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Exploring the Adoption of AI-Enabled Human Resource Management in Bangladesh's Government Institutions

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Abstract:

- ***Purpose:***
This paper explores the implementation of artificial intelligence (AI) in human resource management in the Bangladesh government sector. The study uses survey data of 400 government officials in the public organizations of Bangladesh and utilizes qualitative insights to assess institutional readiness, perceived obstacles, and possible implementation strategies.

- ***Study Design:***
The study follows a quantitative approach by conducting descriptive statistics, regression, and correlation analyses. A questionnaire is developed to measure the variables of the study through a survey.

- ***Findings:***
The results indicate moderate levels of readiness in data systems, leadership awareness, and critical gaps in human capacity, data quality, and ethical governance. Although there is great evidence of the benefits of AI, there are still major infrastructural and regulatory hurdles. The regression and correlation analyses provide confirmation that both awareness of readiness and barriers play a significant role in the implementation of AI, which suggests integrating AI in human resource management by following step-by-step, government-based, and capacity-based strategies, aligning with national policy goals.

- ***Value:***
This study shows the pathways and opportunities for policymakers of Bangladesh's law enforcement agencies to introduce AI-driven human resource management practices by obtaining clear and fair perceptions of law enforcement professions.

Keywords: *Artificial Intelligence, Human Resource Management, Public Sector Governance, AI Readiness, AI Implementation, AI Barriers, Bangladesh.*

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I. INTRODUCTION

Artificial intelligence (AI) is transforming the human resource management (HRM) frameworks away from rule-based operations to workforce management that is predictive and evidence-based (Qumar et al., 2021). In private companies, the transition has been fast as performance analytics and personalization of learning strategies are being moved to machine learning models that maximize selection, save time-to-hire and reveal skill gaps that are unattainable in HR databases (Hiran et al., 2023). Recent studies indicate that AI is reaching every point of the HR life cycle, such as workforce planning and talent acquisition to retention analytics and the new legal and ethical dimension and that the effects of AI hinge not only on a particular algorithm but on the ability of organizations to apply model outputs to policy and human judgment (Nawaz et al., 2024; Dima et al., 2024).

The noteworthy differences between the public sector HR practices and the practices in the private sector are limited transparency, equity, and regulation in contemporary mechanisms. Whereas in private HRM, efficiency and market fit are of primary concern, when fairness, civil-service rules, and political accountability are central concerns of a

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governmental HRM. Automated shortlists or performance scores that make firms more efficient can create legal, ethical, and legitimacy problems when used to determine promotion, tenure, or to allocate benefits in government (Johnson et al., 2022). In comparative analyses of AI implementation in government institutions, governance-design procurement regulations, explainability needs, and human-in-the-loop monitoring appear to be decisive facilitators or obstacles to responsible AI implementation (Selten et al., 2024).

Unlike private firms that primarily pursue profit maximization, public organizations operate under a mission to create public value for society (Leisink et al., 2021; Shi, 2023). This mission often involves multiple and sometimes conflicting goals that make it challenging to align HRM policies with strategic organizational objectives (Leisink et al., 2021). The political environment is a primary differentiator. Public organizations are subject to distinctive social controls and political influences that are largely absent in market-driven competition (Chourasia et al., 2023). The structural basis for organizing personnel differs significantly between the two sectors. Public HRM is typically governed by statutes and civil service laws that emphasize meritocracy, transparency, and entrance exams for recruitment (Holcman, 2007; Poljašević et al., 2025). In contrast, the private sector operates under broader labor laws and individual contracts, allowing for greater freedom in setting pay scales and conditions (Holcman, 2007). While some public administrations have moved closer to private models to improve efficiency, reforms are often hindered by institutional inertia, historical legacies, and entrenched bureaucratic cultures (Poljašević et al., 2025).

Comprehensive literature on low- and middle-income countries (LMICs) identifies four issues that showcase empirically based barriers to successful AI implementation in public administration: (1) infrastructure and data readiness of encompassing irregular HR information systems and old-fashioned databases preventing model training; (2) human capital and AI literacy issues as lack of personnel able to interpret and act on model outputs; (3) institutional incentives and procurement barriers lead to inflexible supplier selection procedures and limited budgets that lock-in agencies on one-off pilots; and (4) lack of regulatory and ethical knowledge of other fields such as health, local services, and federal government indicates that these barriers are not exactly technical but socio-institutional, and that they can only be addressed with coordinated policy, capacity building, and reform of the HR processes instead of mere tool purchase (Hassan et al., 2024).

Bangladesh is clearly framing AI as a national modernization agenda that articulates pillars of R&D, skill development, data infrastructure, and governance, but implementation is not yet even across ministries and agencies (ICTD, 2020). Partial digitalization in payrolls, basic personnel records and theory policy analyses is already implemented across the public sector. For instance, field studies of HRM digitization in health and administrative units of the Bangladeshi government report partial digitalization and identify gaps in different areas such as limited interoperability, poor data governance, and limited formal pathways to upskill civil servants in data science and AI ethics (Bhattacharyya et al., 2021). According to case studies, conceptual readiness is on a national level and operational readiness on the departmental and unit level, which is still in an initial stage of readiness (Akhter et al., 2024).

Collectively, the literature proposes a research agenda that outlines the research question of whether AI can enhance HR tasks to consider how the adoption of AI can be undertaken responsibly by public organizations with the help of aligning technical capacity, legal protections, and process redesign (Selten et al., 2024; Marzouki et al., 2023). Digital and data readiness, quantitative measures, and qualitative investigation of the institutional practices will indicate the multi-layered nature of the conditions under which AI can be implemented in Bangladeshi governmental institutions without jeopardizing equity, accountability, or trust of employees. The practical focus of the study on technical, human, and institutional obstacles and the tangible implementation plans, including procurement models, training pathways, data governance templates, and human-in-the-loop protocols, will develop empirical advice instead of theoretical advice.

This study evaluates the readiness of public institutions of Bangladesh to initiate the use of AI technologies in HRM practices, such as data infrastructure, legacy systems, workforce AI literacy, and policy framework, in a systematic fashion, while determining and categorizing the actual and institutional barriers that hinder adoption and generating deliverable strategies to implement responsible deployment of AI in HRM. The research methodologically is a mixture of cross-sectional readiness surveys of ministries and government offices, together to generate prioritized and context-sensitive recommendations that can be operationalized by the government officials, authorities, public administrations, and policymakers in the context of the Bangladesh National AI Strategy.

- *Problem Statement*

The increasing use of AI in HRM is shifting the process by which organizations recruit, appraise, and train the workforce. Whereas the global adoption of AI-enabled systems by private companies is quickly being implemented to maximize efficiency and the decision-making process, the opposite is the case with the challenges confronting public sector organizations. Ministries and public organizations in Bangladesh are forced to transform HRM as per the National AI Strategy. They do not have an effective HR practice; however, their current HR practices are still very reliant on disorganized information systems, paper-based records, and age-old digital systems. The empirical studies show that the preparedness of these institutions remains uneven, as some of them may have conceptual enthusiasm expressed in the form of their national policy frameworks, yet the majority of them do not show operational preparedness in terms of technical capacity, data quality, and human capital.

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The obstacles are not only technical. The rules of procurement are rigid when budgets are limited, and professionals with AI literacy are lacking in interpreting and operationalizing outputs. Issues of equity, transparency, and ethical protection also increase the challenge of adoption since the HRM practices in governmental institutions are expected to have a higher standard of accountability, which is not found in private firms. These considerations pose urgent questions about whether the governmental organizations of Bangladesh are really prepared to embed AI within HR departments and what the obstacles are in their way, as well as how the implementation strategies can be developed to make the use of AI responsible, equitable, and sustainable. Unless those issues are resolved, AI implementation in HRM will likely be rambling, inconsistent with governance values, and even unfavorable to the confidence of the public in the institution.

➢ *Research Objectives*

This study aims to investigate the readiness of the public sector institutions in Bangladesh to integrate AI tools in their HRM practices through the systematic evaluation of their information and system infrastructure, human capacity and culture for AI adaptation, and institutional, legal, and governance readiness. It also aims to determine and classify the obstacles that affect adoption, namely, technical constraints, institutional disinterest, purchasing constraints, skills gap, and ethics. In addition to the identification of readiness and barriers, the study identifies practical, context-specific implementation approaches, including procurement models, staff training programs, human-in-the-loop governance frameworks, and data governance frameworks. The research aims to produce practical recommendations that can guide policymakers as well as government officials in balancing AI uptake with the overall objectives of the Bangladesh National AI Strategy by incorporating the results of a cross-sectional survey.

➢ *Research Questions*

- What is the level of readiness of public sector institutions in Bangladesh for adopting AI-driven human resource management practices?
- What are the major barriers that influence the adoption of AI in human resource management in Bangladesh's public organizations?
- What implementation strategies are most suitable for ensuring effective integration of AI-driven HRM systems in the public sector of Bangladesh?
- What is the impact of AI readiness and barriers on AI implementation in Bangladesh's public sector institutions?
- What are the suitable recommendations for AI adoption in Bangladesh's public organizations by enhancing readiness, reducing barriers, and obtaining efficient implementation strategies?

➢ *Theoretical Framework*

The study examines the readiness, challenges, and implementation approaches of artificial intelligence (AI) in human resource management (HRM) within the public sector of Bangladesh using a multi-theoretical approach. The main theoretical model used for the study is the Technology–Organization–Environment (TOE) Framework developed by Tornatzky and Fleischer, which is complemented by the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) Theory, and Institutional Theory. A combination of these theories can be used to explain the adoption of technology in government institutions.

The TOE framework states that the success of AI adoption relies on technology, organization, and environment. Technological readiness is defined in this study as data infrastructure, digital systems, and information management capacity. Organizational readiness is a combination of human capacity, AI literacy, leadership awareness, and organizational culture related to the implementation of AI. Environmental readiness encompasses the institutional, legal, and governance factors that affect the implementation of AI in public organizations. The Technology Acceptance Model developed by Fred Davis has helped support the study by presenting insights on the perception of the usefulness and ease of use of the AI technology in HRM among government employees. This theory can serve as a tool for gauging perceived benefits and resistance to AI adoption. In the same way, the Diffusion of Innovation Theory (DIT) by Everett Rogers describes how AI innovations are diffused into ministries and public institutions, and it depends on their relative advantage, complexity, and compatibility. Moreover, the Institutional Theory provided by Paul DiMaggio and Walter Powell helps to understand the impact of regulations, norms, and pressures in the governance of public institutions on their implementation of AI-based HRM systems. These theories offer valuable conceptual background for the study on how AI readiness, perceived barriers, and benefits are related to preferences for implementing AI-driven HRM in the public sector in Bangladesh.

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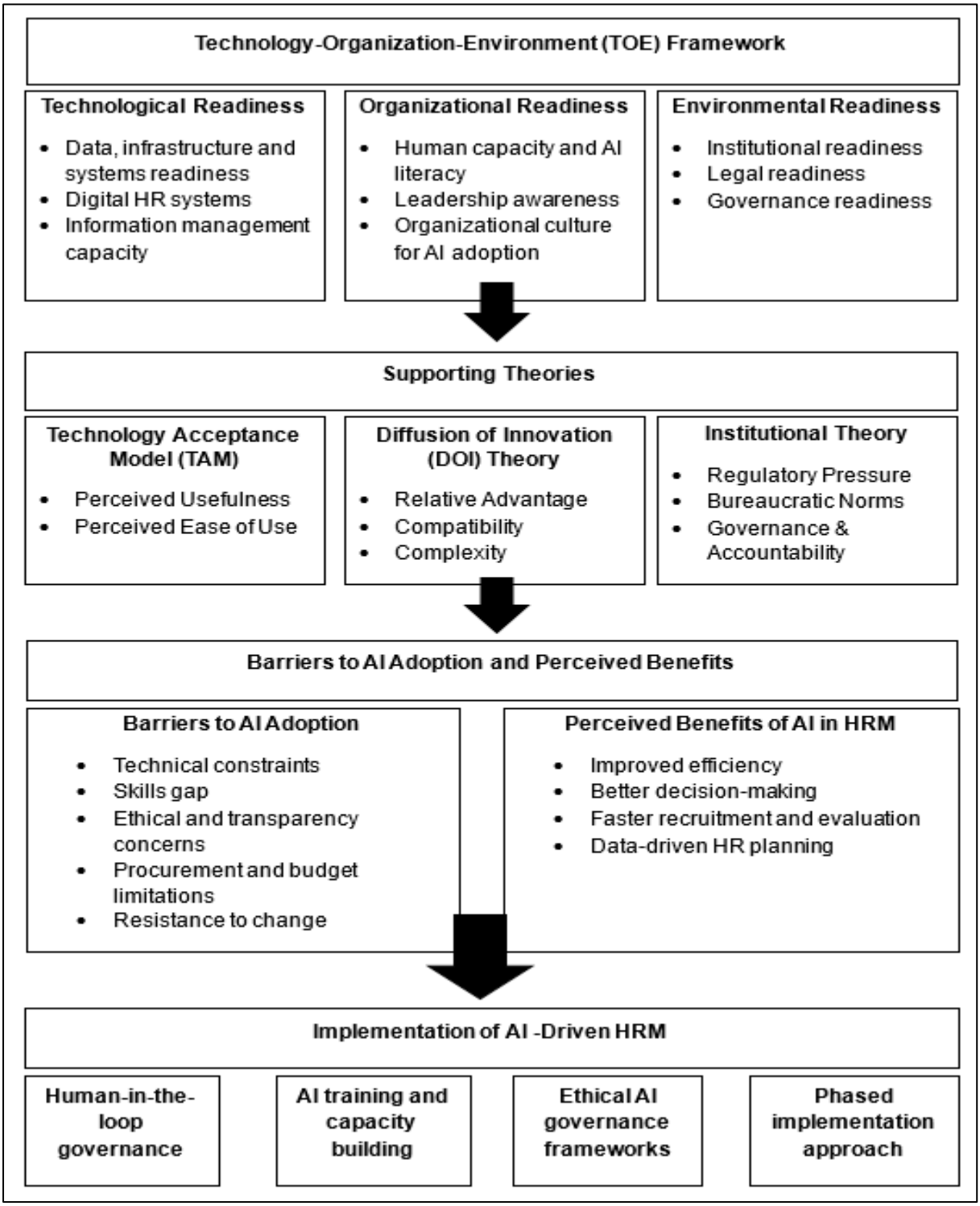


Fig 1 Theoretical Framework

II. LITERATURE REVIEW

Some critics of New Public Management (NPM) state that the gap between public and private can be too wide for business practice to be exported to the public sector. Public organizations are discovered to be more bureaucratic, and public managers are less materialistic and have less organizational commitment compared to their private sector counterparts. Private sector HRM is more focused on the market and performance while dealing with data management and staff capabilities. (Boyne, 2002; Cho et al., 2023). In contrast to firms seeking competitive advantage, public HR is more strictly governed by legislation and rules, as well as by political pressure and budget constraints, and has undergone legal and procedural changes, yet it faces challenges in implementation because of deeply rooted bureaucratic HR cultures and because of limited professionalization of HRM tasks (Poljašević et al., 2025).

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AI is used in the recruitment/selection process, training and development, performance management, compensation, retention, workforce planning, and HR analytics. Public administration (PA) has seen the emergence of human resource management (HRM) applications that aim to increase the efficiency, economy, and effectiveness of public service with the aid of advances in big data and artificial intelligence (AI), such as machine learning (ML) and other cognitive computing technologies (CCT) (Johnson et al., 2022; Safshekan et al., 2026). Public HRM concerns are primarily focused on algorithmic bias, fairness, and issues regarding traditional values in merit-based systems. The study revealed that the hiring bias is reduced by an astounding 56.8%, staff retention goes up by 41.3%, and the document classification accuracy using machine learning algorithms and cloud infrastructure is 82.6% (Devaraju, 2024). In public organizations, diffusion is hindered by a lack of expertise, cost, resistance to change, small and poor-quality datasets, and legal/ethical constraints, particularly in developing contexts (Mwita & Kitole, 2025). It is recommended that public institutions create strong ethical organizational structures, build the capacity of HR practitioners, and ensure human supervision in AI-involved processes. By addressing these concerns, public institutions can mitigate risks, improve AI adoption, and optimize the potential of AI to enhance HR practices, offering a roadmap for equitable, effective, and ethical implementation of AI technologies in workforce management (Mwita & Kitole, 2025).

The key elements of a successful adoption are data infrastructure, staff analytical skills, managerial skills, and a supportive culture. A study underscores the importance of having robust data infrastructure, organized employee training programs, and clear ethical guidelines as key success factors (Bian et al., 2025; Garg et al., 2021). A study has also found that there is a significant operational efficiency improvement in the governments that implement these systems, with processing times reduced by 47.2% and the accuracy of allocating resources to the budget by 31.4% (Devaraju, 2024). Limited knowledge, cost, resistance to change, limited or low-quality data, and legal/ethical issues are among the factors that impede the diffusion in public organizations, particularly in a developing context (Malik et al., 2022; Bian et al., 2025). As per the research, there is still a lack of ethical and governance aspects, particularly in relation to the long-term welfare of the employees and for sustainable HR management. Based on the study, a human-centered approach that prioritizes technical efficiency while also promoting inclusivity, equity, and sustainability is proposed (Sundari et. al., 2025).

The move towards AI-based Human Resource Management in the Bangladesh public sector is a frontier area in the country's "Smart Bangladesh 2041" agenda. Despite AI's potential for efficiency and meritocracy, evidence from recent literature suggests a readiness gap in Bangladesh's public sector (Alam et al., 2020; Islam, 2025). Bangladesh exhibits a "wariness" in readiness for AI in HRM. Despite HR practitioners' recognition of the potential for AI to alleviate administrative tasks and answer mundane questions, its adoption is incredibly slow (Alam et al., 2020).

In Bangladesh, several factors like performance expectancy and facilitating conditions play a crucial role in the adoption of AI for recruiting (Islam, 2025). Yet, the perceived credibility of AI systems often fails to be a significant factor, implying that although there's the "will" to adopt AI, establishing trust in AI's output is not yet fully entrenched (Islam, 2025). Comparable analyses of public sector settings suggest that while individual employees may be ready for AI adoption, the whole organization is not, lacking "Strategic Readiness" (Talwar et al., 2026; Smith et al., 2025). In Bangladesh, government bureaucracy traditionally has a lagging effect on the adoption of strategic tools such as e-HRM (the precursor to AI) (Rahman et al., 2018).

The biggest constraint for Bangladesh is a persistent "human resource gap" and a lack of success stories using AI in Bangladesh. This is further hampered by integration and maintenance costs that put pressure on government finances (Khdour et al., 2025). Resistance to change within the public sector is often due to personal fears of job loss and social upheavals (Burlacu et al., 2019). Furthermore, issues of data privacy and security relating to sensitive government personnel data are powerful disincentives (Alam et al., 2020; Madanchian and Taherdoost, 2025). In case studies of comparable public sector institutions in the Global South, concerns arise over "algorithmic bias" and transparency in AI-based evaluation (Cahyani and Musslifah, 2025). The potential risk of AI undermining human decision-making in culturally nuanced assessments is also evident and is a concern, given the importance of "merit system principles" and equity in the public sector (Johnson et al., 2022).

Approaches should prioritize the integration of AI with other e-governance initiatives to enhance compatibility with other government units. This includes building "Public Sector Information Systems" to support data management for AI applications (Chilunjika et al., 2022). A "policy vacuum" needs to be addressed by establishing national AI strategies that focus on HRM (Islam, 2025; Silitonga and Isbah, 2023). Plans should focus on hiring "comprehensive talents" and not just "work content fit" to make the workforce capable of the digital economy (Liu and Xu, 2021). Adoption strategies should prioritise "balanced integration", with AI performing routine tasks and humans overseeing critical decisions such as performance appraisal and executive selection (Talwar et al., 2026).

Algorithmic bias, privacy, and transparency concerns are strong resistance factors in the adoption of AI in HRM in Bangladesh (Islam, 2025; Gupta et al., 2025). HR professionals' digital literacy is a major issue. Furthermore, privacy, surveillance, and feelings of job insecurity can cause resistance and technostress (Wójcik, 2025). There may be resistance to AI technologies at the organizational level (Wójcik, 2025).

Adoption of AI in HR systems in the private and public sectors in Bangladesh is still at its infancy and unevenly used, with the potential to grow beyond recruitment to include broader workforce analytics, learning, performance

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management, and digital public HR systems. There is current evidence of good opportunities for efficiency, transparency and improved decision-making, though the primary barriers are cost, infrastructure, skills, governance, and ethical oversight (Johnson et al., 2022). The literature indicates that AI-HRM in Bangladesh is poised to transcend the screening of CVs into a more advanced realm of the future. The current literature on the subject of Artificial Intelligence in HRM highlights the following areas being transformed by intelligent automation: recruitment, training, job performance, decision-making, and learning (Vrontis et al., 2021; Gong et al., 2024). There is now in-country research to support that shift in Bangladesh; qualitative studies have shown benefits in hiring, as well as in employee engagement and involvement, in relation to experiences created through personalization and real-time feedback (Khan et al., 2025; Hossin et al., 2021); conceptual research has suggested that personalization can benefit the development and retention of talent, learning, and reducing turnover rates.

The evidence from Bangladesh suggests a positive movement in performance management from periodic, judgmental appraisal to data-driven appraisal. While AI systems are seen as potentially boosting transparency, fairness, and efficiency, there are concerns about excessive automation when making decisions, according to employees (Nath et al., 2025). Predictive analytics in HR may be the main application of high value; in the telecom industry, there was evidence of the best links with employee development and performance management, with AI-based performance analytics having a more limited impact on performance management and intelligent learning systems having a more limited impact on employee development (Rabby et al., 2025).

Future literature indicates that acceleration is selective and not a universal transformation. It seems that the private sector will remain dominant in areas like recruitment automation, predictive analytics, and HR tools for employees, likely in bigger organizations and in sectors with a strong digital presence like telecom and healthcare (Khan et al., 2025; Hossin et al., 2021). The public sector is also more likely to benefit from the expansion of HRIS, administrative automation, and workforce planning facilitated by AI; however, its momentum would rely more on the design of HR policies, the required infrastructure, leadership commitment, and governance protection against government officials' malfeasance and misuse of merit-based mechanisms (Johnson et al., 2022; Makhdum, 2024).

- *Research Gaps*

Although the literature on Artificial Intelligence (AI) in Human Resource Management (HRM) has been increasing, there are some important gaps in it that warrant attention, especially in the context of the public sector in Bangladesh. Previous research on the adoption of AI in HRM has mainly focused on developed economies or private sector companies with relatively greater technological infrastructure, organizational flexibility, and financial resources. While a few studies have considered the adoption of AI in Bangladesh, they are mainly focused on private sector recruitment processes and have not sufficiently explored the administrative, legal, and bureaucratic context of the public sector. Therefore, there is not much empirical evidence available regarding the implementation of AI in public HR systems in Bangladesh.

The literature indicates that Bangladesh's attitude toward the use of AI is cautious, but there is no systematic evaluation of the readiness of public institutions towards AI-based HRM so far. The existing research covers each of the three factors (performance expectancy, facilitating conditions, and organizational preparedness) individually, without considering technological, organizational, human, and strategic readiness in public organizations as an integrated assessment. Thus, there is no clarity for policymakers regarding the infrastructure, capacities, and leadership support, as well as governance structures that public agencies have for effective implementation of AI.

Resistance to change, inadequate digital skills, financial constraints, privacy concerns, and algorithmic bias have been cited as barriers to successful public sector adoption of AI, though these issues have not been studied in depth in the public sector in Bangladesh. The influence of bureaucratic culture, politics, regulatory constraints, and employee attitudes on the adoption of AI is not well understood. If these barriers are not identified and prioritized, effective implementation policies cannot be developed. The themes of ethical governance, human supervision, data infrastructure, and staff training are highlighted in the current literature. Very few studies, however, offer frameworks for implementing them in the context of public administrations in developing countries. The majority of recommendations are general without paying attention to the institutional contexts of Bangladesh, such as policy contexts, budget constraints, and administrative processes. This has led to a lack of clarity on how governments can move from conventional HR systems to AI-integrated HR. Consequently, there is limited support from the literature on how governments can shift from the traditional HR system to AI-based HRM.

The debate on transparency, fairness, accountability, privacy, and algorithmic biases is often raised, but there is not much evidence in this regard about how these issues can be addressed in the context of public service in Bangladesh. There have been no studies conducted on governance mechanisms, ethical protection, and regulatory readiness, leaving uncertainty in the responsible use of AI.

The research is thus needed as it fills the above-mentioned gaps by exploring the preparedness of the public sector in Bangladesh for AI-based HRM, enunciating the critical barriers that constrain the implementation of AI in HRM, and proposing context-specific recommendations for implementation. The study will provide evidence-based information to policymakers, public administrators, and HR practitioners, which will help design good public administration governance frameworks and contribute to achieving the vision of a digitally transformed and efficient public administration under the Smart Bangladesh 2041 project. The study will ultimately help to connect theoretical

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discussions on AI-HRM with its practical implementation in the institutions of the public sector in Bangladesh.

III. METHODOLOGY

The research follows a quantitative study to produce an all-encompassing view in the field of AI implementation in the human resource management of the Bangladesh government. The quantitative strand quantifies readiness, barriers, and implementation strategy with the help of a structured survey tool. The method provides depth and extensiveness of analysis, which makes sure that the findings reflect not only statistical trends, but also the background details of the context in which the adoption is determined.

➢ *Population and Sampling*

The study is aimed at people having direct access to human resource management, digitalization, or decision-making within public organizations. The major respondents are the public administrators, IT professionals engaged in the ministries, and senior staff members involved in the HR policy and practice. In the case of the quantitative strand, stratified purposive sampling is used to obtain a representation that cuts across organizational types and sizes, with special attention given to IT professionals and HR administrators.

The sample size is calculated based on a 95% confidence level (Z= 1.96), 50% estimated proportion (p), and a 5% margin of error (Suresh et al., 2012; Cochran, 1977).

The sample size is calculated by following formula:

Sample size for infinite population, $SS = [Z^2 \times P \times (1 – P)] \div E^2$

$SS = [1.96^2 \times 0.5 \times (1- 0.5)] \div 0.05^2$

$SS = 0.9604 \div 0.0025$

$SS = 384.16$

Therefore, the sample size is considered 400 to collect the data through the questionnaire for better data management, data analysis, and research outcomes.

➢ *Data Collection*

The data collection involves the use of a structured multiple-choice questionnaire to evaluate readiness, barriers, and strategies of implementation. The questionnaire tool is constructed on multiple dimensions, including readiness of AI adoption (data, infrastructure, and systems readiness; human capacity and culture; institutional and governance readiness), barriers to AI adoption (perceived barriers and perceived benefits), and implementation of AI (preferences for implementation strategies). The respondents are requested to provide their evaluation on their agreement or perception on a five-point Likert as well as a range of categorical questions will be used to obtain the preferences of the organization toward AI pilots, decision-making authority, and models of procurement. The survey is conducted online and face-to-face among the IT professionals, HR managers, and senior employees working in the governmental organizations so that optimum views and insights can be covered. Type of the organization, size of workforce, annual digitalization budget, availability of human resource information system, primary implementer of HR technology, and the role of the respondents are also recorded through the survey questionnaire.

Table 1 Divisions of Measurement of Study Variables

Variables	Areas of Measurement
Readiness of AI Adoption	• Data, infrastructure and systems readiness • Human capacity and culture for AI adoption • Institutional, legal and governance readiness
Barriers to AI Adoption	• Perceived barriers to adopting AI in HRM • Perceived benefits of AI in HRM
Implementation of AI	• Preferences for implementation strategies

To find the validity and reliability of the questionnaire, the study conducted Cronbach's alpha. 20 responses were collected initially as a pilot test. Cronbach's alpha is calculated for each area of measurement of each variable mentioned in Table 1. For data, infrastructure and systems readiness, the Cronbach's alpha is 0.888 for four items. For human capacity and culture for AI adoption, the Cronbach's alpha is 0.892 for three items. For institutional, legal and governance readiness, the Cronbach's alpha is 0.902 for three items. For perceived barriers to adopting AI in HRM, the Cronbach's alpha is 0.871 for three items. For the perceived benefits of AI in HRM, the Cronbach's alpha is 0.942 for three items. For preferences for implementation strategies, Cronbach's alpha is 0.981 for six items.

Table 2 Reliability Statistics

Areas of Measurement	Cronbach's Alpha
Data, infrastructure and systems readiness	0.888
Human capacity and culture for AI adoption	0.892
Institutional, legal and governance readiness	0.902
Perceived barriers to adopting AI in HRM	0.871
Perceived benefits of AI in HRM	0.942
Preferences for implementation strategies	0.981

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➢ *Data Analysis*

Descriptive and inferential statistics are used to analyze the data in a survey. The composite readiness scores are computed in three dimensions, including data and infrastructure, human capacity, and institutional governance. The barrier profiles are categorized in terms of severity, and the implementation preferences are evaluated to present the priorities of the organization. Differences in readiness and barriers are tested by using correlation and regression analysis to help determine differences between organizational types and size. The findings give a generalized, comparative outlook of the situation of AI adoption in public HRM.

Demographic information is presented to understand the variety of respondents from ministries, agencies under the ministries, municipal offices, local government offices, and autonomous government bodies in this study. The size of the workforce, their budget, and the availability of HRIS systems are also inquired into and recorded. Readiness of AI adaptation, barriers to AI adoption, and implementation of AI in HRM are measured and analyzed through descriptive statistics (mean value). A correlation matrix is conducted to find the significant relationship, the direction of the relationship, and the strength of the relationship among readiness, barriers, and the implementation of AI adaptation. The regression analysis is developed by establishing a regression equation given below:

AI Implementation = B0 + B1 (AI Readiness) + B2 (Barriers)

The significant impact of AI Readiness and Barriers on AI Implementation, the rate of impact, and the strength of impact are measured through the regression analysis.

Table 3 Details of the Regression Variables

Variable	Nature of the Variable
AI Implementation	Dependent Variable
AI Readiness	Independent Variable
Barriers	Independent Variable

The hypothesis of the regression analysis is given below:

- Null Hypothesis: There is no significant impact of AI readiness and barriers on AI implementation.
- Alternative Hypothesis: There is a significant impact of AI readiness and barriers on AI implementation.

IV. RESULTS

➢ *Demographic Data Description and Analysis*

Table 4 Demographic Information

Type of Organization	Fre	Size of Workforce	Fre
Central ministry/secretariat	76	< 100 employees	17
Department/agency under a ministry	122	100–499 employees	40
Municipal/city corporation	53	500–2,499 employees	124
District/local government office	59	2,500–9,999 employees	62
Autonomous government body (e.g., university, board)	79	10,000+ employees	157
Other	11		

The demographic information of the respondents gives a wide and institutionally diverse representation of the public sector in Bangladesh, and this enhances the representativeness of the study. The largest participation was by the departments working under the ministries (122) and the autonomous governmental agencies, which included the universities and statutory boards (79) and central ministries or secretariats (76). The municipal or city corporations (53) and district or local government offices (59) also had sufficient representation since the analysis was able to capture the variation observed among the central, semi-autonomous, and local government levels.

Table 5 HR Digitalization Budget and Availability of HRIS

Annual ICT/HR digitalization budget (approximate; BDT)	Fre	Availability of electronic HR information system (HRIS)	Fre
None / ad hoc only	22	No HRIS at all	17
< 500,000	18	HRIS partially used (some modules only)	61
500,000–2,999,999	69	HRIS used for basic functions (payroll, leave) only	89
3,000,000–9,999,999	98	HRIS integrated across most HR functions	186
10,000,000+	193	Fully integrated HRIS with analytics/dashboard	47

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The digital readiness has significant differences in budgetary data. Although a significant proportion of organizations have reported comparatively high annual ICT/HR digitalization budgets of BDT 10 million and above (193), a significant subdivision still functions with minimal or ad hoc budgets (22) or less than BDT 500,000 (18). The non-homogeneous financial ability directly affects long-term AI implementation and maintenance of systems.

Table 6 Primary Implementer of HR Technology and Role of the Respondents in this Study

Primary implementer of HR technology	Fre	Role of the respondents in this study	Fre
In-house IT team	111	HR manager/director	31
Central ICT wing / national IT agency	110	IT manager/director	52
External vendor / contractor	84	Administrative director	140
Public-private partnership	20	Mid-level HR/IT officer	87
Mixed (in-house + vendors)	75	Policy/strategy official	53

In terms of technological maturity, the majority of the organizations have indicated some degree of use of HRIS. The most typical situation was integrated HRIS across the majority of HR functions (186), although the presence of fully integrated systems with analytics and dashboards (47) remains a minor proportion, suggesting the lack of readiness for more advanced applications based on AI. The distribution of implementation is nearly balanced between in-house IT departments and central ICT agencies, with significant dependence on external suppliers and hybrid models. The majority of the designations of respondents consisted of administrative directors and middle-level HR/IT officers, which implies that data might be predominantly operational and managerial, specifically the direct participants of HR digital transformation.

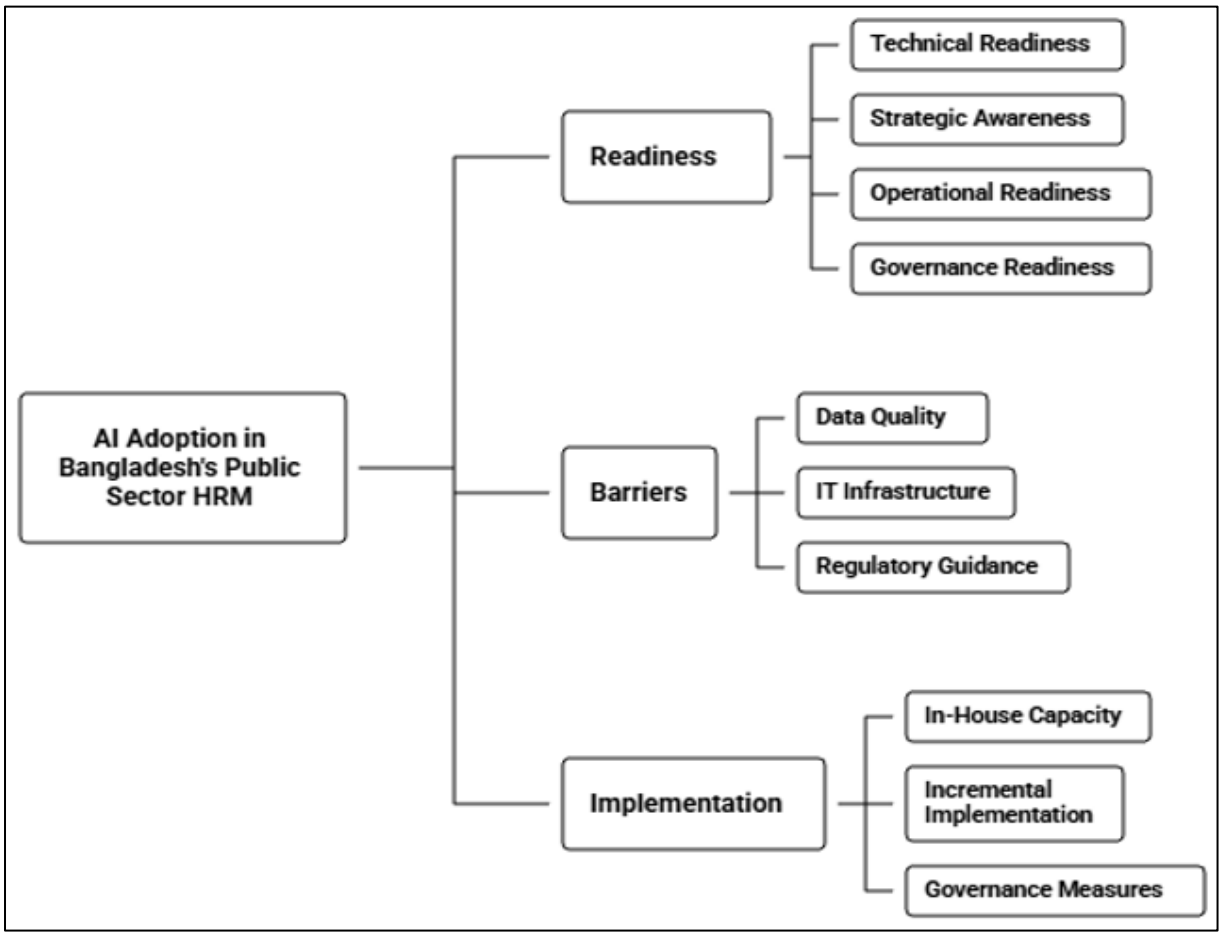


Fig 2 AI Adoption in Bangladesh's Public Sector HRM

➢ *Readiness of AI Adaption*

- *Data, Infrastructure and Systems Readiness*

The survey findings give a subtle image of the AI adoption preparedness of Bangladesh concerning the public-sector HRM system in technical, human, and governance aspects of AI adoption. In the data, infrastructure, and systems readiness category, the respondents indicated a comparatively high level of confidence in the presence of centralized and analyzable databases of employees (mean = 3.955), indicating that the underlying HR data systems have been to a large extent deployed. At the same time, they

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expressed that HR departments are becoming more digitalized with fewer paper-based records (3.56). Nevertheless, the reduced average scores in the data quality (3.465) and IT infrastructure adequacy (3.315) suggest that there are still some doubts about the accuracy of the data, its completeness, and the ability of the current systems to withstand the advanced AI applications without additional investment.

Table 7 Measurements of Data, Infrastructure and Systems Readiness

Centralized, well-documented employee database	Digitized with minimal paper-based records	HR data is of sufficient quality for analytics	IT infrastructure can support AI applications
3.955	3.56	3.465	3.315

- *Human Capacity and Culture for AI Adoption*

Regarding the strategic level of awareness, senior leadership exhibits a relatively high level of understanding of the potential and limitations of AI in HRM (3.815). Operation readiness, on the contrary, is lower as the level of HR staff working with analytic results is 3.0575, whereas the level of IT staff working with data science or machine learning is significantly lower (2.605). Such a gap indicates a major shortage of skills that can limit the practical implementation of AI.

Table 8 Measurements of Human Capacity and Culture for AI Adoption

Understanding of senior leadership of uses and limits of AI in HRM	HR staff have basic digital literacy	IT staff have experience with data science, machine learning, or AI projects
3.815	3.0575	2.605

- *Institutional, Legal and Governance Readiness*

The mixed preparedness is indicated in the institutional, legal, and governance readiness dimension. Although the rules on procurement seem to be quite permissive on using AI vendors (3.925), the legal frameworks on the use of algorithms in decisions are not clear enough (2.8225). The least worrying is that there is a low level of ethics or oversight mechanisms (2.405), which highlights the vulnerability of governance that might jeopardize responsible and trustworthy AI implementation in the HRM of the public sector.

Table 9 Measurements of Institutional, Legal and Governance Readiness

Procurement rules permit engaging AI vendors and data services	Availability of a local or national legal framework that clarifies use of algorithmic decision-making	Availability of an ethics or oversight committee that can review AI-based HR tools
3.925	2.8225	2.405

➢ *Barriers to AI Adoption*

- *Perceived Barriers to Adopting AI in HRM*

The results of the barriers to the use of AI in the HRM of the public sector suggest that the respondents view structural and regulatory barriers as extremely important. The mean score of fragmented and low-quality HR data was very low (1.635), which indicates the opinion that data-related problems are considered an essential obstacle to the implementation of AI. Equally, an insufficient IT infrastructure, such as the shortage of server, network, and cloud capacity (1.655), is also a significant barrier, expressing worries about the technical underpinnings needed to make AI systems functional. These difficulties are compounded by the fact that there is no obvious legal and regulatory guidance regarding automated or algorithmic decision-making in the public sector (1.6725), a factor that institutional uncertainty and risk aversion are likely major discouraging factors for the adoption.

Table 10 Measurements of Perceived Barriers to Adopting AI in HRM

Fragmented and low-quality HR data	Insufficient IT infrastructure	Absence of legal/regulatory clarity on automated decision-making
1.635	1.655	1.6725

- *Perceived Benefits of AI in HRM*

In comparison, the perception of the advantages of AI in HRM is dominated by positive perceptions. There is a huge consensus among respondents that AI will help to shorten recruitment and selection processes significantly (4.13), which proves the trust in the ability of AI to shorten them. It is also widely believed that AI may be used to enhance more specialized and individual training because it helps detect the shortcomings in skills and the learning requirements (4.065). It is worth noting that the mean score is the greatest in terms of transparency and staff morale (4.2075), which implies that AI is not seen as a tool of productivity alone but also as an instrument of enhancing fairness and trust in HR practices. These findings combined indicate a paradox, namely, the high levels of optimism about the worth of AI are offset by the existing, extensive, and ingrained data, infrastructure, and regulatory obstacles that restrict its application to practical HRM in the public sector in Bangladesh.

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Table 11 Measurements of Perceived Benefits of AI in HRM

AI could significantly shorten recruitment and selection timelines	AI could help identify training needs and personalize learning paths	AI adoption would increase staff morale by making HR processes more transparent
4.13	4.065	4.2075

➢ *Implementation of AI on HRM*

The implementation preferences resulting from the implementation of AI in the HRM of the public sector indicate that implementation strategies preferred by the respondents are conservative and capacity-building-based instead of large-scale and fast implementation. The most rated strategy is the idea of investing in the in-house data science capacity in both HR and IT (3.8375), which means that the idea of sustainable AI implementation relies on in-house expertise as opposed to the over-reliance on an external vendor. This need is based on the interest in contextual knowledge, sustainability, and learning in the institutions.

Incremental implementation is also of great use to the respondents. The beginning with small but distinct pilots of AI in non-sensitive HR capabilities, including workforce planning or training needs analysis, got a rather high mean score (3.655). By doing this, organizations are able to experiment, learn, and optimize systems with low ethical and political risks. Intimately related to this is the focus on training the HR on data literacy and understanding of AI (3.635), which accentuates the role of human capability in converting the output of algorithms into decision-making processes that can be considered valuable to the company.

The moderately high level of support was among governance-oriented strategies. The establishment of trust-building measures, such as the implementation of strong data protection and employee consent (3.595) is considered a prerequisite to this, whereas the establishment of formal AI governance frameworks (3.47) and legal and regulatory guidance on the national level (3.435) are viewed as the necessary enabling factors. On the whole, the findings can be summarized as a balanced implementation vision that incorporates technical investment, skills development, incremental experimentation, and good governance to ensure responsible and efficient adoption of AI in the context of Bangladesh HRM in the public sector.

Table 12 Measurements of Preferences for Implementation Strategies

Invest in in-house data science capacity in HR and IT teams	Start with small, well-defined pilots for non-sensitive HR functions	Develop a formal AI governance framework	Create legal/regulatory guidance for automated HR decision-making at national level	Implement strong data protection protocols and employee consent processes	Create training programs for HR staff on data literacy and AI interpretation
3.8375	3.655	3.47	3.435	3.595	3.635

➢ *Operational Decisions and Priorities in Utilizing AI in HRM*

The results of operational decisions and priorities are valuable to understand how the organizations of the public sector in Bangladesh view the practical application of AI in HRM and the logic of governance related to it. When it comes to the priority areas of AI pilots, workforce planning and forecasting had the most significant amount of interested respondents (133), followed by performance appraisal analytics (113). This bias indicates that organizations consider AI as a strategic resource that will be used to help human resource planning in the medium and long-term instead of as an administrative instrument with a limited scope. These functions are considered to be data-intensive, but comparatively less sensitive than employee-facing decisions, which makes these functions an appropriate at which AI can be experimented. By contrast, the processes of recruiting and screening candidates were given relatively low priority (31), which probably reflects the fear of favoritism, discrimination, and lawsuits. Equally, there was no significant interest in leave and attendance anomaly detection (2), meaning that these operational functions are either well-controlled with the help of the existing systems or are not worth AI investment.

Regarding the decision-making on the actions recommended by AI in HR, the prevailing choice is to have the line management involved. The final decision-makers were most often mentioned as department heads or supervisors (191) and then as HR heads or directors (126). This means that there is a high propensity to human-in-the-loop governance, in which AI becomes a decision-assistance aid and is not an independent agent. The comparatively small popularity of joint HR-IT committees (64) and ethics or oversight committees (19) can be interpreted to mean that, currently, AI remains a management tool rather than a formal governance or ethical concern. It is noteworthy that the lack of staff representatives or unions as decision-makers can indicate a deficiency in participatory government and employee voice in the AI-based HR decision-making.

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Table 13 Top Priority HR Area for AI Pilot, Final Decision Authority, and Preferred Procurement Approach

Top priority HR area for AI pilot	Fre	Final decision authority over AI-recommended HR actions		Preferred procurement approach for AI systems	Fre
Recruitment and candidate screening	31	HR head / director	126	Buy off-the-shelf product	16
Performance appraisal analytics	113	Department head / supervisor	191	Custom development by external vendor	127
Workforce planning and forecasting	133	Joint HR-IT committee	64	Hybrid (configure existing product + custom modules)	132
Learning and development personalization	60	Ethics/oversight committee	19	In-house build by IT team	104
Leave and attendance anomaly detection	2	Staff representative / union	0	Acquire open-source tools and adapt	21
Succession planning	56	Other	0		
Other	5				

In terms of procurement strategies, it is evident that the flexible and adaptive models are popular in organizations. The most supported were hybrid methods, combining the existing AI products with newly developed modules, with 132, then came the custom development by external vendors (127), and lastly the in-house development by the IT teams (104). This trend is an indication of a practical acknowledgment that off-the-shelf solutions (16) might not be mirrored in the regulatory, linguistic, and procedural specifics of public-sector HRM in Bangladesh. There is also limited interest in open-source adaptation (21), which implies concerns about capacity and maintenance.

On the whole, these findings indicate a conservative, but tactical approach as governmental organizations are ready to pilot AI in analytically useful, but less controversial HR spheres, not to lose human managerial control over decisions, and to use more balanced procurement models. This logic of operation emphasizes gradual, risk-sensitive innovation towards AI-based HR change as opposed to fast automation.

- *Correlation Among AI Readiness, Barriers, and Implementation*

Table 14 Correlation Matrix

		Barriers	Implementation
Readiness	Pearson Correlation	.190	.340
	Sig. Value	.000	.000
	N	400	400
Barriers	Pearson Correlation		.360
	Sig. Value		.000
	N		400

AI readiness and barriers have a weak but significant positive correlation ($r = 0.190$, $p = 0.000$). This observation indicates that the barriers are also reported more clearly in organizations that have higher levels of AI readiness. Instead of signifying contradiction, this shows organizational awareness as more digitally mature institutions are in a better position to identify quality differences in data, limitations in infrastructure, and regulatory failures. Conversely, the less prepared organizations can underrate or be ignorant of such barriers. The low strength means that being prepared does not automatically eradicate the barriers, which supports the point that most of the barriers are of an institutional and governance nature, and not technical ones. AI implementation and AI readiness have a moderate and positive relationship ($r = 0.340$, $p = 0.000$). This shows that greater readiness within data systems, human capacity, and governance is significantly linked with greater implementation efforts and more noticeable implementation strategies. The medium level indicates that readiness is a significant enabling factor, but not the only one, to AI implementation. Complementary factors are other contextual factors that include leadership priorities, flexibility of procurement, and political support. Lastly, the highest correlation is between barriers and AI implementation ($r = 0.360$, $p = 0.000$), which is also moderate and positive. This means that the perceived barriers are greater, the more are the concerns of the implementation and strategic responses. This trend suggests that risk and constraint awareness in the public sector has distinctly influenced the planning of implementation, such that organizations are more inclined to support the cautious, incremental, and governance-intensive implementation models than an aggressive automation strategy.

Therefore, the findings indicate a logical and policy-indicative dynamics as AI adoption in HRM of the Bangladesh government is not predetermined by the readiness, but a collective acknowledgement of preparedness and limitations. The average associations highlight the importance of combined measures that would both improve preparedness and strategically combat all obstacles in order to make the adoption of AI responsibility-based.

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➢ *Impact of AI Readiness and Barriers on AI Implementation*

Table 15 ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.221	2	16.610	51.658	.000
Residual	127.655	397	.322		
Total	160.876	399			

The outcomes of the linear regression indicate the existence of a statistically significant overall effect of AI Readiness and Barriers on the AI Implementation at the 95% confidence level. As shown in the result of the ANOVA table, the regression model is very significant ($F = 51.658$, $p < 0.000$), which proves that AI readiness and barriers can explain a significant percentage of the changes in AI implementation practices among the governmental organizations together.

At an individual level, both predictors have large positive impacts on AI implementation. The significance of AI Readiness is highly positive ($B = 0.258$, $t = 6.195$, $p < 0.000$), which means that the enhancement of data infrastructure, human capacity, and governance readiness brings more organized and stronger AI implementation efforts. The positive impact on AI Adoption is also significant ($B = 0.299$, $t = 6.733$, $p = 0.000$), so the increased awareness of barriers will encourage more deliberate, governance-oriented, and wary approaches to carry out instead of stopping them.

Table 16 Coefficient Table

Model	Unstandardized B	t	Sig.
(Constant)	1.896	11.098	.000
Readiness	.258	6.195	.000
Barriers	.299	6.733	.000

The estimated linear regression equation is:

AI Implementation = 1.896 + 0.258 (AI Readiness) + 0.299 (Barriers)

In general, the results suggest that the implementation of AI in the HRM of the Bangladesh government is conditioned by a two-fold dynamic, as the greater the preparedness, the greater is the possibility to take action, and the greater the awareness of the risks, the more the organization implements on the basis of risk-favoring strategies. This highlights the importance of having policies that will both enhance capacity and address institutional limitations.

Hence, we can validate the hypothesis of this study. The null hypothesis (overall and partial) is rejected as the calculated significance value is less than 0.05 (considering 95% confidence level). Therefore, there is a significant impact of AI readiness and barriers on AI implementation in Bangladesh's human resource management in the public sector.

V. DISCUSSION

According to the observed results of the research, the responsible introduction and implementation of AI mechanisms in HRM in the government sector of Bangladesh is suggested in a process of execution in different stages, through governance, and with a focus on capacity. The findings are clear that although institutional interest and perceived value of AI are strong, structural, human, and regulatory gaps remain to restrict successful adoption.

This study significantly fills gaps in existing research that highlights the important challenges in using AI for Human Resource Management (HRM) in the public sector of Bangladesh. The existing research has been limited by a shortage of empirical evidence on organizational readiness for AI adoption in government institutions, frequently leaving the discussion at a conceptual level or in the private sector. This research addresses this gap by offering direct evidence about the current state of readiness in public organizations, identifying the level of institutional interest as well as important infrastructure, skill, and governance gaps. Limited knowledge of the specific impediments to AI use in public sector HRM was another barrier found in the literature. Although some earlier works highlighted the problems like resistance to change, privacy concerns of data, lack of technical knowledge, financial constraints, etc., none of them explicitly explored the problems in the administrative and policy context in Bangladesh. To this end, the results of this study fill the gap by highlighting fragmented data systems, data quality issues, a lack of AI skills for HR professionals, uncertainty regarding regulations, and organizational resistance as substantial barriers that need to be addressed immediately.

One more key area identified as needing improvement was the lack of context-specific implementation strategies for the adoption of AI in public HRM. Most of the literature produced was generic and did not take into account the bureaucratic, legal, and institutional challenges in Bangladesh. This study offers a contribution by outlining a phased implementation strategy with an emphasis on low-risk applications like workforce planning and performance analysis, capacity development, testing, and scaling up step by step. This is a practical guide, specific to the public sector.

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In addition, previous research focused on ethical issues such as algorithmic bias, transparency, accountability and the risk of algorithmic decision-making replacing human judgment, while limited attention was given to mechanisms for governance. This research fills that gap by proposing national-level AI governance frameworks, accountability structures for organizations, and the need for human oversight in AI-informed decision-making processes. By shifting the focus beyond theory-based analyses to empirical policy-relevant contributions regarding readiness, barriers, governance needs, and pathways, the study advances the literature. By this, it provides an all-in-one guideline for the responsible utilization of AI in Public Sector HRM in Bangladesh and is part of achieving the vision of Smart Bangladesh 2041.

- *Theoretical Contributions*

This study significantly enriches the theoretical understanding of the aspects of the Technology–Organization–Environment (TOE) Framework, Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) Theory, and Institutional Theory in the context of AI-based Human Resource Management (HRM) in a developing country public sector. Through the lens of the TOE Framework, the results indicate that factors beyond technological readiness, such as organizational and environmental factors, also affect the uptake of AI in public-sector HRM. A series of longitudinal field studies shows that data fragmentation, weak digital infrastructure, a lack of technical expertise in AI, and a lack of regulation collectively contribute to organizational readiness. This is because it demonstrates that, in public institutions, the environmental and governance aspects can have a greater impact on the decision to adopt in the informational and institutional structures found in developing countries than the availability of a new technology.

Moreover, the study provides valuable insights into the perception of AI by government officials that will help develop the Technology Acceptance Model (TAM). The results indicated that the rather traditional TAM constructs of perceived usefulness and perceived ease of use are crucial, but in a Public-Sector environment, trust and accountability, and the ethical aspects are equally crucial. The results suggest that diffusion and adoption of AI are expected to happen more slowly and selectively based on the Diffusion of Innovation (DOI) Theory. Last but not least, the study extends Institutional Theory by showing that such factors as legal, administrative, accountability, and governance pressures strongly affect the adoption of AI in the public sector. The results show that implementation is possible only if institutional legitimacy and regulatory certainty are established. To this end, the study highlights that the process of AI implementation within public institutions goes beyond merely adopting new technology; it is also a process for institutional transformation, so as to reflect the governance structures and the public sector's values. As a whole, the contributions encase a more comprehensive understanding of the experience of adopting AI for HRM in the developing country public sector and provide a starting point for further theory building on digital governance and public sector innovative practices.

VI. RECOMMENDATION

System integration and data governance need to be considered as the main pillars in the implementation of AI. The availability of centralized HRIS in most organizations did not mean that fragmented and low-quality HR data would not be a serious issue. The government ought to work on the interoperable HR data structures among ministries and governmental organizations with the help of standard data definitions, frequent data audit, and data ownership procedures. The absence of sound and quality data means that AI applications are likely to generate prejudiced or inaccurate results that may undermine credibility and fairness in the overall HR decision-making.

Specific human capacity development is needed to excel in the adaptation process. The research demonstrates a serious skills deficiency, especially with IT employees in data science and AI, and HR professionals in the interpretation of the results of analytics. Training programs should be initiated on a national level with special emphasis on data literacy to government HR officers, applied AI skills to the training of IT staff, and awareness of AI governance to top public administrators. Instead of generic training, role-specific and practice-oriented training, which is already built into civil service training institutions, will assist in imparting AI competence into the existing administrative units. Early adoption should be done through incremental and low-risk implementation strategies. The respondents were overwhelmingly in support of using AI to pilot workforce planning, forecasting, and performance analytics rather than high-stakes functions like recruitment. Such a strategy must be institutionalized in terms of clear pilot frameworks, which stipulate scope, evaluation criteria, and exit strategies. The effective pilot projects can then be scaled up over time, and the organizations can learn, adapt, and perfect the governance mechanisms and then be deployed on a larger basis.

An effective legal and ethical governance structure should be established alongside technical adoption. Lack of a clear regulatory structure and ethical control became one of the key weaknesses. An algorithmic decision-making framework at the national level in the public sector ought to define accountability, transparency, explainability, and the appeal mechanisms. On the organizational level, special AI responsibility entities, associated with the current administrative accountability mechanisms, should be created to assess AI applications, particularly in areas dealing with promotion, appraisal, and workforce distribution. The decision-making involving humans should be a priority in AI systems in the public sector. The fact that department heads and HR directors are chosen as the ultimate decision-makers shows the value of management judgment and situational knowledge. The role of AI as a decision-support, not a decision-maker, must be officially established, and the way algorithmic recommendations are utilized or disregarded must be documented. This strategy will assist in protecting fairness, legitimacy, and trust of people.

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Vendor lock-in should not be encouraged by procurement policies, but rather flexibility, learning, a hybrid procurement model, and controlled in-house development. The development of common platforms whereby the central authority coordinately shares AI tools and encourages the collaborative efforts of public institutions should be promoted to reduce duplication and cost.

VII. CONCLUSION

The study aims to investigate the readiness, barriers, and opportunities for implementing artificial intelligence (AI) in human resource management (HRM) in the public sector in Bangladesh. The main goals are to gauge the readiness of government institutions for AI use, to highlight technical, organizational, and institutional challenges to AI implementation, and to examine potential strategies for successfully integrating AI-enabled HRM systems. Furthermore, the study is designed to identify the correlation between AI readiness, perceived barriers, and AI implementation outcomes, providing evidence-based policy and managerial recommendations for the public sector of Bangladesh.

The research method used to pursue these goals is quantitative, cross-sectional research using structured survey data collected from 400 government officials, including HR managers, IT professionals, and senior administrative staff from various public organizations. The stratified purposive sampling method is used to have representation of the different types of institutions. The data are analyzed using descriptive statistics, correlation analysis, and multiple regression analysis for the measurement of relationships among variables and to test the research hypotheses. A set of composite indices is created to evaluate the AI readiness and barriers in terms of technical, organizational, and governance aspects. The regression model is used to analyze the effects of readiness and barriers on AI implementation, giving empirical insights into factors that influence the adoption of AI in HRM in public organizations.

The paper shows that the implementation of AI in the HRM of Bangladesh's public sector is not an entirely technical issue or policy desire, but rather a transformation process based on governance. Although basic digital frameworks and leadership consciousness are present, there are still fatal flaws in terms of data quality, AI competencies, and ethical control. The findings indicate that the greater preparedness, the more easily implemented, and awareness of barriers will promote the watchful systematic adaptation. Risk sensitivity and accountability issues associated with incremental pilots, human-in-the-loop decision-making, and hybrid procurement models to the preference of public organizations. In order to make AI integration responsible and sustainable, close collaboration in the areas of skills development, data governance, and legal clarity is necessary to transform the national AI objectives into practice.

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