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Folorunsho Adeola and Heston Richard [*]

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* Correspondence: hestonrichard636@gmail.com

Abstract: The adoption and implementation of Human Resource Information Systems (HRIS) in Small and Medium Enterprises (SMEs) have gained increasing importance in developing economies like Bangladesh, where SMEs constitute a major share of the economic landscape. This study explores the critical barriers and enabling factors influencing HRIS adoption within Bangladeshi SMEs. Drawing on both primary and secondary data, the research identifies key obstacles such as limited financial resources, lack of technical expertise, resistance to change, and inadequate infrastructural support. Conversely, it also highlights enablers including management support, government initiatives, increasing digital literacy, and the perceived strategic value of HRIS in enhancing organizational efficiency. The findings reveal a nuanced landscape where the success of HRIS adoption is contingent upon the interplay of internal readiness and external support mechanisms.

Keywords: HRIS (Human Resource Information System); adoption barriers; implementation enablers; Bangladesh business environment

I. Introduction

In the contemporary business environment, the strategic management of human resources has emerged as a critical success factor for organizational growth and competitiveness. Human Resource Information Systems (HRIS), which integrate human resource functions with information technology, have revolutionized the way organizations manage HR activities such as recruitment, payroll, performance evaluation, and employee data management. While large corporations have rapidly adopted HRIS to enhance efficiency and decision-making, Small and Medium Enterprises (SMEs), particularly in developing countries like Bangladesh, continue to face significant challenges in embracing this digital transformation. Bangladesh's SME sector, contributing substantially to employment generation and GDP growth, is increasingly under pressure to modernize its operations, including HR functions. However, limited financial capacity, infrastructural constraints, and a lack of awareness often hinder the successful adoption and implementation of HRIS in these enterprises. At the same time, rising digitalization trends, supportive government policies, and the growing recognition of HRIS's strategic value are enabling factors that encourage adoption among forward-looking SMEs.

This study aims to investigate the barriers that prevent and the enablers that support the adoption of HRIS in the SME sector of Bangladesh. By identifying these factors, the research seeks to offer practical insights and policy recommendations that can bridge the digital divide in HR management and foster a more competitive SME ecosystem in Bangladesh.

II. Literature Review

Overview of HRIS

Human Resource Information Systems (HRIS) refer to integrated systems used to gather, store, and analyze information related to an organization's human resources. According to Kavanagh et al. (2012), HRIS combines HR functions with information technology to streamline operations such as employee records management, payroll processing, recruitment, training, and performance

evaluations. These systems can range from basic databases to advanced enterprise solutions that support strategic HR decision-making.

Definition and Functions

HRIS is broadly defined as a computerized system designed to manage human resource data and processes (Tansley et al., 2001). Core functions include data entry and retrieval, employee self-service, reporting and analytics, benefits administration, and compliance management. Modern HRIS platforms may also integrate talent management, succession planning, and HR analytics, transforming HR from a clerical role into a strategic business partner.

Benefits of HRIS in Human Resource Management

HRIS enhances organizational efficiency by automating routine tasks, reducing paperwork, and improving the accuracy and accessibility of employee information. It supports data-driven decision-making, enhances compliance with labor laws, and fosters better communication between HR and other departments. In SMEs, these benefits translate into improved productivity, cost savings, and more effective workforce management, which are crucial for their growth and sustainability (Ngai & Wat, 2006).

HRIS Adoption in SMEs

Globally, SMEs have shown growing interest in adopting HRIS, although at a slower pace compared to large enterprises. Studies indicate that SME adoption is influenced by factors such as perceived usefulness, ease of use, top management support, and external pressures (Thong, 1999). While HRIS can significantly improve operational efficiency in SMEs, adoption rates vary widely due to contextual differences.

Global Trends and Practices

In developed countries, cloud-based and Software-as-a-Service (SaaS) HRIS solutions are becoming the norm, allowing SMEs to access sophisticated HR tools without heavy capital investment. In contrast, SMEs in developing countries often struggle with implementation due to infrastructural, financial, and human resource limitations. Nonetheless, a global trend toward digital transformation and workforce optimization is pushing even resource-constrained SMEs to explore HRIS adoption.

Specific Challenges and Opportunities in Developing Economies

In developing economies, the adoption of HRIS is constrained by limited access to reliable internet, high implementation costs, and lack of skilled personnel. However, these economies also present unique opportunities, such as a growing tech-savvy workforce, increasing government support for digitalization, and the availability of affordable cloud-based solutions. Studies emphasize that targeted policy support and training can significantly enhance the uptake of HRIS in these contexts (Gichuki et al., 2019).

Theoretical Framework

The adoption of HRIS can be examined through the Technology Acceptance Model (TAM) and the Diffusion of Innovation (DOI) Theory. TAM posits that perceived usefulness and perceived ease of use determine an individual's intention to use a new technology (Davis, 1989). DOI Theory, proposed by Rogers (2003), explains how innovation spreads through specific adopter categories and social systems. Both frameworks are useful in understanding the behavioral, organizational, and external factors influencing HRIS adoption in SMEs.

Context of Bangladeshi SMEs
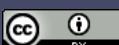
SMEs in Bangladesh are characterized by their informal structures, limited access to finance, and dependence on manual processes. Although the government has initiated several programs to promote ICT adoption among SMEs, a significant digital gap remains. Many SMEs lack the technological readiness to implement advanced systems like HRIS, due to both infrastructure deficits and resistance to change. However, increased mobile and internet penetration, coupled with a young workforce, presents a fertile ground for gradual adoption.

III. Research Methodology

This study adopts a methodological framework designed to explore the barriers and enablers influencing the adoption and implementation of Human Resource Information Systems (HRIS) in SMEs across Bangladesh. The approach ensures the collection of both breadth and depth of data, relevant to the complexity of technological adoption in a resource-constrained context.

Research Design

A mixed-methods approach was employed, combining both quantitative and qualitative techniques. The quantitative component involved structured surveys to capture broad trends and correlations, while the qualitative component comprising interviews and case studies provided deeper insights into the experiences, perceptions, and contextual nuances of HRIS implementation among SME stakeholders.

Data Collection Methods

Surveys were distributed to a wide range of SME personnel, including HR managers, owners, and IT staff, to gather measurable data on the extent of HRIS adoption, perceived challenges, and benefits.

Semi-structured interviews were conducted with selected participants to understand individual and organizational perspectives, as well as contextual barriers such as cultural resistance and technological literacy.

Case studies of a few SMEs that have successfully adopted HRIS were developed to highlight best practices, implementation processes, and enabling conditions.

Sampling Technique

The study employed purposive sampling to identify SMEs from key sectors such as manufacturing, services, and retail within urban centers like Dhaka, Chittagong, and Sylhet. The target population included SME owners, HR managers, and IT personnel, who were either involved in or knowledgeable about their organization's HR and IT functions. A sample size of approximately 150 respondents for surveys and 12 for interviews was considered adequate for analytical rigor and representativeness.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistics, including frequencies, cross-tabulations, and regression analysis to identify significant relationships between adoption factors and organizational characteristics. Qualitative data from interviews and case studies were subjected to thematic analysis, using coding and categorization to identify recurring patterns, perceptions, and themes related to HRIS adoption and use. NVivo software was used for qualitative data management and analysis.

This robust methodological design enhances the credibility and applicability of the findings, offering a comprehensive understanding of both the systemic and

IV. Barriers to HRIS Adoption and Implementation in SMEs

Despite the recognized benefits of Human Resource Information Systems (HRIS), many Small and Medium Enterprises (SMEs) in Bangladesh face significant challenges in adopting and implementing these systems. These barriers are both internal stemming from organizational limitations and external arising from environmental and policy-related constraints.

Financial Constraints

One of the most significant barriers is the high cost associated with HRIS acquisition, infrastructure development, and ongoing maintenance. Many SMEs operate on tight budgets and prioritize core operational expenses over technological investments. The costs of licensing software, upgrading hardware, and training employees can be prohibitive, especially for micro and small enterprises. Furthermore, the perceived risk of uncertain return on investment makes decision-makers hesitant to allocate funds for HRIS.

Lack of Technical Expertise

A widespread shortage of skilled IT personnel within SMEs also hinders HRIS implementation. Most SMEs do not have dedicated IT departments, and their existing staff often lack the specialized knowledge required to manage and operate an HRIS effectively. The absence of technical support leads to difficulties in system integration, customization, and troubleshooting, often resulting in system abandonment or underutilization.

Resistance to Change

Organizational culture and employee resistance pose another formidable challenge. Many SMEs are family-run or follow traditional management styles, where technological innovation is met with skepticism. Employees may perceive HRIS as a threat to job security or as a tool for increased monitoring, leading to reluctance in system adoption. Change management strategies are often absent, and there is limited effort in promoting user engagement and system ownership.

Limited Awareness

A lack of awareness about the strategic benefits of HRIS is common among SME owners and managers. Many perceive HRIS as a luxury suited only for large corporations and fail to recognize its potential to enhance productivity, streamline HR processes, and support decision-making. This gap in knowledge prevents SMEs from exploring even affordable, scalable HRIS options tailored to their needs.

Infrastructure Challenges

Unreliable internet connectivity and power supply, especially in semi-urban and rural areas, severely limit the feasibility of cloud-based or real-time HRIS solutions. SMEs located outside major cities often struggle with basic ICT infrastructure, which restricts their ability to deploy and maintain digital systems. These infrastructural issues also impact data security and system accessibility.

Policy and Regulatory Gaps

Finally, the absence of clear government policies and incentives for SME digital transformation presents a systemic barrier. While there are broad ICT policies in Bangladesh, few are specifically targeted at supporting HR technology adoption in the SME sector. The lack of subsidies, training programs, and regulatory frameworks for digital HR management makes it difficult for SMEs to take proactive steps toward HRIS adoption.

V. Enablers of HRIS Adoption and Implementation

While the adoption of Human Resource Information Systems (HRIS) in Bangladeshi SMEs is challenged by several barriers, various enablers have also emerged that support and facilitate implementation. These factors, when effectively leveraged, can significantly enhance the digital transformation of human resource management in small and medium enterprises.

Management Support

Leadership commitment and a clear strategic vision play a critical role in successful HRIS adoption. When SME owners and top managers understand the strategic value of HRIS, they are more likely to allocate resources and drive organizational change. Support from management not only ensures funding and prioritization but also helps foster a culture of innovation and adaptability among employees.

Availability of Affordable Technology

The growth of cloud-based, scalable HRIS solutions tailored to small businesses has made adoption more feasible for SMEs. These systems offer flexibility, lower upfront costs, and simplified maintenance compared to traditional on-premise software. Many vendors now provide subscription-based models or freemium services that allow SMEs to gradually scale their digital capabilities as they grow.

Training and Capacity Building

Access to training programs, vendor support, and peer-learning platforms enables SMEs to build internal capacity for HRIS implementation. Workshops, online tutorials, and consultancy services offered by technology providers and business support organizations equip employees with the skills needed to operate and maintain the system. Training also helps mitigate resistance to change by increasing user confidence and system familiarity.

External Support

Government initiatives, NGO programs, and industry associations can act as powerful catalysts for HRIS adoption. In Bangladesh, support mechanisms such as ICT training, digital infrastructure grants, and SME development programs can help reduce adoption costs and bridge knowledge gaps. Partnerships with chambers of commerce or HR professional networks also facilitate access to best practices and mentorship.

Demonstrated ROI

Proven return on investment (ROI) serves as a strong motivator for adoption. Case studies from peer SMEs that have successfully implemented HRIS and achieved measurable improvements such as reduced administrative costs, enhanced employee productivity, or better compliance build confidence among hesitant business owners. Sharing success stories through local networks and business forums can generate interest and reduce perceived risks.

Digitalization Push Post-COVID-19

The COVID-19 pandemic accelerated digital transformation across all sectors, forcing even traditional SMEs to reconsider their operating models. Remote work, digital attendance, and virtual onboarding created urgent demand for digital HR tools. This shift has increased awareness of HRIS as not just an efficiency tool but a necessity for business continuity and resilience in times of disruption.

VI. Discussion

This section interprets the findings by comparing them with existing literature and drawing out their practical significance. It also highlights limitations that should be considered when generalizing the results.

Comparative Analysis

The barriers and enablers identified in this study align closely with themes found in existing HRIS literature, particularly within the context of developing economies. Financial constraints, lack of technical expertise, and organizational resistance are recurrent obstacles noted in works by Ngai and Wat (2006) and Gichuki et al. (2019), underscoring their universal nature across SME contexts. Similarly, the importance of management support and external facilitation confirms the relevance of the Technology Acceptance Model (TAM) and the Diffusion of Innovation Theory, both of which emphasize the role of perceived usefulness and support systems in influencing adoption behavior.

However, this study contributes new perspectives by contextualizing these factors within the specific socio-economic and infrastructural realities of Bangladeshi SMEs. For instance, the impact of inconsistent internet connectivity and weak policy frameworks emerged as uniquely pronounced in the Bangladeshi setting. Moreover, the COVID-19 pandemic acted as a catalytic enabler, a factor not deeply explored in pre-pandemic literature but now increasingly significant.

Practical Implications

The findings of this study have direct implications for multiple stakeholders:

- **SME Owners and Managers:** Leadership must recognize HRIS as a strategic tool rather than an optional upgrade. Investing in affordable, scalable solutions and providing staff with basic training can significantly improve operational efficiency.

- **HR Professionals:** HR practitioners in SMEs should advocate for HRIS by demonstrating its benefits, participating in system design, and facilitating change management processes to ease employee adoption.

- **Policymakers and Support Agencies:** There is a clear need for targeted government support, such as subsidies, tax incentives, or training programs focused on HR technology for SMEs. Collaborations with NGOs and tech incubators can also extend reach and impact.

Limitations of the Study

This study is not without limitations. First, the sample size was limited and geographically concentrated in major urban areas, potentially overlooking rural SME experiences. Second, as a cross-sectional study, it captures perceptions at a single point in time and may not reflect long-term implementation outcomes. Finally, self-reported data, especially in surveys and interviews, can be influenced by social desirability bias or limited technical understanding among respondents.

VII. Conclusion

The adoption and implementation of Human Resource Information Systems (HRIS) in SMEs in Bangladesh presents a complex interplay of barriers and enablers shaped by financial, technical, organizational, and infrastructural factors. While constraints such as limited budgets, inadequate IT skills, and resistance to change continue to hinder progress, several enabling factors including management support, affordable cloud-based solutions, capacity-building initiatives, and post-pandemic digital momentum offer significant opportunities for HRIS integration. This study reinforces the relevance of established theoretical frameworks like the Technology Acceptance Model and the Diffusion of Innovation Theory in understanding HRIS adoption within the SME context.

Importantly, it contextualizes these models in the unique socioeconomic landscape of Bangladesh, offering insights that can inform both practice and policy.

For SMEs to fully benefit from HRIS, a concerted effort is required from business leaders, HR professionals, and policymakers. With appropriate support, strategic vision, and continuous investment in digital infrastructure and human capital, HRIS can become a vital tool for improving organizational performance and competitiveness in the evolving business landscape of Bangladesh.

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