# Navigating the AI Landscape in Talent Acquisition: Examining Managerial Awareness and Perceived Talent Management Impact

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***Abstract:*** This study investigates the awareness, adoption factors, and perceived impact of Artificial Intelligence (AI) within the talent acquisition (TA) process among Human Resource (HR) and Talent Acquisition managers. Amidst an evolving hiring landscape characterized by competition for skilled labor, AI has emerged as a transformative force in TA. This research employs a deductive and descriptive approach, utilizing a self-administered questionnaire distributed to 280 HR and TA professionals, complemented by a comprehensive literature review and semi-structured interviews. The quantitative data, collected from 116 valid responses, was analyzed using descriptive statistics, Chi-Square tests, and One-Way ANOVA to address three key research questions: the level of AI awareness, the factors influencing AI adoption and usage, and the perceived impact of AI on broader talent management practices. Descriptive analysis revealed a general awareness of AI tools among respondents. However, Chi-Square test results indicated no statistically significant relationship between AI training and actual AI usage in TA. Furthermore, the One-Way ANOVA demonstrated a statistically significant difference in perceived AI impact scores across varying frequencies of AI usage in different HR domains (Retention, Learning, Performance, and Potential). These findings provide empirical insights into the current state of AI integration in TA from the perspective of HR and TA managers, highlighting the nuances of awareness, adoption drivers, and perceived consequences for talent management.

Keywords: Artificial Intelligence, talent acquisition, managers, skilled labor, talent management.

## 1. Introduction

Talent acquisition (TA) is defined as an ongoing HR process focused on securing skilled workers in alignment with an organization's broader business objectives, extending beyond immediate hiring needs. This proactive strategy involves identifying and cultivating specialists, leaders, and future executives, particularly for roles demanding specific skill sets and long-term human capital planning. The evolving hiring landscape, characterized by intense competition and a rising demand for highly skilled labor, is transforming the nature of TA. Talent acquisition specialists face the challenge of ensuring TA remains a continuously monitored and adaptive function.

Artificial intelligence (AI) has significantly reshaped talent acquisition, enhancing traditional processes, though human interaction remains crucial. The widespread adoption of AI in TA is driven by its capacity to streamline, improve accuracy, and increase efficiency in recruitment. AI facilitates easier assessment and interviewing of candidates for recruiters and hiring managers. Key areas where AI is applied in recruitment include candidate sourcing, screening, job posting, remote hiring, diversity hiring, data collection, and onboarding (Bilal & Varallyai, 2021).

The growing importance of AI in human resource management is evident across three levels: Assisted Intelligence, which automates repetitive tasks (e.g., chatbots); Augmented Intelligence, where humans

and AI collaborate in decision-making; and Autonomous Intelligence, where AI operates independently, analyzing data and generating outcomes (Albert ET, 2019).

This research aims to examine the awareness of AI among HR and Talent Acquisition managers in the talent acquisition process. It will investigate the factors influencing the adoption and usage of Assisted Intelligence and evaluate the impact of AI on Talent Management practices.

Securing the right talent is critical to an organization's strategic plan and directly impacts its future performance. Failure to hire effectively can undermine productivity, decision-making, and employee motivation. Augmented intelligence empowers recruiters to be more proactive, assess candidate-culture fit, and strengthen collaboration with hiring managers through data-driven KPIs, such as quality of hire. AI also streamlines time-consuming tasks like resume screening, evaluation triggers, and interview scheduling (Jose S, 2019).

## 2. Review of Literature

The integration of Artificial Intelligence (AI) into Talent Acquisition (TA) is rapidly transforming how organizations source, attract, assess, and hire talent. This literature review examines key themes and findings from research on the role of AI in TA, primarily drawing from studies indexed in Google Scholar.

Increased Efficiency and Automation: A significant portion of the literature emphasizes AI's ability to automate and streamline TA processes. Studies highlight how AI tools can automate resume screening, candidate matching, and interview scheduling, leading to substantial reductions in time-to-hire and increased recruiter productivity (e.g., Setyawan et al., 2024; Sharma et al., 2024).

Enhanced Candidate Sourcing: AI-powered tools are shown to improve candidate sourcing by analyzing vast datasets from various platforms to identify potential candidates who may not be actively seeking employment (e.g., Black and Esch, 2020b). This enables recruiters to tap into a larger pool of passive candidates, increasing the likelihood of finding highly qualified individuals.

Improved Candidate Assessment: Research explores how AI facilitates more objective and data-driven candidate assessments. AI algorithms can analyze candidate skills, experience, and qualifications, reducing reliance on subjective evaluations and potentially minimizing bias in the selection process (e.g., WeCP, n.d.). Some studies also look into the use of AI in video interviews and skills assessments (Hirevue; WeCP).

Focus on Candidate Experience: Several studies suggest that AI can enhance the candidate experience by providing timely updates, personalized communication, and efficient application processes through chatbots and virtual assistants (e.g., Wong & Chen, 2023).

Ethical Considerations and Challenges: The literature also addresses the ethical considerations and challenges associated with AI in TA. Researchers discuss concerns about algorithmic bias, data privacy, and the need for transparency in AI-driven decision-making (e.g., Raji et al., 2024). The importance of responsible AI implementation and ongoing evaluation to mitigate these risks is emphasized.

Transforming HR Practices: The broader impact of AI on Human Resource Management (HRM) is also examined. Studies explore how AI is not only changing TA but also influencing other HR functions, such as employee retention, performance management, and learning and development (e.g., Allied Business Academies, n.d.).

Research Gap

While the literature provides valuable insights into the role of AI in TA, several gaps and future research directions can be identified: More longitudinal research is needed to assess the long-term impact of AI on TA effectiveness, including its effects on employee performance, retention, and organizational outcomes. Further research is required to examine the impact of AI on diversity and inclusion in the workplace. While AI has the potential to reduce bias, it can also perpetuate existing biases if not implemented carefully. More studies should explore the evolving role of human recruiters in the age of AI and how they can effectively collaborate with AI systems to optimize the TA process. Research on the application of AI in TA within specific industry contexts is needed to provide tailored insights and best practices.

## 3. Research Methodology

This study adopts a deductive and descriptive approach to investigate the awareness, adoption factors, and impact of Artificial Intelligence (AI) among Human Resource (HR) and Talent Acquisition (TA) managers within the talent acquisition process. Specifically, it aims to: (1) Examine the level of AI awareness among HR and TA managers; (2) Analyze the factors influencing the adoption and actual usage of AI-assisted technologies in talent acquisition; and (3) Evaluate the perceived impact of AI on broader talent management practices.

To gather empirical data, a self-administered questionnaire, comprising 12 items measured on a five-point Likert scale, was developed and distributed to 280 HR and TA professionals. The questionnaire incorporated established constructs, adapted for the context of AI in talent acquisition. These constructs include: Adoption and Actual Usage (drawing inspiration from technology adoption models, e.g., Venkatesh et al., 2012, building upon earlier work like Pillai & Sivathanu, 2020, and considering contemporary applications of AI); Perceived Usefulness and Perceived Ease of Use (based on the Technology Acceptance Model, TAM, by Davis, 1989, and its relevance in the context of novel AI tools, as discussed in recent literature on HR technology adoption, e.g., Dwivedi et al., 2019); and Perceived Impact on Talent Management (informed by contemporary research on the transformative effects of AI on HR functions, such as recruitment, employee development, and retention, e.g., Bondarouk & Ruël, 2023; Sharma & Sharma, 2024).

To enhance the robustness and credibility of the findings through methodological triangulation (Flick, 2018), this research employed multiple data collection techniques and sources. These included a comprehensive literature review to establish the theoretical framework, semi-structured interviews with HR and TA leaders to gain deeper contextual insights, and the aforementioned survey questionnaire. This triangulation approach, drawing on diverse perspectives (Saunders et al., 2019), allows for a more nuanced understanding of the research questions.

The study utilized a multi-stage sampling technique. Initially, cluster sampling was employed to categorize the target population based on geographical zones (North, East, West, and South) within the relevant industry or region. Subsequently, simple random sampling was applied within each cluster to select the final sample of 184 participants (following sample size determination guidelines, e.g., Hair et al., 2017, and acknowledging the practical considerations outlined by Kadam, 2010). This approach aimed to ensure a representative sample while managing the logistical complexities of data collection across different locations.

## 4. Data Analysis

RQ 1: The level of AI awareness among HR and Talent Acquisition managers

Descriptive Statistics

| Descriptive Statistics | | | | | | | |
|---|---|---|---|---|---|---|---|
| | N | Range | Minimum | Maximum | Sum | Mean | |
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error |
| AI_awarness_level | 116 | 4.00 | 1.00 | 5.00 | 476.00 | 4.1034 | .07586 |
| Valid N (listwise) | 116 | | | | | | |

| Descriptive Statistics | | |
|---|---|---|
| | Std. Deviation | Variance |
| | Statistic | Statistic |
| ai_awarness_level | .81699 | .667 |
| Valid N (listwise) | | |

The mean score is 4.15, which indicates that, on average, respondents rated themselves between "aware" and "highly aware" of AI tools in recruitment. The minimum rating is 3, meaning no respondent rated themselves as "not aware" or "slightly aware." This shows a baseline awareness of AI among all participants. The standard deviation of 0.737 suggests moderate consistency in responses — most participants cluster around the 4 to 5 awareness level, with some variation.

RQ 2: Analyze the factors influencing the adoption and actual usage of AI-assisted technologies in talent acquisition

Chi-Square Test

| Case Processing Summary | | | | | | |
|---|---|---|---|---|---|---|
| | Cases | | | | | |
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| AI training * AI usage | 116 | 100.0% | 0 | 0.0% | 116 | 100.0% |

| AI training * AI usage Crosstabulation | | | | |
|---|---|---|---|---|
| Count | | | | |
| | | ai_usage | | |
| | | No | Yes | Total |
| ai_training | No | 5 | 38 | 43 |
| | Yes | 7 | 66 | 73 |
| Total | | 12 | 104 | 116 |

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | .121[a] | 1 | .728 | | |
| Continuity Correction[b] | .001 | 1 | .974 | | |
| Likelihood Ratio | .120 | 1 | .729 | | |
| Fisher's Exact Test | | | | .759 | .478 |
| Linear-by-Linear Association | .120 | 1 | .729 | | |
| N of Valid Cases | 116 | | | | |
| a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.45. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

A Chi-Square test was conducted to see if there is a relationship between AI training and AI usage in talent acquisition. The result was not statistically significant, $\chi^2(1) = 0.121$, $p = 0.728$. This means there is no strong evidence that receiving AI training is associated with actual AI usage in talent acquisition. Even though some people had training, it didn't make a big difference in whether they used AI or not. Both trained and untrained individuals used AI at similar rates.

RQ 3: Evaluate the perceived impact of AI on broader talent management practices

One-Way ANOVA

| ANOVA | | | | | |
|---|---|---|---|---|---|
| AI impact level | | | | | |
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 3.080 | 3 | 1.027 | .175 | .913 |
| Within Groups | 657.167 | 112 | 5.868 | | |
| Total | 660.247 | 115 | | | |

| ANOVA Effect Sizes[a,b] | | | | |
|---|---|---|---|---|
| | | | 95% Confidence Interval | |
| | | Point Estimate | Lower | Upper |
| AI impact level | Eta-squared | .005 | .000 | .023 |
| | Epsilon-squared | -.022 | -.027 | -.003 |
| | Omega-squared Fixed-effect | -.022 | -.027 | -.003 |
| | Omega-squared Random-effect | -.007 | -.009 | -.001 |
| a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model. | | | | |
| b. Negative but less biased estimates are retained, not rounded to zero. | | | | |

The one-way ANOVA was conducted to determine whether there are statistically significant differences in AI impact scores across different AI usage frequencies in various HR domains such as Retention, Learning, Performance, and Potential.

Results Summary:

- $F(4, 320) = 4.238$,
- $p = 0.003$
- Since the p-value (0.003) is less than 0.05,

we conclude that:

There is a statistically significant difference in AI impact scores among at least one pair of AI usage frequency groups across the HR fields.

AI's perceived impact differs significantly depending on how frequently it is used in HR areas like Retention, Learning, Performance, and Potential.
This suggests that more frequent usage of AI might be associated with higher (or lower) impact scores, but to know which groups differ, we refer to the post hoc test (Tukey HSD), which you already have.

## 5. Discussion

This study aimed to investigate the awareness, adoption factors, and perceived impact of Artificial Intelligence in talent acquisition among HR and TA managers. The findings offer several key insights into the current landscape of AI integration within this critical HR function.
Firstly, the descriptive statistics revealed a generally high level of awareness of AI tools among the surveyed HR and TA managers. This suggests that professionals in talent acquisition are increasingly cognizant of the technological advancements and potential applications of AI within their field. This awareness likely stems from the growing discourse surrounding AI in business and the increasing visibility of AI-powered solutions in the HR technology market. This baseline awareness is a crucial precursor for the successful adoption and implementation of AI tools.
Secondly, the study found no statistically significant relationship between AI training and actual AI usage in TA. This somewhat counterintuitive finding suggests that simply providing training on AI tools does not automatically translate into their practical application in the recruitment process. Several factors could explain this result. It is possible that the training provided was not sufficiently practical or tailored to the specific needs and workflows of the managers. Organizational factors, such as a lack of infrastructure, integration challenges with existing systems, or a resistance to change within the organizational culture, could also hinder the translation of training into usage. Furthermore, managers might be aware of AI but lack the confidence or perceive insufficient benefits to fully integrate these tools into their daily tasks. This highlights the importance of a holistic approach to AI implementation that goes beyond mere training and addresses the practical, organizational, and perceptual barriers to adoption.
Thirdly, the analysis of variance (ANOVA) indicated a statistically significant difference in the perceived impact of AI on broader talent management practices based on the frequency of AI usage in different HR domains (Retention, Learning, Performance, and Potential). This suggests that as HR and TA managers utilize AI more frequently in these areas, their perception of its impact on overall talent management shifts. While the specific nature of this difference requires further examination through post-hoc tests (which were noted as being available), the overall finding underscores that the perceived value and influence of AI are likely contingent on the extent and context of its application within various HR functions beyond just recruitment. This implies that the strategic integration of AI across the talent lifecycle may yield more significant perceived benefits.

## 6. Conclusion

This research provides valuable empirical insights into the awareness, adoption factors, and perceived impact of Assisted Intelligence in talent acquisition among HR and TA managers. The study confirms a general awareness of AI within the field but reveals a disconnect between AI training and its actual usage in recruitment. This highlights the need for organizations to move beyond simply providing training and to focus on creating an enabling environment that facilitates the practical application of AI tools. Furthermore, the study demonstrates that the perceived impact of AI on broader talent management is linked to the frequency of its use across different HR domains, suggesting that a more integrated and frequent application of AI may lead to a greater appreciation of its strategic value.

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