-based services to urban citizens. Bari (2020) supported these findings that although MIS integrates technology, human resources, and equipment, institutions must ensure their effective utilization to achieve optimal service delivery. MIS can reduce unnecessary expenditures, promote efficient and effective service delivery, facilitate timely decision-making, and optimize resource utilization.

According to the field survey, 82.1% of the participants agreed that the advantages of MIS included the interconnection of departments within municipal organizations. Furthermore, the majority of service providers (55.8%) demonstrated a significant commitment to the proper and timely maintenance of digital data. The municipal organizations have made considerable progress in digitizing their operations and are working toward improving public service delivery. In this regard, Ijeoma et al. (2018) supported these findings, arguing that MIS has introduced a new dimension to public service delivery while Mary and Ph (2018) add that it provided substantial support for improving the quality of public services.

Additionally, the study findings demonstrated that MIS contributed to improvements in several aspects of municipal service delivery, including overall service efficiency, with 68%

of participants strongly agreeing; faster decision-making, with 70% strongly agreeing; improved resource utilization, with 71.7% strongly agreeing; and error reduction, with 52.8% strongly agreeing. Therefore, MIS has been perceived as an important mechanism for improving the efficiency and effectiveness of municipal service delivery. These favorable outcomes may also contribute to improved public satisfaction. In this regard, Azeez and Yaakub (2019) contended that the implementation of MIS is crucial for enhancing service delivery in organizations while Young-Harry et al. (2018) emphasized the importance of regularly evaluating MIS to sustain organizational performance, since it positively influences organizational performance and may help reduce organizational complexities (Aalipoor & Ahmadabadi, 2015).

Correspondingly, the study identified several challenges associated with the successful implementation of MIS in municipal organizations in Bangladesh. Municipal organizations continue to experience financial constraints, shortages of trained personnel, insufficient training opportunities for staff, and inadequate infrastructure. Huque and Ferdous (2024) asserted that technology-driven public service delivery in Bangladesh remains substandard and identified several obstacles to establishing digital public service delivery in local government organizations, including limitations in communication channels, inadequate service provider skills, insufficient budgetary support, shortages of human resources, and weak political commitment. Furthermore, Opoku (2015) contended that insufficient resources, such as financial capital, personnel, infrastructure, and managerial support, were among the primary impediments to the implementation of MIS.

Municipal organizations in Bangladesh have made progress in adopting MIS for service delivery, particularly in improving departmental integration, decision-making, resource utilization, and operational efficiency. However, challenges related to funding, human resources, training, and infrastructure continue to constrain its effective implementation. Therefore, the relevant authorities should formulate and implement appropriate policies and institutional measures to address these challenges and strengthen the implementation of management information systems in municipal organizations in Bangladesh.

6. Conclusion

The municipal organizations in Bangladesh face challenges in implementing MIS for public service delivery due to budgetary constraints, a lack of skilled personnel, inadequate infrastructure, and insufficient training facilities. Conversely, MIS has considerable potential to facilitate timely decision-making, real-time information exchange, efficient resource mobilization, and effective public service delivery to citizens. From this perspective, the study suggests that municipal organizations promote accountability, transparency, efficiency, and effectiveness in the implementation of MIS for public service delivery. In addition, municipal organizations should take necessary measures to provide training to their employees, assess their existing skills, and provide appropriate guidance to support the effective implementation and use of MIS in municipal organizations in Bangladesh.

Addressing the identified challenges requires a multifaceted approach to effectively overcome the barriers to MIS implementation in municipal organizations in Bangladesh. The following policy recommendations are therefore proposed:

Firstly, although municipal organizations are semi-autonomous entities, they should strengthen their revenue-generating capacity and allocate sufficient financial resources for the adoption and implementation of MIS in service delivery. At the same time, municipal organizations in Bangladesh should seek greater governmental support to address the financial and institutional challenges that hinder the successful implementation of MIS in municipal public service delivery.

Secondly, municipal organizations should undertake appropriate measures to provide sufficient training to their staff, particularly on the implementation, operation, and coordination of MIS within service delivery processes. This can be achieved through a phased training approach. During the initial phase, priority should be given to frontline service providers who are the primary users of MIS, followed by back-office operators and other relevant personnel in subsequent phases.

Thirdly, municipal organizations in Bangladesh should recruit and retain qualified personnel with the necessary technical competencies and provide them with foundational and continuous training in the implementation and management of MIS.

Fourthly, municipal organizations should reduce bureaucratic complexities associated with the implementation of MIS in public service delivery. Excessive bureaucratic procedures, rigid administrative structures, and delays in decision-making can impede the effective adoption and integration of MIS within municipal operations.

Lastly, effective collaboration between the government and municipal organizations is essential for the successful integration of MIS into public service delivery. Such collaboration can support the development of appropriate policies, financial mechanisms, technical infrastructure, training programs, and institutional arrangements necessary for the sustainable implementation of MIS in municipal organizations in Bangladesh.

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