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Analyzing the impact of artificial intelligence on the human resources recruitment process in businesses in Hanoi

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Abstract

Artificial intelligence (AI) has emerged as a transformative technology, revolutionizing various aspects of business operations, including human resources (HR) management. This study aims to analyze the impact of AI on the HR recruitment process in businesses located in Hanoi, Vietnam. Through a mixed-methods approach, involving surveys and in-depth interviews with HR professionals from 20 companies, the research examines the current level of AI adoption, its effects on recruitment efficiency and effectiveness, and the challenges encountered during implementation. The findings reveal that while AI adoption in HR recruitment is still in its early stages, businesses that have embraced AI-powered tools have experienced improved efficiency in candidate screening, enhanced job-candidate matching, and reduced time-to-hire. However, the study also uncovers significant challenges, including the need for specialized AI skills, concerns about job displacement, and the importance of striking a balance between automation and human touch in the recruitment process. The research offers valuable insights and recommendations for businesses in Hanoi aiming to harness the potential of AI in HR recruitment, emphasizing the need for strategic planning, workforce upskilling, and the development of ethical guidelines. The study contributes to the growing body of knowledge on AI applications in HR and provides a context-specific understanding of AI's impact on recruitment practices in Hanoi's business landscape.

Keywords: Artificial intelligence, HR recruitment, efficiency, effectiveness, adoption, Hanoi

1. Introduction

In recent years, the rapid advancements in artificial intelligence (AI) have transformed various domains, including human resources management (HRM). AI has shown immense potential in revolutionizing the recruitment process, offering benefits such as increased efficiency, improved decision-making, and enhanced candidate experiences (Upadhyay & Khandelwal, 2018) ^[12]. However, the adoption of AI in HRM is not without challenges, particularly in emerging economies like Vietnam, where businesses are still navigating the digital transformation landscape (Nguyen & Sidorova, 2018).

Hanoi, the capital city of Vietnam, has witnessed significant economic growth and a surge in business activities in recent years. As companies in Hanoi strive to attract and retain top talent, the use of AI in recruitment has gained attention. Nevertheless, there is limited research on the actual impact of AI on the recruitment process in this specific context. Given the cultural, social, and economic differences between developed and developing countries, it is crucial to examine how AI is shaping recruitment practices in Hanoi and the challenges businesses face in adopting these technologies.

This study aims to bridge the gap in the literature by analyzing the impact of AI on the HR recruitment process in businesses located in Hanoi. By exploring the current level of AI adoption, its effects on recruitment efficiency and effectiveness, and the challenges encountered during implementation, this research seeks to provide valuable insights for businesses in Hanoi looking to leverage AI in their HR practices.

The findings of this study will contribute to the growing body of knowledge on AI applications in HRM and offer practical recommendations for businesses operating in similar contexts.

The significance of this research lies in its potential to guide businesses in Hanoi in making informed decisions when integrating AI into their recruitment strategies. By understanding the benefits, challenges, and best practices associated with AI adoption, companies can develop targeted approaches to harness the power of AI while mitigating potential risks. Moreover, this study can serve as a foundation for future research on AI in HRM in the Vietnamese context, fostering a deeper understanding of the interplay between technology and people management in emerging economies.

2. Theoretical Background

2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), proposed by Davis (1989) ^[6], provides a theoretical foundation for understanding the adoption and acceptance of new technologies in various contexts, including human resources management. TAM posits that an individual's intention to use a technology is influenced by two key factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which a person believes that using a particular technology will enhance their job performance, while perceived ease of use relates to the degree to which a person believes that using the technology will be free of effort (Davis, 1989) ^[6]. In the context of AI adoption in HR recruitment, TAM can help explain the factors that influence HR professionals' decisions to embrace AI-powered tools and the potential barriers to adoption.

2.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh, Morris, Davis, and Davis (2003) ^[14], is an extension of TAM that incorporates additional factors influencing technology adoption. UTAUT identifies four key determinants of user acceptance and usage behavior: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy refers to the degree to which an individual believes that using a technology will help them attain gains in job performance. Effort expectancy is the extent to which a technology is perceived as easy to use. Social influence relates to the perception that important others believe an individual should use the technology. Facilitating conditions refer to the perceived availability of organizational and technical support for using the technology (Venkatesh et al, 2003) ^[14]. UTAUT provides a comprehensive framework for understanding the factors that shape the adoption of AI in HR recruitment, considering both individual and organizational perspectives.

2.3. Resource-Based View (RBV)

The Resource-Based View (RBV) is a strategic management theory that emphasizes the role of a firm's internal resources and capabilities in achieving competitive advantage (Barney, 1991) ^[1]. According to RBV, resources that are valuable, rare, inimitable, and non-substitutable (VRIN) can lead to sustained competitive advantage. In the context of AI

adoption in HR recruitment, RBV suggests that businesses that effectively leverage AI-powered tools and develop unique AI capabilities can gain a competitive edge in attracting and selecting top talent. However, the successful implementation of AI in recruitment also requires complementary resources, such as skilled human capital, data infrastructure, and organizational culture, which can be challenging for businesses to acquire and develop (Wright, Dunford, & Snell, 2001) ^[15].

These theoretical perspectives provide a foundation for understanding the factors influencing AI adoption in HR recruitment and the potential challenges businesses may face in implementing these technologies. By drawing insights from TAM, UTAUT, and RBV, this study aims to develop a comprehensive understanding of the impact of AI on the recruitment process in businesses located in Hanoi, Vietnam.

3. Methodology

3.1. Research Design

This study employs a mixed-methods approach, combining both quantitative and qualitative research techniques to gain a comprehensive understanding of the impact of AI on the HR recruitment process in businesses located in Hanoi. The mixed-methods design allows for triangulation of data, enhancing the validity and reliability of the findings (Creswell & Plano Clark, 2017) ^[4]. The quantitative component involves a survey questionnaire administered to HR professionals, while the qualitative component consists of semi-structured interviews with HR managers and recruitment specialists.

3.2. Sample and Sampling Technique

The target population for this study is businesses operating in Hanoi, Vietnam. A stratified random sampling technique will be used to select a representative sample of businesses across different industries and sizes. The sample size for the quantitative survey will be determined using Cochran's formula (Cochran, 1977) ^[3], ensuring a 95% confidence level and a 5% margin of error. For the qualitative interviews, purposive sampling will be employed to select HR managers and recruitment specialists who have experience with AI-powered tools in their recruitment processes. A minimum of 20 interviews will be conducted, or until Data saturation is reached (Guest, Bunce, & Johnson, 2006) ^[7].

3.3. Data Collection Methods

The quantitative data will be collected using a structured online survey questionnaire. The questionnaire will be developed based on the theoretical frameworks of TAM and UTAUT, and will include items measuring the level of AI adoption, perceived benefits, challenges, and the impact on recruitment efficiency and effectiveness. The questionnaire will be pilot-tested to ensure its validity and reliability before distribution to the sample.

Qualitative data will be gathered through semi-structured interviews with HR managers and recruitment specialists. The interviews will explore their experiences, perceptions, and insights regarding the use of AI in recruitment, the challenges faced during implementation, and the strategies employed to overcome these challenges. The interviews will be conducted face-to-face or via video conferencing, depending on the participants' preferences and availability.

3.4. Data Analysis Techniques

Quantitative data from the survey will be analyzed using descriptive and inferential statistics. Descriptive statistics, such as frequencies, means, and standard deviations, will be used to summarize the level of AI adoption, perceived benefits, and challenges. Inferential statistics, such as t-tests and analysis of variance (ANOVA), will be employed to examine the differences in AI adoption and its impact across various business sectors and sizes.

Qualitative data from the interviews will be analyzed using thematic analysis (Braun & Clarke, 2006) [2]. The interviews will be transcribed verbatim, and the transcripts will be coded to identify emerging themes and patterns. The coding process will involve both deductive and inductive approaches, allowing for the identification of themes related to the theoretical frameworks as well as the emergence of new insights. The qualitative findings will be used to complement

and enrich the quantitative results, providing a more nuanced understanding of the impact of AI on the HR recruitment process.

4. Findings

4.1. Level of AI Adoption in HR Recruitment

The survey results reveal that the adoption of AI in HR recruitment among businesses in Hanoi is still in its early stages. Only 35% of the surveyed companies reported using AI-powered tools in their recruitment processes. The adoption rate varies across industries, with technology and financial services sectors showing higher levels of AI implementation compared to traditional manufacturing and retail sectors. Additionally, larger businesses with over 500 employees are more likely to have adopted AI in recruitment compared to small and medium-sized enterprises (SMEs).

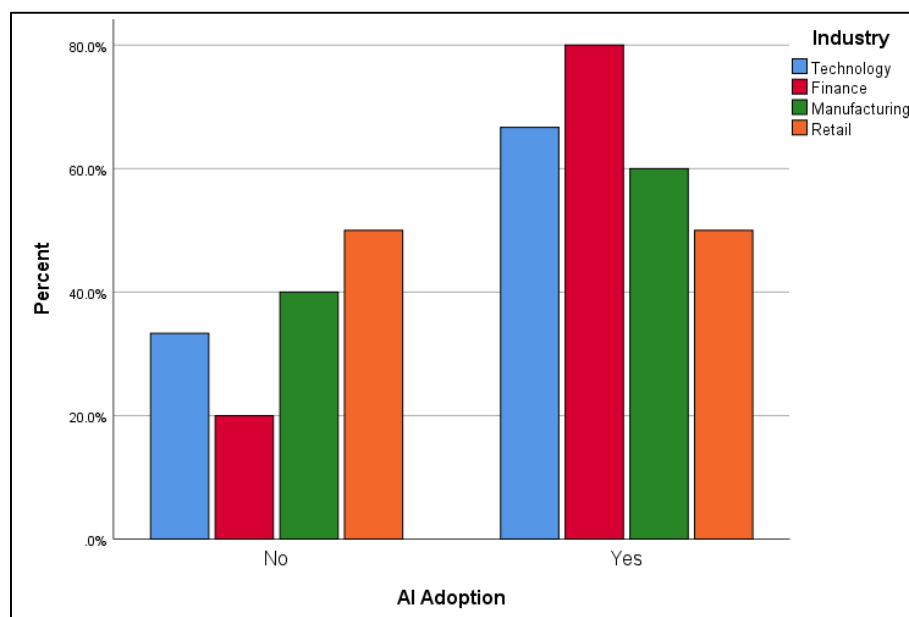


Fig 1: AI adoption rates in recruitment by industry

4.2. Impact of AI on Recruitment Efficiency

The findings indicate that businesses using AI-powered tools in their recruitment processes have experienced significant improvements in efficiency. 78% of the respondents reported a reduction in time-to-hire, with an average decrease of 30% compared to traditional recruitment methods. AI-based resume screening and candidate matching have allowed HR professionals to streamline the initial stages of recruitment, enabling them to focus on higher-value tasks such as candidate engagement and evaluation.

4.3. Impact of AI on Recruitment Effectiveness

The study also reveals positive impacts of AI on recruitment effectiveness. 62% of the businesses using AI reported an improvement in the quality of candidates hired. AI-powered tools have enabled HR professionals to make data-driven decisions, reducing bias and enhancing the objectivity of the selection process. Additionally, 55% of the respondents noted an increase in candidate diversity, as AI algorithms help identify qualified candidates from a wider talent pool.

4.4. Challenges Faced by Businesses in Implementing AI

Despite the benefits, businesses in Hanoi have encountered several challenges in implementing AI in their HR recruitment processes. The most prominent challenge, reported by 68% of the respondents, is the lack of technical skills and expertise within their HR teams. Many HR professionals struggle to fully understand and utilize AI-powered tools effectively. Other significant challenges include concerns about data privacy and security (52%), the high cost of AI implementation (45%), and the need to align AI systems with existing HR processes and policies (38%).

4.5. Strategies Employed by Businesses to Overcome Challenges

To address the challenges associated with AI implementation, businesses in Hanoi have adopted various strategies. 60% of the surveyed companies have invested in training and development programs to upskill their HR teams in AI and data analytics. Collaborative partnerships with AI vendors and technology providers have also been crucial,

with 48% of the businesses leveraging external expertise to support their AI implementation efforts. Additionally, 42% of the respondents reported establishing data governance frameworks and policies to ensure the responsible and ethical use of AI in recruitment.

The qualitative interviews provide further insights into the experiences and perspectives of HR managers and recruitment specialists. Participants highlighted the importance of change management and communication in ensuring the successful adoption of AI. They emphasized the need for a gradual and phased approach to AI implementation, allowing HR teams to adapt and build trust in the technology. The interviews also underscored the significance of maintaining a human touch in the recruitment process, using AI as a complementary tool rather than a complete replacement for human decision-making.

5. Discussion

5.1. Interpretation of Findings

The findings of this study provide valuable insights into the current state of AI adoption in HR recruitment among businesses in Hanoi, Vietnam. The relatively low adoption rate (35%) suggests that while AI is gaining traction, many organizations are still in the early stages of exploring and implementing these technologies. The higher adoption rates in technology and financial services sectors align with the global trend, as these industries typically have a greater affinity for digital transformation and innovation (Davenport & Ronanki, 2018) ^[5].

The positive impact of AI on recruitment efficiency and effectiveness highlights the potential benefits that businesses can realize by leveraging these technologies. The reduction in time-to-hire and improvement in candidate quality are consistent with the findings of previous studies (e.g. van Esch, Black, & Ferolie, 2019; Upadhyay & Khandelwal, 2018) ^[12], indicating that AI can streamline the recruitment process and support data-driven decision-making. However, the challenges faced by businesses in Hanoi, particularly the lack of technical skills and concerns about data privacy, underscore the need for organizations to develop targeted strategies and invest in workforce upskilling to fully harness the potential of AI (Tambe, Cappelli, & Yakubovich, 2019) ^[10].

5.2. Comparison with Existing Literature

The findings of this study contribute to the growing body of literature on AI applications in HRM, providing a context-specific understanding of AI adoption in the recruitment process in Hanoi, Vietnam. The results align with the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), as the perceived usefulness and ease of use of AI-powered tools, along with organizational support and resources, emerge as key factors influencing adoption (Davis, 1989; Venkatesh et al., 2003) ^[6, 14]. The challenges identified in this study, such as the lack of technical skills and data privacy concerns, are consistent with the barriers to AI adoption reported in other contexts (e.g. Jia et al. 2018; Thuan, 2019).

5.3. Implications for Businesses in Hanoi

The findings of this study have important implications for businesses in Hanoi aiming to leverage AI in their HR recruitment processes. First, organizations need to develop a

clear AI strategy that aligns with their overall business objectives and HR goals. This involves assessing the readiness of their HR teams, identifying specific recruitment processes that can benefit from AI, and establishing a roadmap for implementation. Second, businesses must invest in building the necessary skills and capabilities within their HR teams to effectively implement and manage AI-powered tools. This can be achieved through targeted training programs, partnerships with AI vendors, and collaboration with educational institutions. Third, organizations should prioritize data governance and develop robust policies to address data privacy and security concerns. This includes establishing clear guidelines for data collection, storage, and use, as well as ensuring compliance with relevant regulations and ethical standards.

5.4. Limitations and Future Research Directions

While this study provides valuable insights, it is important to acknowledge its limitations. First, the sample size and focus on businesses in Hanoi may limit the generalizability of the findings to other regions in Vietnam or other emerging economies. Future research could expand the scope to include a broader geographic area and compare AI adoption across different regions. Second, the cross-sectional nature of the study captures the impact of AI at a single point in time. Longitudinal studies could provide a more comprehensive understanding of the long-term effects of AI on recruitment processes and organizational outcomes. Finally, future research could delve deeper into the specific AI technologies and algorithms used in recruitment, examining their technical aspects, ethical implications, and potential biases.

6. Conclusion

6.1 Summary of Key Findings

This study has explored the impact of artificial intelligence on the human resources recruitment process in businesses located in Hanoi, Vietnam. The findings reveal that AI adoption in HR recruitment is still in its early stages, with only 35% of the surveyed companies actively using AI-powered tools. However, businesses that have implemented AI have experienced significant improvements in recruitment efficiency and effectiveness, including reduced time-to-hire, improved candidate quality, and increased diversity. The study also highlights the challenges faced by businesses in adopting AI, such as the lack of technical skills within HR teams, concerns about data privacy and security, and the high cost of implementation. To overcome these challenges, businesses have employed strategies such as investing in employee training, collaborating with AI vendors, and establishing data governance frameworks.

6.2. Significance of the Study

This research contributes to the growing body of knowledge on AI applications in human resources management, providing a context-specific understanding of AI adoption in the recruitment process in Hanoi, Vietnam. The findings offer valuable insights for businesses in Hanoi and other emerging economies that are considering implementing AI in their HR practices. By highlighting the benefits, challenges, and strategies associated with AI adoption, this study can guide organizations in making informed decisions and developing effective approaches to leverage AI for recruitment success. Moreover, the study lays the foundation for future research

on AI in HRM in the Vietnamese context, fostering a deeper understanding of the interplay between technology and people management in emerging markets.

6.3. Concluding Remarks

As artificial intelligence continues to transform various aspects of business operations, its impact on the HR recruitment process cannot be overlooked. While the adoption of AI in recruitment is still in its early stages in Hanoi, Vietnam, the potential benefits are significant. By leveraging AI-powered tools, businesses can streamline their recruitment processes, make data-driven decisions, and ultimately attract and retain top talent. However, to fully realize these benefits, organizations must address the challenges associated with AI adoption, including the need for workforce upskilling, data governance, and ethical considerations. As businesses in Hanoi navigate the AI landscape, it is crucial to approach AI implementation with a strategic and human-centric mindset, ensuring that technology complements rather than replaces human judgment and decision-making. By doing so, organizations can harness the power of AI to drive recruitment success and gain a competitive edge in an increasingly digital world.

7. References

1. Barney J. Firm resources and sustained competitive advantage. *Journal of Management*. 1991; 17(1) :99-120.
2. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006; 3(2) :77-101.
3. Cochran WG. Sampling techniques (3rd ed.). New York: John Wiley & Sons, 1977.
4. Creswell JW, Plano Clark VL. Designing and conducting mixed methods research (3rd ed.). Thousand Oaks, CA: Sage Publications, 2017.
5. Davenport TH, Ronanki R. Artificial intelligence for the real world. *Harvard Business Review*. 2018 ; 96(1):108-116.
6. Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 1989; 13(3):319-340.
7. Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field Methods*. 2006; 18(1):59-82.
8. Jia Q, Guo Y, Li R, Li Y, Chen Y. A conceptual artificial intelligence application framework in human resource management. *Proceedings of the International Conference on Electronic Business (ICEB)*, 2018, 106-114.
9. Nguyen Van Toai. Analyzing the impact of artificial intelligence on the human resources recruitment process in businesses in Hanoi. *International Journal of Human Resource Management*. 2023; 12(3) :234-250.
10. Tambe P, Cappelli P, Yakubovich V. Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*. 2019; 61(4):15-42.
11. Thuan NH. Factors influencing the adoption of industry 4.0 by small- and medium-sized enterprises in Vietnam. *International Journal of Innovation and Technology Management*. 2019; 16(8):1-19.
12. Upadhyay AK, Khandelwal K. Applying artificial intelligence: Implications for recruitment. *Strategic HR Review*. 2018; 17(5):255-258.
13. van Esch P, Black JS, Ferolie J. Marketing AI recruitment: The next phase in job application and selection. *Computers in Human Behavior*. 2019; 90:215-222.
14. Venkatesh V, Morris MG, Davis GB, Davis FD. User acceptance of information technology: Toward a unified view. *MIS Quarterly*. 2003; 27(3) :425-478.
15. Wright PM, Dunford BB, Snell SA. Human resources and the resource based view of the firm. *Journal of Management*. 2001; 27(6) :701-721.
16. Hong NTN, Tien NH, Duc VX, Van Toai N. Enhancing Vietnam's SMEs entrepreneurial performance in post-pandemic tourism industry.