

Artificial Intelligence in E-Recruitment: A Reliability Study with McDonald's Omega

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Abstract—In today's dynamic global business landscape, organizations strive to attract top talent and sustain an advanced skill base through effective, scalable recruitment methods. Employers in Azerbaijan, faced with a substantial influx of job applications, encounter the challenge of labor-intensive, manual candidate selection to identify the most suitable hires. This study introduces a cutting-edge e-recruitment support system designed to evaluate applicants' professional experience, credentials, and alignment with specific job roles in governmental and corporate settings. The system is implemented with the Laravel framework, React Inertia for the interface, and PostgreSQL as the database, enabling streamlined, high-performance data handling. Using McDonald's Omega for reliability and validity testing in a quantitative survey, the system achieves a reliability score of 0.878. By systematically analyzing job requirements and matching them to candidates' proficiencies, this system minimizes the need for human intervention in selection, optimizing the shortlisting process.

Keywords—AI, automation, Omega, employment, questionnaire

I. INTRODUCTION

This research presents a thorough examination of various expert perspectives on e-recruitment, a sophisticated process that has evolved well beyond the basic act of posting job advertisements online or on social media. Today, e-recruitment comprises a strategic set of interlinked stages, each essential for accurately identifying and matching qualified candidates to organizational needs. By drawing on a range of scholarly views, this study seeks to clarify the nuances of e-recruitment, examining its potential and limitations in the modern hiring landscape. To capture a comprehensive understanding, the literature is structured around two core dimensions: the diverse strategies within e-recruitment methodologies and the standards of quality that underpin effective candidate selection. This framework not only highlights the operational scope of e-recruitment but also underscores its role as a critical component in organizational talent management.

II. RELATED WORK AND THEORETICAL FOUNDATIONS

The application of advanced recruitment strategies is essential for organizations aiming to attract top-tier talent and strengthen their talent management processes effectively [1]. Over the last few decades, recruitment practices have undergone notable evolution. With the acceleration of global market demands, the emphasis on online hiring has increased, reflecting the growing need for qualified, adaptable professionals [2]. The shift toward digital recruitment has allowed organizations to streamline the hiring process,

improving speed, efficiency, and candidate engagement. This transition is particularly relevant in the current labor market, where companies face greater competition for skilled workers.

This study examines the role of digital recruitment in fulfilling specific hiring needs within both corporate and government sectors in Azerbaijan, offering insights from various human resources experts into the advantages and challenges of e-recruitment in today's competitive hiring environment. Furthermore, it highlights the broader impact of digital recruitment in Azerbaijan, focusing on how it addresses both local and global talent needs within a rapidly changing job market.

III. FORMS OF RECRUITMENT STRATEGIES

An organization's recruitment framework consists of a systematic approach to attracting, selecting, and assigning qualified individuals to vacant roles. The recruitment process can be primarily categorized into in-house recruitment (promotion) and outsource recruitment. In-house recruitment involves the strategic use of the organization's existing workforce to fill job openings through promotions or transfers. For example, companies may elevate junior employees to higher-ranking roles, fostering internal career progression. In contrast, outsource recruitment seeks to attract candidates from outside the organization, aiming to infuse the company with new skills and perspectives by hiring external talent. This process is typically managed by the human resources department and can involve a variety of methods, from traditional advertising to more innovative techniques like e-recruitment. Both approaches serve unique purposes, with in-house recruitment focused on utilizing existing internal resources, while outsourcing recruitment expands the talent pool with fresh expertise [3].

In-house recruitment is often more efficient, requiring fewer resources in terms of time and cost. Since organizations are already familiar with the abilities and potential of their internal workforce, the process is generally quicker and less expensive than hiring outsourcing. Moreover, promoting employees not only motivates them by demonstrating opportunities for career growth but also encourages them to perform at a higher level. On the other hand, outsource recruitment offers significant advantages by introducing fresh ideas and diverse experiences that can invigorate the organization. It allows the company to select from a broader candidate pool, potentially bringing in highly specialized skills or new perspectives that may not be present internally. Additionally, outsource hiring can prevent stagnation within the organization. However, this process tends to be more expensive, complex, and time-consuming, making it a more resource-intensive option for companies [4]. While in-house

recruitment boosts employee morale and enhances performance within the company, outsource recruitment plays a vital role in attracting new, specialized talent to meet evolving organizational needs [5]. The recruitment process itself comprises several critical steps, including planning, identifying staffing needs, and generating job descriptions, which are essential for outlining the expectations for a given role. According to Rynes, Sara L, [6] there are 15 distinct steps in the hiring process, designed to ensure the best candidate is selected for the position. Once job openings are advertised, the next steps involve screening applicants and conducting interviews to identify the most qualified individual for the job. Adhering to these steps is essential to guarantee the selection of competent candidates who meet the requirements of the job. Failure to follow these structured procedures can lead to suboptimal hiring decisions, potentially impacting organizational performance [7].

A. Identifying the Job Candidate Pool

Since it immediately affects the next steps in choosing the best candidate for the job, the search for competent candidates is an essential part of the e-recruitment process. Teruna, Dipa and Tedy Ardiansyah draws attention to the fact that determining the "job folder" entails matching the hiring requirements with the particular requirements specified by the clients. This step focuses on establishing the candidate profiles and qualifications that are critical to the position. These standards are then used as a basis for developing job descriptions and specifications [8]. Additionally, Tedy Ardiansyah highlights that one of the most important steps in the E-recruitment process is choosing the appropriate candidate pool. This entails focusing on a particular area of the labor market to find possible applicants who fit the requirements for the open post [8]. Organizations' attempts to find qualified applicants form the foundation of the e-recruitment process, which generates a large applicant pool for additional screening and assessment [9].

B. Evaluating Applicants

The process of choosing the best applicant for a vacant post heavily relies on applicant evaluation. According to Goldstein, Harold W., the evaluation procedure entails going over the application forms, resumes, and other pertinent papers that applicants have supplied. The evaluation is carried out using the data in these documents, with an emphasis on how well the profiles of the applicants match the job specifications [10]. The assessment concludes with a thorough analysis of the candidates' credentials and abilities. Following that, those who fit the job requirements are put on a shortlist for additional consideration [10].

Together with the observations made by Pascua, Janice and Genaro Japos, Janice highlights that candidate evaluation is an essential component of the E-recruitment process since it guarantees that only candidates who possess the required credentials and skill sets are chosen for the position [11]. Moreover, software tools that rate applicants according to their qualifications are frequently used to improve the evaluation process and help find the best candidates for the job [9]. Because they enable companies to identify and screen applicants who possess the exact abilities required for the position, these test results are essential in online hiring [11].

Evaluation is a crucial stage in the hiring process that helps businesses choose applicants within a predetermined window of time, claim Park, In-Jo and Shenyang Hai. In e-recruitment, the evaluation procedure focuses on the candidates' credentials and abilities in addition to their scores. Additionally, organizations are free to modify the evaluation criteria in

accordance with the particular work requirements. Furthermore, the selection process is significantly shaped by organizational management expectations, especially with regard to the necessary qualifications and competencies [12].

C. Candidate Ranking and Prioritization

Following evaluation, candidates are ranked and given priority according to how well they meet the job requirements. Usually, this procedure entails rating applicants based on important standards like technical proficiency, appropriate experience, and professional credentials. Recruiters can effectively reduce the applicant pool and make the selection process more targeted and controllable by implementing a clear rating system.

Furthermore, cultural fit and the likelihood of long-term success inside the company are taken into account when prioritizing candidates. This approach guarantees that the final choice is in line with the organization's strategic goals and values, as well as improving the effectiveness of the hiring process, as mentioned by Acikgoz, Yalcin [13]. Well-rounded, well-informed recruiting decisions are made possible by the combination of objective data and subjective evaluations.

D. Assortment of Interviews Participants

In e-recruitment, the evaluating process entails choosing the best applications from the pool for a particular position. According to Acikgoz, Yalcin the human resources department is in charge of selecting applicants according to how well-suited they are for the role [13]. This choice is largely made by recruitment managers, whose participation is essential in deciding which applicants move on to the interview phase [13].

At this point, recruiting managers make important choices like shortlisting applicants, maintaining reserves, and stopping the hiring process if required, according to Ivan Rossenberg, Yvonne G. T [14]. According to Johns, Gary [15], the selection process is based on how well candidates' qualifications and documentation meet the job requirements. While "holding" candidates offer the possibility of reconsideration at a later time, the reserve list guarantees backup candidates in the event of withdrawal [16].

E. Last Choices

The hiring managers make the ultimate choice about which candidates to choose based on a variety of criteria. Zhu point out that a number of factors, such as the applicants' evaluation results and short-listing outcomes, affect the choice [17]. Although recruitment managers may occasionally give priority to the evaluation results in the E-recruitment process, the ultimate decision is not entirely dependent on them [17].

Pascua, Janice and Genaro Japos on top of that, keep in mind that managers make their final choice on an assessment of candidates' abilities, credentials, and experience [10]. In certain cases, employee recommendations may influence hiring decisions; nonetheless, this may result in biased selections that may impact future job performance. For this reason, managers must continue to be objective and rigorous in their decision-making process in order to guarantee that the best candidates are chosen [10].

IV. METHODOLOGY

A structured questionnaire is used in this study's descriptive survey design approach to assess the effectiveness, adaptability, and uptake of AI-driven e-recruitment systems in Azerbaijani companies. In order to learn more about HR

professionals' and workers experiences using AI-based recruitment solutions, a poll was conducted.

452 participants, including HR experts and staff members from business and government institutions in Azerbaijan, made up the study sample. To guarantee varied representation across industries, participants were chosen using a random selection technique. Participation was completely voluntary, and all replies were anonymised to preserve confidentiality.

A questionnaire that was created based on previous research and verified by four focus groups with HR specialists served as the data gathering tool. The 24 items in the tool were divided among three main domains:

- E-Recruitment Requirements (10 items): centered on how participants viewed the value and necessity of AI systems in hiring procedures.
- Adaptability (9 items): Evaluates how simple and eager firms and people are to use AI hiring technologies.
- Effectiveness (5 items): Assessed how well AI tools performed and how dependable they were in reaching hiring goals.
- On a 5-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree," participants scored their answers.

Four seasoned HR specialists evaluated the questionnaire to determine its suitability and connection to the goals of the research. The tool's final version took into account their suggestions.

McDonald's Omega, a metric appropriate for evaluating internal consistency, was used to examine the questionnaire's reliability. Reliability was assessed using a threshold of 0.70 in accordance with Hair et al. [18]. As can be seen below, the outcomes surpassed this benchmark in every domain:

- Need for E-Recruitment: Omega = 0.878
- Adaptability: Omega = 0.916
- Effectiveness: Omega = 0.890

These results meet the requirements for convergent validity by confirming the high level of internal consistency and reliability of the questionnaire items [18].

An online survey platform was used to gather data over a nine-month period. Participants were given explicit information about the goal and parameters of the study. In order to prevent sensitive information from being connected to specific participants, responses were anonymised. Descriptive statistics, such as mean, standard deviation, and lowest and maximum scores for every item, were used to examine the gathered data. To interpret general patterns, responses were divided into two categories: agree and strongly agree. The main conclusions from the three areas are given in Tables I-III.

V. RESULTS

Need for E-Recruitment (Table I): The results highlight the significance of AI in simplifying recruitment processes. Participants showed strong agreement with statements indicating that AI reduces bias, improves efficiency, and integrates seamlessly with existing workflows. The total mean score of 3.93 reflects a general positive perception of AI's role in recruitment.

Adaptability (Table II): Participants demonstrated a high level of adaptability, with a total mean score of 4.14. Most respondents agreed that AI tools were easy to use, required minimal training, and aligned well with organizational goals. Challenges related to technological resistance were identified but did not significantly impact overall perceptions.

Effectiveness (Table III): The effectiveness domain achieved a total mean score of 4.06, indicating that AI systems are perceived as highly effective in identifying quality candidates, reducing time-to-hire, and meeting recruitment objectives.

Reliability Analysis (Table IV): The McDonald's Omega reliability coefficients across all three domains exceeded the acceptable threshold of 0.70, confirming the robustness of the questionnaire tool.

VI. CONCLUSION

The study underscores the growing relevance of AI in revolutionizing recruitment processes in Azerbaijan. The findings reveal that:

- AI-based recruitment tools are perceived as highly effective in streamlining candidate selection, reducing workload, and enhancing decision-making accuracy.
- Employees demonstrate adaptability toward the adoption of AI, supported by minimal training requirements and alignment with organizational goals.
- Challenges such as resistance to change and integration complexities persist but are outweighed by the advantages AI offers.

The high reliability of the tool, as evidenced by McDonald's Omega coefficients, affirms the validity of the study findings. Future research could explore longitudinal impacts of AI adoption on recruitment outcomes and investigate industry-specific variations in its effectiveness.

Even while e-recruitment has several advantages, like increased reach and quicker procedures, problems like managing inappropriate applications and guaranteeing diversity still exist. This study closes a gap by offering an organized, structured system designed for Azerbaijan's business and government sectors. Positive respondent feedback attests to the system's dependability and efficacy.

In order to make hiring more intelligent, efficient, and inclusive, future research will concentrate on integrating cutting-edge AI technologies to further hone the candidate selection process. This study is a step in the right direction toward updating hiring procedures and meeting the changing demands of businesses in a competitive labor market.

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TABLE I. E-RECRUITMENT REQUIREMENTS

Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Standard deviation
Q1	33	43	44	159	173	3.87	1.22
Q2	27	43	50	161	171	3.89	1.18
Q3	28	43	42	155	184	3.93	1.19
Q4	24	47	44	164	173	3.91	1.17
Q5	31	33	36	166	186	3.98	1.18
Q6	28	47	43	143	191	3.93	1.22
Q7	20	45	36	170	181	3.98	1.13
Q8	34	38	43	162	175	3.89	1.22
Q9	24	50	40	167	171	3.90	1.17
Q10	17	51	40	153	191	3.99	1.14
Total Mean						3.93	

TABLE II. ADAPTABILITY

Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Standard deviation
Q1	29	26	34	170	193	4.04	1.14
Q2	19	19	33	174	207	4.11	1.02
Q3	19	21	26	200	186	4.13	1.00
Q4	24	27	23	171	207	4.11	1.10
Q5	36	15	22	172	207	4.10	1.16
Q6	26	27	18	176	205	4.12	1.11
Q7	22	17	27	172	214	4.19	1.04
Q8	21	20	26	171	214	4.18	1.04
Q9	19	22	16	182	213	4.21	1.01
Total Mean						4.14	

TABLE III. EFFECTIVENESS

Question	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Standard deviation
Q1	23	13	48	177	191	4.10	1.04
Q2	21	30	49	182	170	3.99	1.08
Q3	15	19	48	203	167	4.07	0.96
Q4	29	29	44	181	169	3.95	1.14
Q5	19	20	37	172	204	4.15	1.03
Total Mean						4.05	

TABLE IV. RELIABILITY ANALYSIS

Domain	Omega Reliability
E-Rec	0.877750973695002
Adaptability	0.9164755744222
Effectiveness	0.890026376568909