

AN EXPLORATORY STUDY ON AI APPLICATIONS, BENEFITS, AND CHALLENGES IN HR AND FINANCE

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Abstract—In this research work, application of artificial intelligence (AI) in Human Resource Management (HRM) and Finance will be examined, discussing the strengths, risks and implications that may come out of it. The objective is to provide an overview of how AI is being used right now in these two organisational functions, and what are the risks. Descriptive and exploratory research approach was used based on secondary data. Peer-reviewed journals articles, industry reports, and case studies published in the period between 2018 and 2025 were reviewed and thematically analyzed in order to find the patterns in the use of AI in HR and finance, their strengths and problems. From the analysis, it was found out that AI is used in HR for resume screening, prediction of attrition, chatbot employee support, and recommendation of learning. In Finance – for fraud detection, credit scoring, algorithmic trading, and robo-advisory. In organisations, the use of AI in HR and Finance functions is associated with fast processing of data, reduction in operational cost and consistent decision-making, however, the main problems are the risk of data privacy, algorithmic bias, high costs of implementation, and resistance to change among employees. From the findings, it was concluded that AI should be implemented as a decision support tool alongside with the human decision-making.

Keywords: Artificial Intelligence, Human Resource Management, Finance, Automation, Algorithmic Bias, Decision Support.

1. Introduction

Artificial Intelligence (AI) is no longer a fancy thing existing only in laboratories of scientists and researchers. It has become a reality of today's business world and it is transforming the way organisations operate in HR and finance. Simply speaking, AI is computer systems capable of performing activities that require human intelligence – pattern recognition, prediction, and learning.

Human Resource Management and Finance have become two business functions in which the implementation of AI solutions has increased sharply. Thus, in HRM, AI helps to screen CVs of potential candidates, predict turnover among employees, and respond to the questions of the personnel via chatbots. In the Finance function, AI technologies assist in fraud detection, credit risk evaluation, and investment decisions made on the basis of robo-advisors. The implementation of AI in both the functions is supported by the presence of huge volumes of structured and unstructured data.

There are two aspects of using AI that should be taken into account when analysing the issue. On the one hand, AI offers a good opportunity to increase decision-making speed and efficiency of the process, and reduce cost and number of mistakes made by humans. This paper will explore both sides of the matter.

2. Objectives of the Study

- To identify the major areas of AI application within Human Resource Management and Finance functions.
- To discuss the advantages that organisations receive from the implementation of AI in these two functions.
- To reveal the main challenges and threats that accompany the use of AI in HR and Finance.
- The practical implications for managers, students and future researchers to draw.

3. Literature Review

Employees often perceive opaque AI evaluation models as threats, raising concerns regarding surveillance, employee autonomy, and algorithmic fairness (Safshekan et al., 2026 Chowdhury et al., 2024) Studies on HR technology reveal that the applicant tracking system based on AI algorithms selects candidates much quicker than human-based processes (Tambe et al., 2019), though multiple studies also emphasize a possibility for such systems to inherit biases based on biased hiring data they were trained on (Dastin, 2018 ; Raghavan et al., 2020)

Studies from Finance literature point out that the use of machine learning algorithms leads to an increased accuracy of credit risk assessment and fraud detection compared to traditional rule-based systems (Bussmann et al., 2021; Leo et al., 2019). The research in the area of robo-advisory reveals that the algorithm-based investment platforms have made access to basic financial advice cheaper and more convenient for retail clients (Phoon & Koh, 2017; Jung et al., 2018). At the same time, scholars raise a question of model transparency, noting that many AI models function like a "black box" and cannot be fully understood by regulators and customers (Rudin, 2019; Arrireta et al., 2020).

4. Research Methodology

4.1 Research Design

The research will be descriptive and exploratory in nature. It will not test any statistical hypothesis. Instead, it is intended to describe the current practices of applying AI in HR and Finance functions and discuss pros and cons mentioned in existing literature.

4.2 Data Sources

The entire study is based on secondary data. Sources include peer-reviewed academic journal articles, reports from consulting and research firms, as well as case studies of organizations that have introduced AI into HR and Finance functions. All the sources that were used to conduct the literature review were written between 2018 and 2025 in order to make sure that the review stays current in terms of AI capabilities.

4.3 Method of Analysis

Thematic analysis method was employed during this literature review. The literature on the matter was analyzed and categorized based on recurring themes, including "recruitment automation", "fraud detection", "algorithmic bias", "employee acceptance". The themes were further organized in the form of findings stated in Section 5.

4.4 Limitations

Since the literature review is based on secondary data and does not imply any field investigation, such as surveying, this research follows patterns reported in the literature. In addition, it does not provide any quantitative assessment of return on investment for introducing AI in the organization.

5. AI Applications in Human Resource Management

5.1 Recruitment and Onboarding

The applicant tracking systems using AI analyze resumes and determine whether a candidate meets all the job requirements within a few seconds. Chatbots take care of answering basic questions of candidates and scheduling interviews in order to reduce the load on recruiters.

5.2 Employee Retention and Performance

Predictive analytics tools analyze factors like absenteeism, engagement survey results and workload to determine the risk of employee leaving the organization. It gives the HR team time to prevent employees from quitting their job.

5.3 Learning and Development

AI learning tools suggest training courses based on an employee's position, skills lacking areas and his/her career objectives, making such programmes more personalized than one general training schedule for all employees.

5.4 Employee Support

The HR chatbots can be used today by most firms to respond to the most frequently asked HR questions related to holidays balance, payrolls and firm policies. They work round the clock and give the HR staff more time to deal with other issues of their employees.

6. AI Applications in Finance

6.1 Fraud Detection and Risk Management

Machine learning algorithms track the transactions and identify abnormal patterns that might be related to the fraud; these algorithms usually detect fraud much quicker than any audit.

6.2 Credit Scoring and Lending

More data points are analyzed by the AI algorithms in comparison with credit scoring systems. It means that AI could provide its services even to people without any credit history and at the same time the problem of discrimination should be considered carefully.

6.3 Investment and Trading

The algorithmic trading system makes trading decisions based on market data analysis in a second and the robo advisory platform builds investment portfolios for retail clients.

6.4 Financial Planning and Budgeting

AI solutions assist the finance department in predicting the cash flows and expenditures on the basis of analysing the historical data about financial situation, thus improving the accuracy of budget and financial planning.

6.5 Summary of AI Applications

Table 1 below gives a summary of the application areas of AI in the two functions.

Function	Application in HR	Application in Finance
Recruitment / Onboarding	Resume screening, chatbot-based candidate interaction, skill matching	Automated client onboarding, KYC document verification
Prediction & Analytics	Attrition prediction, workforce planning, performance analytics	Credit scoring, stock price forecasting, cash-flow prediction
Risk & Compliance	Bias detection in hiring, compliance tracking	Fraud detection, anti-money-laundering monitoring
Employee / Customer Support	HR chatbots, self-service leave and payroll queries	Robo-advisory, 24x7 customer service chatbots
Decision Support	Learning and development recommendations, succession planning	Algorithmic trading, portfolio optimisation, budgeting

7. Findings and Discussion

7.1 Benefits of AI Adoption

According to the review, there are three common advantages of using AI solutions in HR and Finance functions. First, speed: AI algorithms process much larger amounts of resumes, financial transactions or market data than people would be able to. Second, efficiency: automatic processing of tasks allows saving money on employing people to carry out routine activities. Third, consistency: AI follows the set of rules all the time, while human judgment may vary in similar situations.

7.2 Challenges of AI Adoption

There are two recurring disadvantages of using AI in the two business functions identified in the research. The first disadvantage is data privacy, since both the HR and Finance functions deal with confidential data about individuals, and using AI increases the amount of data stored and processed. Second disadvantage is algorithmic bias: if training data contain any bias caused by previous decisions of people, it may be reproduced and amplified by the AI algorithms.

7.3 Discussions

The results support the hypothesis made based on the review of the literature: augmentation of AI is the best model for the HR and Finance. Although the algorithms can very fast process data and detect the risks in terms of retention as well as financial anomalies, only the final decision-making must be left to humans, who have emotions, morality, and strategy.

8. Implications of the Study

8.1 Managerial Implications

To manage the risks associated with AI, managers need to see it as an assistive tool rather than as an independent decision-maker. Management needs to perform periodic algorithmic bias reviews, keep transparent about data usage by automated programs, and deploy such tools gradually using pilot projects.

8.2 Implications for Employees and Students

Professionals need to learn how to combine their knowledge in a certain field with data and AI skills to understand and cooperate with AI systems' outputs. Therefore, HR and finance programs at universities need to prepare their graduates for AI-based decision-making and management of technologies and data before entering the workforce.

8.3 Implications for Future Research

Since this study is based on secondary literature, further research is recommended to gather primary data through surveys and interviews to assess trustworthiness of employees, perceptions of fairness, and psychological safety. In addition, further research is recommended to empirically examine the impact of company size on AI implementation in administration.

8.4 Policy and Regulatory Implications

There should be well-defined standards of governance and ethics developed by regulatory agencies and professional organizations that govern the application of AI in human resource management and financial services. Policy-makers should develop standards around data privacy, algorithmic accountability, and anti-bias.

9. Conclusion

Implementation of Artificial Intelligence technology in Human Resource Management and Finance activities has moved from a hypothetical perspective to an actuality. As concerns HR processes, Artificial Intelligence helps speed up talent acquisition, provides personalized career development, and enhances retention policies through predictive analysis. As far as financial management is concerned, Automated algorithms assist in enhancing fraud detection, facilitate compliance reporting, and provide quick investment analysis based on the analysis of the data.

Data privacy issues, concerns about bias in recruiting and risk assessment processes, high costs of implementation, and employee mistrust are some major barriers to the successful implementation of AI technology. Moreover, the excessive use of automated processes may deprive important information needed for human and financial decision-making from its context. AI should not be a substitute for human leadership; it is a tool that can help people improve their work.

References

- [1] Arrieta, A. B., Díaz-Rodríguez, N., Del Ser, J., Bennetot, A., Tabik, S., Luengo, A., García, S., Herrera, F., Tabik, S., & Herrera, F. (2020). Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI. *Information Fusion*, 58, 82–115. <https://doi.org/10.1016/j.inffus.2019.12>.
- [2] Bussmann, N., Giudici, P., Marinelli, D., & Papenbrock, J. (2021). Explainable AI in fintech and financial risk management. *Frontiers in Artificial Intelligence*, 4, 630686. <https://doi.org/10.3389/frai.2021.630686>
- [3] Chowdhury, R. (Commentary on ethical surveillance, algorithmic accountability, and corporate transparency in AI).
- [4] Dastin, J. (2018, October 10). Amazon scraps secret AI recruiting tool that showed bias against women. Reuters.

- [5] Jung, D., Dorner, V., Glaser, F., & Morana, S. (2018). Robo-advisory: Digitalization and automation of financial advisory. *Business & Information Systems Engineering*, 60(1), 81–86. <https://doi.org/10.1007/s12599-018-0521-9>
- [6] Leo, M., Sharma, S., & Maddulety, K. (2019). Machine learning in banking risk management: A literature review. *Risks*, 7(1), 29. <https://doi.org/10.3390/risks7010029>
- [7] Phoon, K., & Koh, F. (2017). Robo-advisors and wealth management. *The Journal of Alternative Investments*, 20(3), 79–94. <https://doi.org/10.3905/jai.2018.20.3.079>
- [8] Rudin, C. (2019). Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead. *Nature Machine Intelligence*, 1(5), 206–215. <https://doi.org/10.1038/s42256-019-0048-x>
- [9] Safshekan, M., Feili, A., Shojaeifard, A., & Sorooshian, S. (2026). Artificial intelligence in human resource
