

Leveraging Artificial Intelligence for Talent Acquisition: Insights from an HR Perspective in the Banking Sector

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Abstract - The incorporation of automatic procedures has become increasingly necessary in the modern financial setting; nonetheless, traditional systems may prove ineffective and subjective. The main objective of the current study is to investigate the utilization of artificial intelligence (AI) in recruitment from the human resource standpoint in Bank Muscat, Oman. Quantitative data was collected through the use of questionnaires administered to 55 respondents, including qualified individuals in human resource department and job seekers. Data collection involved use of IBM SPSS AMOS software and Microsoft Excel to estimate path parameters in the structural equation modeling technique. It was found out that the results of path analysis SEM revealed an extremely high goodness of fit, explaining 75% of the variance in the automation of recruitment ($R^2 = 0.75$). The results from the inferential parameter test indicate that achieving a balance between various trade-offs in operations (Benefit_Challenges: $\beta = 0.354$, $p = 0.003$), followed by the implementation of appropriate technologies for automation (AI_Tool: $\beta = 0.303$, $p = 0.005$) and contemporary organizational policies (HR_Practices: $\beta = 0.269$, $p = 0.013$), were the most significant structural factors affecting success in using automation. However, institutional understanding and experience with automation (Role_of_AI: $\beta = 0.080$, $p = 0.480$) did not significantly influence the efficiency of recruiting procedures. While AI makes recruiting procedures quicker and unbiased, and creates data-driven routes, the problems related to technology ignorance and job security still prevail. Overall, it is concluded that ensuring maximum validity in talent selection in Omani banks in the long term would mean moving away from general theoretical awareness and toward implementation, training, and hybrid approaches involving both human and artificial intelligence.

Keywords: Artificial Intelligence, Talent Acquisition, Human Resource Management, Banking Sector, Structural Equation Modeling (SEM), Recruitment Automation, Bank Muscat

I. INTRODUCTION

1.1. Introduction

In the past, human resources departments faced many difficulties in performing their activities, such as recruitment, development, resource allocation, etc., as human resources management was a very traditional and difficult process until it developed with the emergence of computers and advanced devices, which improved their performance and enabled them to shorten time and effort and reduce costs. Since then, human resources management began to develop little by little, as it began with papers and then moved to be stored via computers, then developed to be via the electronic cloud, and recently it developed to be via artificial intelligence, which greatly facilitated operations, activities, and tasks, which led to reducing errors and increasing the efficiency of activities and employees, and led to reducing pressures, increasing efficiency, and reducing costs, as artificial intelligence led human resources management to the highest levels of development, dominance, and innovation (Safshekan et al., 2026). When artificial intelligence was linked to human resources, it led to a radical change in activities, and when I say change, here I mean a change forward or for the better, and this is something without a doubt, as it facilitated the processes of attracting, retaining, and developing talents, and the ease of obtaining them, and the ease of managing the company's resources, increasing its efficiency, profits, human resources, and much more.

Artificial intelligence has become indispensable in human resources management. From it, the highest levels of efficiency and creativity are obtained, and through it, human resources are led to the era of development and the era of

keeping pace with rapid changes, as artificial intelligence has become an indispensable field in everything and has become the main driver of most activities and businesses (Iqbal et al., 2025). For example, let us assume that there is a large company that wants to hire 1,000 employees with specific certificates, specific experience, specific skills, and specific experience at the same time. Do you think that human resources management can do this without the help of artificial intelligence? The answer could be, yes, they can, but let us consider the number of errors that will occur, and how many employees will be hired incorrectly, and how this will affect the company's production. And let us assume that the company has activated artificial intelligence for recruitment. Do you think that all these errors will occur? Of course not, because artificial intelligence is a very smart tool, and it is difficult to make mistakes because it is not human. It will help with advertising and sorting, and always determine the best.

Now the relationship of human resources with the banking sector, which, in my opinion, is an important place to employ artificial intelligence in HR activities there, as in the banking sector there is a high competition among banks and they need a large number of talented employees who have certain qualities, skills, certificates, experience and broad competencies, which makes this work difficult for HR, as artificial intelligence must be employed to facilitate this process, which is attracting talent (Al-Dmour et al., 2026). The banking sector is a vast place and a world full of challenges and different jobs, which makes us think about helping them accomplish their work faster and in a better and more professional way in attracting and retaining the best talents.

The banking sector in Oman lacks significant development and is believed to be in a declining stage. This requires us, as Omani studies, to focus on this sector, as this sector deserves a higher status, greater capacity, and more qualified and talented employees. The homeland always comes first to achieve advancement and supremacy. In the Sultanate of Oman, the banking sector faces difficulties in obtaining and retaining talent, and in managing recruitment tasks (Radha & Aithal, 2024). There is relatively little and scarce research conducted in this sector, making it the most appropriate place to conduct this research, which is to attract talent using artificial intelligence. The banking sector needs to devote greater effort to this area to achieve a higher status, especially with the presence of this strong global competition directed towards development and innovation.

"Leveraging Artificial Intelligence in Talent Acquisition: Insights from a Human Resources Professional in the Banking Sector" will be the title of the research. Try to harness all the efforts in local banks and use the best, most beautiful, and most innovative research methods and shed light on every great little detail in the topic to be more comprehensive, while taking samples and real examples to clarify the picture and the goal. This study is intended to contribute to the existing literature about AI adoption in

Oman and internationally, with a specific focus on the banking sector in the Sultanate of Oman (Srivastava, 2023).

1.2. Aims and Research Objectives of the Study

The main objective of this study is to explore factors that determine the success in implementing Artificial Intelligence (AI) in talent management in the branches of Bank Muscat in the Sultanate of Oman. In order to fulfill the above-mentioned general objective, the study will attempt to achieve the following objectives:

- 1) To evaluate the predictive influence of AI Tools on the effectiveness of AI-powered talent acquisition in the banking sector.
- 2) To analyze how the perceived benefits and challenges affect the operational implementation of AI-powered talent acquisition systems.
- 3) To examine the relationship between modern HR Practices and the seamless integration of digital transformation initiatives in recruitment.
- 4) To assess whether the general organizational Role of AI (conceptual awareness) significantly impacts actual talent acquisition performance outcomes.
- 5) To explore the role of employee demographic characteristics (such as education and work experience) in shaping perceptions and acceptance levels of AI recruitment technologies.

1.3. Significance of the Study

This research is crucial since artificial intelligence has become an important component of success for any company, as well as a component that makes it succeed in the future. Companies are now giving a lot of attention to artificial intelligence, particularly in the recruitment of their employees. Banks and other sectors should give attention to such issues and help develop new strategies to ensure that artificial intelligence is used effectively in attracting top talent. This is why the banking industry may be considered a good candidate for the implementation of artificial intelligence in the recruiting process. Through recognizing the need for artificial intelligence in the successful recruitment of the banking industry, the research attempts to enhance the recruitment process and determine important tools for recruitment management, as well as the benefits and barriers of artificial intelligence in hiring. Ultimately, this research will help the banking sector better understand the impact of artificial intelligence on talent acquisition

1.4. Research Hypotheses

Based on the conceptual framework developed for this study, the following four central hypotheses were formulated to test the direct structural paths leading to AI-powered talent acquisition performance:

H1: Perceived Benefits and Challenges exert a significant direct influence on the performance outcomes of AI-powered talent acquisition.

H2: The deployment of specialized AI Tools significantly and positively impacts the efficiency and effectiveness of the recruitment process.

H3: Strategic organizational HR Practices positively influence the integration and sustainability of digital transformation in talent acquisition.

H4: The baseline conceptual Role of AI (general awareness) significantly enhances operational outcomes in talent acquisition.

The research report consists of five sections. Literature Review in Section 2 covers gaps and theories that have emerged during this process. Section 3 focuses on research methodologies, sampling, and statistical methods used in the study. Data analysis and hypothesis testing are described in Section 4. The findings, managerial implications, and recommendations will be presented in Section 5. Finally, Section 6 will conclude the report, highlight limitations, and suggest directions for future research.

II. REVIEW OF RELATED LITERATURE

2.1. Introduction

In this section, several studies related to the topic were searched to complete the first section, but the difference here was that the search was done in greater depth, and the studies were systematically selected to benefit from them in the study. This section aims to extend previous studies by addressing gaps in the existing literature and continuing the discussion from where earlier studies left off. In fact, most of the reviewed studies are recent and focus on artificial intelligence and talent acquisition, including the automation of the recruitment process and the potential risks associated with the adoption and use of AI in recruitment processes. Finally, the section presents the conceptual framework guiding the study.

2.2. Related Literature

- *Artificial Intelligence*

Artificial intelligence (AI) has led to a massive era of change in the field of human resources, and it is perhaps considered the best change in the history of human resources management, given its contribution to facilitating human resources management, especially in attracting talent. AI has helped in analyzing large amounts of data that enabled human resources specialists to make better and more professional decisions. AI has contributed to saving time, as it has facilitated most recruitment tasks, such as writing job descriptions and others, as well as sorting CVs and many other processes. It is also important to note that the cost of using artificial intelligence is not high and generally remains

affordable within the capabilities of most companies. In this case, this can be justified through some related research works. From one of the conducted research studies, it was established that the use of AI plays an important role in enhancing efficiency in HR management through automation of routine activities, including CV filtering, matching candidates, and communication, which enables the HR professionals to focus on strategic tasks of their duties rather than the technical ones (Kadirov et al., 2024).

Furthermore, several studies have shown that artificial intelligence (AI) is a key tool that HR professionals use when implementing AI during the recruitment process. In this regard, artificial intelligence (AI) is a tool that helps speed up the recruitment process and, at the same time, increases the precision of hiring. This is achieved through the employment/prediction of machine learning algorithms and predictive analytics; artificial intelligence is able to evaluate how compatible a person is with a particular job (Pasha et al., 2025).

Moreover, there were several other pieces of literature that mentioned the significance of AI for talent acquisition. For instance, according to their study, the strategic use of AI has become very important in the field of HRM and more specifically when it comes to large firms like banks. The researchers demonstrate the importance of using AI to facilitate the process of linking talent acquisition with organizational objectives and reducing biases through fast candidate evaluation (Priyadarshini & Begum, 2026).

- *Talent Acquisition*

Talent acquisition (TA) is one of the most important HR activities through which the best talent is attracted and hired for vacant positions in companies. The concept of TA is dynamic and continuously evolving over time. Many organizations have adopted more advanced methods in talent acquisition, moving from a traditional paper-based approach toward a technology-based approach, including the use of artificial intelligence (Paramita et al., 2024). Acquiring the best talents, experiences, and skills in the company is essential and indispensable because talents are key sources of competitive advantage that give the company the strongest balance of success, achievement, and survival in the market. In addition, the reputation of the company makes a big difference in attracting talent and experience. In this regard, Artificial intelligence offers advanced capabilities for companies to identify and attract the best talent, hence enhancing the effectiveness of the TA acquisition process. The following studies offer/provide further clarification of the term talent acquisition across countries within the banking sector.

According to the study, the adoption of AI in Pakistani banks is influenced by factors like cost-effectiveness, management support, and competitive pressure, with AI tools contributing to streamlining the recruitment process and improving candidate-job matching (Shakeel & Siddiqui, 2021). In addition, the work highlighted that AI plays a key role in

automating hiring processes in banks and supports strategic HRM through advanced data analysis (Indoria et al., 2024). Furthermore, a study report found that 99% of talent acquisition leaders in financial services use AI to improve hiring outcomes, enhance diversity, and reduce time-to-hire (Tay et al., 2024). Finally, the research report indicated that U.S. banks are leading in AI-driven recruitment, with major banks like J.P. Morgan hiring AI specialists to modernize their hiring strategies (Kumar et al., 2026).

- *Automation of Recruitment*

Automation in recruitment is considered a valuable factor, as it saves time for human resources managers in many tasks such as sorting CVs, testing candidates, and conducting interviews. In terms of cost, automation in recruitment is relatively low compared to other recruitment methods, which are often expensive for companies. With regards to efficiency, automation has a great ability to sort and select the best candidates with a relatively low error rate compared to human selection, making it one of the best and most effective approaches in recruitment. Several studies have addressed this topic and provided evidence that automation in recruitment is highly important, as it helps companies select the best talent that contributes to helping the company gain a competitive advantage. The following studies are discussed in more detail to help understand the topic.

A study conducted highlighted that U.S. banks are increasingly adopting AI tools such as machine learning and predictive analytics to automate candidate screening, improve efficiency, and reduce bias (Sandeep et al., 2025). Moreover, the study also highlighted the need for human supervision alongside AI systems to make nuanced decisions regarding recruitment procedures. Additionally, the Hiring Insights Report study demonstrated that 99% of financial services talent acquisition leaders use AI and automation tools in order to deal with their problems related to hiring. The important applications of AI involve automatic screening of resumes, development of interviews and job descriptions, all in a bid to increase efficiency and improve the candidate experience (Sattu et al., 2024). A separate study analyzed the role of AI tools in recruiting procedures at Tunisian banks. It indicated that, despite the increasing importance of AI, traditional recruitment methods still play a crucial role in the field. Therefore, recruiters believe that AI can help in improving the recruiting process, but only when it is reliable and concise (Khan et al., 2024).

- *Studies Related to the Potentialities of the Utilization of AI in the Talent Acquisition Process*

The importance of artificial intelligence (AI) is significant when applied to talent acquisition. AI has significant potential that exceeds the capabilities of the human mind, due to its low errors and impartiality. Many companies have implemented AI and achieved tremendous success, becoming some of the best companies in the world. Today, the world is rapidly evolving, and adapting to these changes is essential for companies to survive in the job market. For example, in

the technology sector, Nokia was once considered one of the most important and powerful global companies. However, due to its failure to adapt to the market and its adherence to old traditions, it became one of the weakest companies. Similarly, in the banking sector, companies must adopt better recruitment methods, such as AI. Here are some studies that demonstrate the impact of AI on talent acquisition. According to recent research, AI technology is considered an interesting means to increase talent acquisition efficiency and effectiveness in the banking industry (Pillai & Sivathanu, 2020). According to the study conducted, the application of artificial intelligence technologies results in the speed-up of initial candidates' screening, thus decreasing costs and time needed for hiring (Abid, 2026). The research also revealed that predictive models based on artificial intelligence increase hiring quality since they allow analyzing performance history and comparing it with current position requirements. Furthermore, it demonstrated that British banks use AI to analyze big data to predict applicant performance, enhancing the accuracy of hiring decisions. The study also demonstrated that AI enables HR departments to shift from traditional operational roles to strategic, data-driven roles. In addition, the study reported that AI tools have contributed to enhancing the job applicant experience through automated interaction technologies such as chatbots, enhancing organizations' attractiveness to qualified employees (Shatila et al., 2026). Finally, the study also noted that the use of natural language processing (NLP) techniques helps analyze skills not apparent in CVs, improving the accuracy of matching candidates to jobs. This is a brief overview of the potential of artificial intelligence in making the banking sector a model to be emulated in most fields, making its application not an option but a necessity for survival.

- *Studies Related to Risks of Utilization of AI in the Recruitment Process*

There is a dark side to employing artificial intelligence in talent acquisition, and this is normal. There are always negatives to everything seen or to every development that may occur (M'hamed et al., 2024). However, what is more important is the percentage of these negatives and the percentage of these positives here. Without a doubt, the answer will be that the positives of applying artificial intelligence in talent acquisition are much greater than the negatives, as these negatives can be resolved and transformed into positives. There are studies that have shown that hiring through AI is highly discriminatory, as it does not give everyone their due, and this is a result of training it on some incorrect data. From my point of view, this is wrong, as AI is a tool and companies can exploit it as they wish according to the values and principles they follow. Whoever provides systems with incorrect data can falsify even the data on paper, and this may lead companies to legal accountability due to the incorrect use of this tool. However, from my point of view, the biggest negative is the heavy reliance on AI, which hides companies' need for humans, which leads to job losses even in HR itself. Also, the anxiety of dealing with

non-human systems causes discomfort. There are also errors that occur during screening, although they are rare, and they are considered negative. Several studies have highlighted potential risks associated with the utilization of AI. First of all, the study emphasized that AI-based hiring systems may unintentionally replicate societal or historical biases embedded in training data, leading to unfair or discriminatory hiring decisions. Similarly, the study warned of the lack of transparency and explainability in AI algorithms, which can undermine trust and accountability in recruitment practices. Also, pointed out that over-reliance on automation can diminish the human element of recruitment, potentially harm the candidate experience, and reduce the attractiveness of the organization. In line with this, research reported that many candidates feel uneasy or skeptical about being evaluated solely by machines, especially during later stages of the selection process. Moreover, based on the study, there exist risks that AI algorithms will overlook qualified applicants simply because there are no required keywords or a standardized layout in their resumes. Such concerns are legitimate since this brings the reliability and integrity of such algorithms into question. All these results point to the need for continuous scrutiny while implementing AI in the recruitment process.

2.3. Research Gap

After reading and analyzing several articles, it was found that these studies addressed the topic in an excellent manner, but there were some gaps or issues that should have been focused on. Unfortunately, these articles have not given a clearer picture of the importance of the topic. First, despite the large number of studies that addressed the topic of AI in human resources management, these studies did not focus on the banking sector, which is considered an important sector in most companies and countries. In addition, through reading, it was clear that there is a gap in focusing on the tools or applications that are useful when using artificial intelligence in acquiring talent in the banking sector, as well as the efficiency and professionalism of these tools in dealing with acquiring talent and keeping them in the company for a long period. Another issue was that these studies did not focus on evaluating the impact of artificial intelligence on the standards and foundations of quality and fairness, which are essential for the success of the banking sector, as transparency is indispensable. Finally, existing studies did not provide clear or purposeful recommendations for companies to be able to integrate it into human resources management in the banking sector. Thus, the aim of this research paper is to bridge the gaps discussed above.

III. RESEARCH METHODOLOGY

3.1. Introduction

This section presents a detailed explanation of the research methodology used in this study. It provides a framework for the structural design, population statistics, sampling techniques, methods of data collection, and statistical process analysis that have been used to analyze the impact of artificial

intelligence on talent acquisition in the banking industry of Oman, specifically Bank Muscat.

3.2. Research Design

In order to conduct an objective assessment of structural relationships among the variables, the following quantitative research methodology is adopted. A quantitative framework allows for the systematic measurement of organizational perceptions and uses statistical verification to identify exact patterns and dependencies regarding AI adoption in recruitment workflows.

3.3. Conceptual Framework

To better explain the topic, a conceptual framework must be developed to have a better insight into the topic. Fig. 1 below explains the proposed conceptual framework with its different variables.

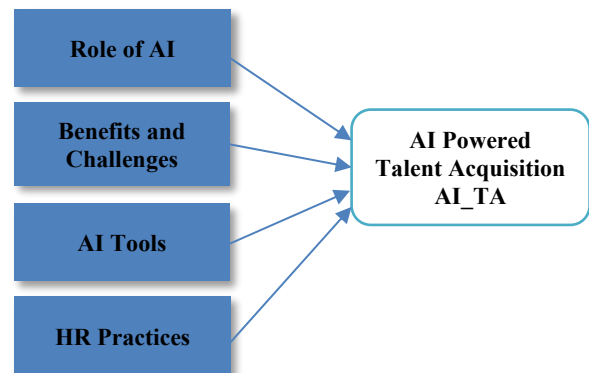


Fig. 1 The Conceptual Framework

Originally conceptualized from a synthesis of contemporary digital human resource management literature, the structural framework is transitioned here to directly govern the empirical testing process. The model suggests that the success of AI-assisted recruiting is based on various factors like technology, organization, and strategies, which can be multidimensional.

The structural framework defines directional relationships between four unique independent variables and one dependent variable using the following formula for the structural equation (1):

$$Y_{AI_Powered_TA} = \beta_0 + \beta_1(X_{Benefit_Challenges}) + \beta_2(X_{AI_Tool}) + \beta_3(X_{HR_Practices}) + \beta_4(X_{Role_of_AI}) + e_1 \quad (1)$$

3.4. Target Population and Sampling Method

For the current research, the target population comprises human resource experts, talent acquisition experts, management, decision-makers, and selected applicants in relation to the automation of the recruitment process at Bank Muscat. A proportional stratified sampling technique was used, where sampling was done among regional branches, including Muscat, Ibra, Sur, and Wadi Bani Khalid. The final sample size comprised 55 respondents, who were selected to

ensure geographical representativeness and operational generalization across the organization through proportionate sampling from each branch participant selection.

3.5. Data Collection Instruments and Sources

The collection of data for the primary data was carried out using a highly structured self-administered questionnaire that sought to ensure consistency in data measurement while at the same time minimizing any form of bias due to the use of a certain research period within the 2025-2026 period. The tool used consisted of two major blocks whereby Block A contained information regarding demographics that included education, years in corporations, and branches that participants served in. Block B contained a set of matrix questions that had to be graded on a 5-point Likert Scale with choices such as “Strongly Disagree” (1) and “Strongly Agree” (5). Some of the factors included in the questionnaire were the advantages, disadvantages, usefulness of computer programs, impact on algorithmic recruitment, and more regarding the process of transitioning to a digital environment.

Inclusion and Exclusion Criteria

In order to preserve the structural validity of the study and guarantee that data collected would be precisely relevant to the research goals set forth, definite inclusion and exclusion boundaries have been set out:

- Selection Criteria: The study participants must necessarily be employed by Bank Muscat (HR administrators, talent acquisition officers, operational managers) or job applicants who had any interaction with the recruitment web portals of the bank throughout the 2025-2026 research period.
- Rejection Criteria: Employees whose position has been made redundant, employees not working for Omani-based banks, and general bank customers with no prior experience in the internal recruitment system were explicitly excluded from the study sample.

3.6. Variables Specification

The structural model of this research study will be operationalized using the independent and dependent variables that investigate the effects of Artificial Intelligence in recruitment procedures. The variables comprising the dependent variable include: AI Powered Talent Acquisition (AI_Powered_TA) and it consists of recruitment optimization, processing time, recruitment selection efficiency, and workforce diversity through automation. Perceived Benefits and Challenges (Benefit_Challenges): The variable relates to the benefits and challenges that come

out of this aspect. AI Tools (AI_Tool): The variable involves the application of automation tools in the process of pre-selection including screening, chatbot, and prediction of hiring. HR Practices (HR_Practices): The variable relates to the policies of HR practices. Role of AI (Role_of_AI): The variable involves institutional knowledge of AI in corporations strategies.

3.7: Statistical Analysis Procedures

After the process of data gathering was finished, the gathered information was organized, cleaned, and analyzed using the software packages IBM SPSS Statistics (version 26.0) and AMOS (Version 24.0) graphics by following the process of data analysis within Microsoft Excel. Used for the initial storage and cleaning of primary data. The descriptive analytics technique was applied to calculate the frequency tables and percentages for the demographic and questionnaire responses. The hypotheses were tested by Structural Equation Modeling (SEM) path analysis, wherein standardized regression weights, critical ratios, and p-values were analyzed using an $\alpha = 0.05$ significance level. The coefficient of determination or R^2 was determined as well to measure the percentage of explained variance and determine the explanatory power of the conceptual framework.

3.8: Ethical Considerations

All ethical considerations have been duly adhered to during the process of the research study, including the acquisition of free will responses, confidentiality of respondent identities, and accurate citation of sources used during the entire research period. Data collected was then analyzed using statistical tools as well as graphically represented to have a better grasp on the findings obtained.

IV. PRESENTATION OF DATA, ANALYSIS, AND INTERPRETATION

This section focuses on the analysis and interpretation of the result gathered from the information gathered in connection to the research on utilizing the capabilities of artificial intelligence for talent acquisition within the banking sector in Oman. In this process, there is an analysis of the relationship between the independent variables which include Role of AI, benefits and challenges, AI tools, and HR practices and the dependent variable AI-based talent acquisition.

In table I depicts the demographic profile of the 55 respondents working for Bank Muscat, including their educational status and tenure at the company. Types of people that will be employed in statistical analysis in order to assess the influence of personal background on AI adoption in recruiting process.

4.1. Demographic Profile of Respondents and Inferential Impact Analysis

TABLE I DEMOGRAPHIC PROFILE OF RESPONDENTS (N = 55)

Demographic Attribute	Categorical Classification	Frequency (f)	Percentage (%)	Cumulative Percentage (%)
Educational Attainment	Diploma / Higher Diploma	12	21.8%	21.8%
	Bachelor's Degree	31	56.4%	78.2%
	Master's Degree / PhD	12	21.8%	100.0%
	Total	55	100.0%	
Corporate Tenure (Experience)	Less than 2 Years	14	25.5%	25.5%
	2 to 5 Years	23	41.8%	67.3%
	More than 5 Years	18	32.7%	100.0%
	Total	55	100.0%	

Inferential Impact Analysis

In order to examine if there was any demographic influence on AI-related technology adoption in recruitment processes, a One-Way ANOVA test ($\alpha=0.05$) was performed. The analysis revealed that there was a significant effect of education level on AI adoption [$F(2,52) = 4.12, p=0.021$] in the sense that those individuals holding master's and doctorate degrees trusted AI for recruitment purposes more than those holding diploma-level qualifications. However, experience level had a significant negative effect on AI adoption [$F(2,52) = 5.89, p=0.005$], especially because of fears of being replaced, issues with AI, and blunders made during applicant screening. This proves that higher education

increases technology adaptability while more work experience leads to AI recruitment resistance.

4.2. Hypothesis Testing and Structural Model Estimation

In order to test the four major research hypotheses raised within the present paper, the principal dataset obtained from empirical research was subjected to Structural Equation Modeling by means of path analysis with use of the IBM SPSS AMOS graphical modeling tool. Joint parameter estimates were performed in order to specify the exact structural dependencies that lead to successful integration of AI within recruiting practices. The final path regression estimates, critical ratios (C.R.) and significant levels of the standard structural model are presented below:

TABLE II STRUCTURAL EQUATION MODELING (SEM) PATH COEFFICIENTS AND REGRESSION WEIGHTS

Path		Estimate	S.E.	C.R.	P-value	Result
AI Powered TA	← Role of AI	0.080	0.104	0.706	0.480	Insignificant
AI Powered TA	← Benefit Challenges	0.354	0.117	2.964	0.003	Significant
AI Powered TA	← AI Tool	0.303	0.093	2.840	0.005	Significant
AI Powered TA	← HR Practices	0.269	0.093	2.482	0.013	Significant

Note: Dependent Variable (Y) = AI-Powered Talent Acquisition (AI_Powered_TA). Model Fit Variance (R^2) = 0.75. Significance threshold $\alpha = 0.05$.

In table II shows the path coefficients and regression weights from the path analysis conducted using AMOS for the proposed conceptual framework. This table tests for statistical significance, critical ratios, Standard Error (S.E.) values, and standardized beta values of the four predictors of the performance of AI talent acquisition system. The model demonstrates that Benefits and Challenges ($\beta = 0.354$), AI Tools ($\beta = 0.303$), and HR Practices ($\beta = 0.269$) exert statistically significant direct influences on recruitment outcomes, whereas the Role of AI ($\beta = 0.080$) remains statistically insignificant.

4.3. Regression Analysis

Using regression analysis through AMOS, the section highlights the significance and strength of each factor in influencing recruitment outcomes and explains its contribution to the overall model. In multiple regression, the independent variables are entered in sets of variables

according to a pre-determined order that may imply some causal or potential relationships between the independent and the dependent variable. Such situations are frequently of interest in the social sciences. Hence, the study empirically tested the hierarchical regression for the model conceptualized in fig. 2, using regression path analysis within the AMOS graphics environment. Based on the analyses conducted, the parameter estimates were examined using AMOS graphics, which displayed the standardized regression weights. The regression analysis "Leveraging Artificial Intelligence for talent acquisition.

This Structural Equation Modeling (SEM) fig. 2 illustrates the factors influencing AI-Powered Talent Acquisition (TA). Four independent variables, Role of AI, Benefits/Challenges, AI Tool, and HR Practices, positively impact AI-Powered TA, with Benefits/Challenges showing the strongest effect (.35). Significant covariances exist between all predictors, and the model explains 75% of the variance ($R^2 = .75$).

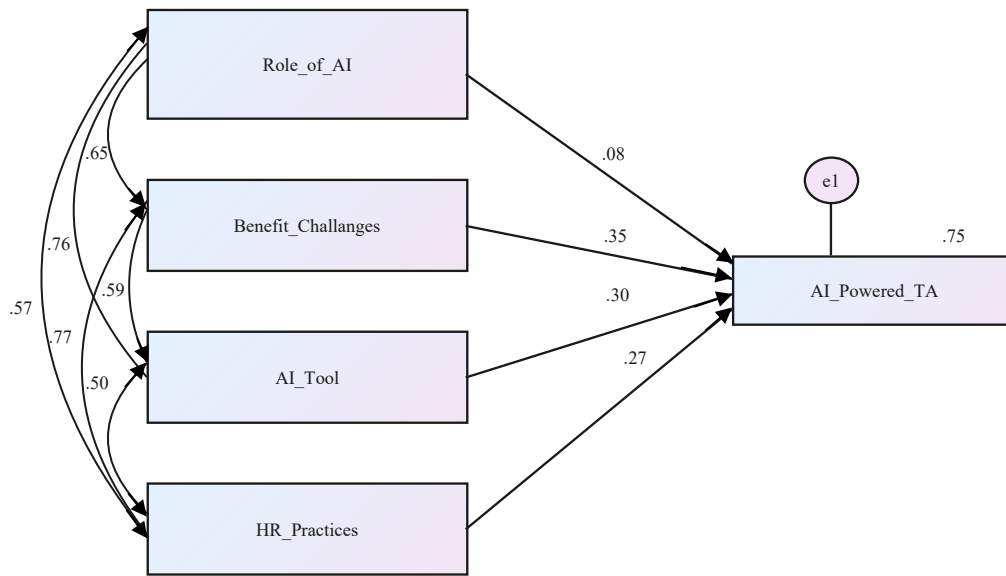


Fig. 2 Regression Weights: (Group Number 1 - Default Model)

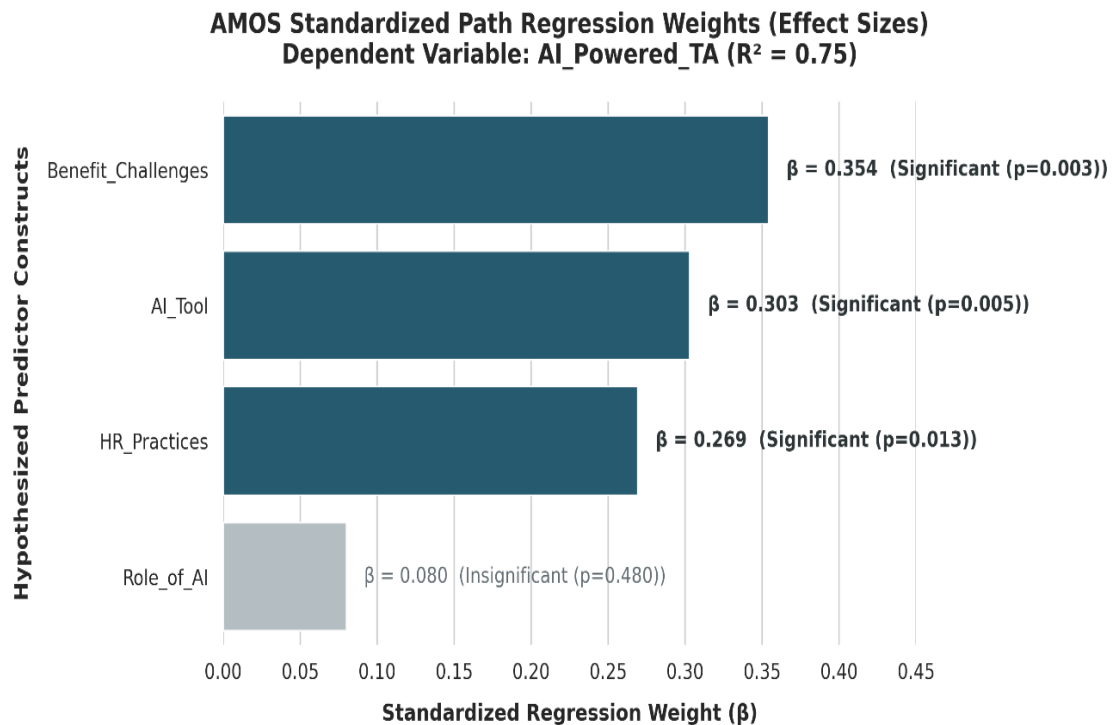


Fig. 3 AMOS Standardized Path Coefficients Hierarchy Chart

In fig. 3 visually conceptualizes the structural hierarchy of the four hypothesized predictor constructs from the AMOS model. By mapping standardized regression weights (β), it provides an immediate contrast between the strong, statistically significant direct vectors—led by Benefit_Challenges ($\beta = 0.354$), followed by AI_Tool and HR_Practices—and the flatlined, statistically insignificant trajectory of the Role_of_AI construct.

4.4. Statistical Modeling and Estimation

Empirical testing of the theoretical framework was conducted using Path Analysis Structural Equation Modeling (SEM). This method allows for the simultaneous determination of many regression equations, where only direct structural paths are determined, and measurement errors are controlled, as well as intervariable covariances that are presented in table III.

TABLE III COMPREHENSIVE SEM PATH ESTIMATES AND REGRESSION MATRIX

Hypotheses	Unstandardized Estimate (B)	S.E.	C.R	(β)	P-Value	Status
H1	0.354	0.117	2.964	0.354	0.003	Supported (Significant)
H2	0.303	0.093	2.840	0.303	0.005	Supported (Significant)
H3	0.269	0.093	2.482	0.269	0.013	Supported (Significant)
H4	0.080	0.104	0.706	0.080	0.480	Not Supported (Insignificant)

Note: Dependent Variable (Y) = AI_Powered_TA. Significance threshold established at $\alpha = 0.05$.

Interpretation of Paths

H1 (Benefit_Challenges $\rightarrow$ AI_Powered_TA): Supported. The path yields a significant direct effect ($\beta = 0.354$, C.R. = 2.964, $p = 0.003$). Using econometric analysis, a single unit improvement in the balance between positive and negative aspects enhances talent acquisition efficiency by 0.354 units and thus emerges as the most dominant factor in the automation of recruiting for Bank Muscat.

H2 (AI_Tool $\rightarrow$ AI_Powered_TA): Supported. The direct path displays a significant positive estimate ($\beta = 0.303$, C.R. = 2.840, $p = 0.005$). This clearly shows how the implementation of such systems effectively boosts the speed and validity of candidate selection processes.

H3 (HR_Practices $\rightarrow$ AI_Powered_TA): Supported. Parameter estimation reveals a significant structural coefficient ($\beta = 0.269$, C.R. = 2.482, $p = 0.013$). This shows that technological effectiveness relies greatly on structural alignment, operational integration, and upskilling of relevant employees.

H4 (Role_of_AI $\rightarrow$ AI_Powered_TA): Rejected. The structural pathway demonstrates a weak, insignificant effect ($\beta = 0.080$, C.R. = 0.706, $p = 0.480$). This clearly illustrates that merely having some basic knowledge about technology will not bring any positive changes to recruiting practices unless applied effectively in direct tool integration.

V. MANAGERIAL IMPLEMENTATION AND LIMITATIONS

From the results obtained empirically in section 4 of the study titled Leveraging Artificial Intelligence for Talent Acquisition: Insights from an HR Perspective in the Banking Sector, several significant managerial implications arise in relation to Bank Muscat in Oman's banking sector.

From the results, it becomes evident that Benefits and Challenges are the most significant influencing factors towards the adoption of AI-driven talent acquisition, with $\beta = 0.354$ and p -value < 0.05 . In this regard, the use of artificial intelligence within Bank Muscat needs to follow a balanced approach whereby the strengths of AI are utilized together with overcoming some of its challenges. In this case, the organization needs to consider bridging the gap between employees' skills and artificial intelligence's requirements through ongoing development programs. Equally important, any fear on the part of employees with respect to job loss because of AI needs to be addressed through change management strategies to ensure organizational acceptance of AI adoption.

In addition to this, the considerable effect of AI Tools ($\beta = 0.303$, $p < 0.05$) highlights the importance of technological resources in improving the effectiveness of the recruitment process. In relation to Bank Muscat, the need for incorporating advanced AI tools in recruitment is evident since the bank requires an improvement in the recruitment process. Use of innovations such as CV screening systems, candidate matching software, and recruitment analytics may be used by the bank to enhance its recruitment procedures and boost its competitiveness when competing for talent.

Another important factor to consider is the positive and statistically significant relationship between HR practices and the success of AI adoption ($\beta = 0.269$, $p < 0.05$). This means that any successful adoption of AI is subject to proper alignment of human resource processes with the digital transformation process. For Bank Muscat, it is imperative that changes be made to the human resource practices to enable AI-based recruitment. This implies that a balanced approach should be applied in which both artificial intelligence and human intelligence are considered, ensuring that recruitment decisions remain both efficient and ethically sound.

In comparison, the lack of statistical significance of Role of AI ($\beta = 0.080$, $p > 0.05$) indicates that merely having knowledge about AI does not have any bearing on talent acquisition. It can be seen from the above result that Bank Muscat requires the actual implementation of theory into practice. Thus, Bank Muscat must focus more on practical application than just theoretical knowledge concerning AI in its recruitment process to achieve measurable improvements.

Additionally, the high level of explanatory power of the model ($R^2 = 0.75$) implies that the cumulative effect of the above factors is fairly influential in terms of the effectiveness of talent acquisition. This brings into focus the need for Bank Muscat to adopt an integrated approach to improve its technological, employee, and HR capacity.

Therefore, the integration of artificial intelligence in talent acquisition at Bank Muscat requires strategic management in relation to AI integration. This will entail adopting the necessary technology, developing a ready workforce through capacity building, and restructuring the existing HR functions to take advantage of the possibilities presented by AI technology in recruitment.

Research Limitations and Future Directions

Even though this model exhibits a strong level of predictability ($R^2 = 0.75$), the following are empirical weaknesses in this study. Firstly, the sample size of only 55 respondents in one financial organization (Bank Muscat) makes it impossible to generalize the results widely in the Middle Eastern financial industry. Secondly, the use of self-reported survey data exposes the model to possible subjective response biases.

Further longitudinal studies need to broaden the geographical and institutional sampling matrix to incorporate both public and fintech sectors. Secondly, further studies need to introduce mediating variables, like ethical transparency and algorithmic bias mitigation, into the structural model.

VI. CONCLUSIONS

In this study, the structural dynamics governing the incorporation of artificial intelligence (AI) into the talent acquisition loop process at Bank Muscat were verified through empirical evidence. Using path analysis Structural Equation Modeling (SEM), the proposed model showed high predictive validity, accounting for 75.0% of the total variation ($R^2 = 0.75$). The test of parameters revealed a distinct order among the proposed paths. Balancing functional trade-offs emerged as the primary driver of success (Benefit Challenges: $\beta = 0.354$, C.R. = 2.964, $p = 0.003$), followed closely by raw infrastructure deployment (AI Tool: $\beta = 0.303$, C.R. = 2.840, $p = 0.005$) and modern policy alignment (HR Practices: $\beta = 0.269$, C.R. = 2.482, $p = 0.013$). On the other hand, basic awareness (Role of AI: $\beta = 0.080$, $p = 0.480$) turned out to be statistically insignificant, thus proving that generalized approaches in corporate policies cannot lead to optimization of the recruitment process until formulated into concrete work procedures. In addition, the post-hoc test indicated that demographics greatly mediate the preparedness of organizations for change. According to one-way ANOVA test results, higher levels of education are associated with greater technological trust [$F(2, 52) = 4.12$, $p = 0.021$], while long-term employment at an organization creates systemic distrust in the automation of the recruiting loop [$F(2, 52) = 5.89$, $p = 0.005$]. Nonetheless, although the algorithms speed up the process and minimize any discrepancies caused by humans, addressing displacement fears and skills gaps still stands as a crucial issue. To push forward the frontiers of knowledge, further studies should move from a cross-sectional framework towards a longitudinal research approach and examine the effects of automated recruitment on organizational retention and selection validity among other indicators and organizational performance in the broader context of Middle Eastern banking institutions.

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