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Integration of AI Agents in Recruitment: Opportunities and Challenges

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Abstract: This research examines the potential application of AI agents in recruitment processes in Bangladesh, especially in multinational companies. The aim is to streamline processes, such as saving recruiters' time, implementing paperless workflows, and conducting more rigorous evaluations of candidates to ensure optimal job-role alignments. There is already international research recognizing AI's utility in hiring processes, but its actual use and impact in Bangladesh remain largely unknown. The results are anticipated to have wide-ranging effects on Bangladesh's modernization of traditional hiring procedures, focusing on reducing time and effort, as well as addressing algorithmic and human biases. Additionally, the study supports long-term advancements in information management and decision-making by advocating for a sustainable, data-driven approach to hiring. Crucially, the study also seeks to educate applicants and recruiters about the dangers of biases and technical errors in AI systems. Ultimately, this study supports the responsible adoption of AI, backed by robust regulations, stakeholder collaboration, and capacity-building programs, which can help digitally transform the hiring landscape. This gap is being addressed through a mixed-methods approach that combines quantitative surveys with qualitative interviews of job seekers and human resources professionals. Data will be collected from multiple organizations through surveys, secondary sources, interviews, and relevant case studies. The Gibson Theory will serve as the analytical framework for evaluating user acceptance and engagement with the AI-based hiring system. Future studies should investigate the long-term feasibility of integrating AI agents and examine the new issues arising in Bangladesh and other developing nations.

Keywords: Artificial Intelligence (AI), AI-Agent, Recruitment, Challenges, Opportunities

I.INTRODUCTION

Recruitment is an integral part of any organization, which enables it to operate and survive with the merit of its personnel. Hence, recruitment is considered one of the most resource-intensive functions of a modern organization, involving multiple stakeholders at various levels, such as the Human Resource team, Functional Personnel, Managers, and sometimes external units. This time-consuming and complex process often leads to delays, inefficiency, and the waste of resources, while incurring significant financial costs. In recent times, a rigorous implementation of the recruitment process comes with a lengthy procedure, time & resource investments,

human error, and sometimes biases, especially in multinational companies.

On the other hand, AI, or Artificial Intelligence, is a disruptive technology in the modern era, making work comparatively easier and more time-efficient. It is said that AI helps reduce time-consuming activities through automation and streamlining of resume checks, more efficiently matches job requirements with candidates' existing skills, and enables faster and more effective decision-making [2]. Additionally, such changes require considerable effort on the part of recruiters, and to cope with these challenges, technological innovations such as artificial intelligence (AI) have started to be used in the recruitment process [4][7][8]. Backed by data, this technology has been in limited use in the recruitment industry. According to a 2017 survey from Statista.com of 8815 respondents, which included talent acquisition professionals and hiring managers, as many as 67% of the respondents say that artificial intelligence helps to reduce the time-consuming nature of the hiring process [3]. As a result, global corporations have made significant progress in utilizing AI for Talent Acquisition, as reflected in a report by Intelion Systems, which states that the use of AI in recruitment is growing, with 35% to 45% of companies already using tools for this purpose [2]. They also point out that as many as 99% of Fortune 500 companies are already using AI in some way in recruitment. However, Bangladesh is far behind in practically adopting these new norms, particularly in large companies. This research explores the unexplored area of AI agent usage in Bangladeshi Recruitment systems and considers a significant development in resource management, combating waste.

It is said that AI tools improve organizational efficiency and accuracy as well as reduce human subjectivity [8]. Moreover, AI integrates the traditional people-oriented approach with a greater emphasis on data and analytics[3]. This also evaluates the awareness and willingness of recruiters to adopt this technology, taking into account the risks, training period, AI-borne inaccuracies, and the ethical & responsible implementation. It was evident that 88% of organizations globally have experimented with AI in recruitment activities; among these, 41% employed AI-based chatbots for candidate engagement, 44% utilized AI for identifying candidates through social media and public data, and 43% leveraged AI for training recommendations [8]. Therefore, the primary focus is to evaluate the efficiency improvement of an AI agent

recruitment in terms of time, cost, human effort, and error in Bangladesh.

In general, AI agents are designed to reduce costs, human intervention & time while expediting the selection process, minimizing errors, coordinating with the operations team, and other relevant stakeholders. Although AI agents are becoming increasingly popular globally, empirical evidence remains undocumented and fragmented, particularly in developing countries, where infrastructure and technical challenges, as well as a limited understanding of cost-benefit implications, are prevalent. Moreover, studies on developing countries like Bangladesh are still restricted to date, shrinking the opportunities to explore further advancements and scopes.

II.OBJECTIVE

RQ 1: How will AI Agents create an impact in the traditional recruitment system in the context of Bangladesh in terms of cost, accessibility, technological infrastructure, time efficiency, and expectancies?

RQ 2: Will the implementation of AI agents create a significant change in resource management and the reduction of wastage of natural resources, resulting in an eco-friendly method?

III.METHODOLOGY

The research employs a mixed-methods design, aiming to capture both qualitative and quantitative insights. Data will be sourced from literature review, secondary information, and case studies, and surveys and interviews will be conducted with job-seekers and HR professionals from various industries to help identify the concrete aspects of future AI agents in the recruitment systems. The analysis will be guided by Gibson's Theory of Affordance, which reflects how users perceive and interact with new technologies, offering a valuable and insightful lens to the overall study on perceived readiness, along with the opportunities and barriers associated with the AI recruitment tools.

IV..KEY FINDINGS

Although contemporary study and data collection are currently underway, the anticipated findings suggest that AI Agents will significantly enhance the efficiency of the recruitment process and have the potential to optimize resource usage, resulting in a positive impact on paper usage, the environment, and sustainability. Moreover, this will help reduce human bias and error, provided that Bangladesh develops an appropriate technological infrastructure, user ease, awareness, and a functional regulatory framework. The results are expected to contribute to the modernization of the traditional hiring system, accelerate data-driven decision-making, improve internal coordination, and promote stakeholder education on the use of AI. Apart from that, it is also considered that this prospect may have barriers and

backtracks may emerge, including recruiters' concerns about job security, transparency, cost analysis, lack of readiness for transformation, adoption of new technologies, reliability, and discrepancies in AI-made decisions. Notable variations may be visible between global practices and local implementations, given the varying conditions of technological advancement, infrastructure, and economy.

The aforementioned study aims to highlight both theoretical and practical perceptions: Theoretically, it exemplifies Gibson's Affordance theory to the recruitment domain and related stakeholders; on the other hand, the sensible part proposes an AI Agent-enabled recruitment model considering the insights, ethical safeguards, and respective concerns ensuring fairness and adaptability.

V. DISCUSSION & IMPLICATION

This study examines and reflects on the significant implications of AI agents in Bangladesh, proposing a potential disruption to the recruitment process. Theoretically, it will follow Gibson's Theory of Affordance in recruitment policies by navigating their perceptiveness towards an AI agent-enabled ecosystem, as well as the opportunities or challenges that may emerge in its adoption. Considering the practical standpoint, the aforementioned findings indicate that AI agents can streamline the end-to-end recruitment process, optimizing human effort, time, cost, paper usage, and other tangible resources, as well as reducing errors. For companies in Bangladesh, where, however, the accessibility of AI agents still remains limited, this provides a unique scope of leveraging the AI tools with less human involvement and more algorithmic precision, which certainly ensures that efficiency does not hamper the fairness or transparency of the recruitment. That being said, policy implementation is equally critical with a view to regulatory bodies and HR practitioners, as they may be required to revise the policy frameworks for the company to adopt a new technology to ensure the ethical use of AI, data protection, and policy for malfunctioning; establishing trust among the hiring managers and job seekers. Furthermore, training components and infrastructure investments are also two crucial parts to consider for better integration. To conclude, this research highlights both the pitfalls and promises of AI agent integration in recruitment, contributing to a handful of resources for optimization and human resource management with modern technology. It will help with capacity development, policy framework, and revising infrastructural advancements over time, to adopt a sustainable AI-driven procedure in the long run.

REFERENCE

- [1] Koman, G., Kubina, M., & Borsos, P. (2024, July 19). *"The possibilities of using artificial intelligence as a key technology in*

- the current employee recruitment process.*" Administrative Sciences. Retrieved from: <<https://www.mdpi.com/2076-3387/14/7/157?>>
- [2] Mori, M., Sassetti, S., Cavaliere, V., & Bonti, M. (2025, April 7). "A systematic literature review on artificial intelligence in recruiting and selection: A matter of ethics." Emerald Insight. Retrieved from: <<https://www.emerald.com/insight/content/doi/10.1108/pr-03-2023-0257/full/html>>
- [3] Lashkari, M., & Cheng, J. (2023, January 27). "Fairness in AI-driven recruitment: Challenges, metrics, methods, and future directions." Cornell University. Retrieved from: <<https://arxiv.org/abs/2405.19699?>>
- [4] Rahman, M., Hossain, A., Miah, S., Alom, M., & Islam, M. (2025, January). "Artificial intelligence (AI) in revolutionizing sustainable recruitment: A framework for inclusivity and efficiency." International Research Journal of Multidisciplinary Scope. ResearchGate. Retrieved from: <https://www.researchgate.net/publication/388936696_Artificial_Intelligence_AI_in_Revolutionizing_Sustainable_Recruitment_A_Framework_for_Inclusivity_and_Efficiency>
- [5] Tambe, P., Cappelli, P., & Yakubovich, V. (n.d.). "Artificial intelligence in human resources management: Challenges and a path forward." California Management Review. Berkeley Haas; Sage Journals. Retrieved from: <<https://journals.sagepub.com/doi/10.1177/0008125619867910>>
- [6] Marabelli, M., Newell, S., & Handunge, V. (2021, September). "The lifecycle of algorithmic decision-making systems: Organizational choices and ethical challenges." The Journal of Strategic Information Systems. Retrieved from: <<https://www.sciencedirect.com/science/article/abs/pii/S0963868721000305>>
- [7] Colbak, L. (2025, May). "AI agents: From co-pilot to autopilot". Financial Times. Retrieved from: <<https://www.ft.com/content/3e862e23-6e2c-4670-a68c-e204379fe01f?>>
- [8] Akhter, F., Bhattacharjee, A., & Hasan, A. (2024, January). "Application of artificial intelligence in the human resource management: A Bangladesh perspective." Munich Personal RePEc Archive. Retrieved from: <https://mpra.ub.uni-muenchen.de/122222/1/MPRA_paper_122222.pdf>