

LEGAL AND ETHICAL RISKS OF ARTIFICIAL INTELLIGENCE BASED HIRING TOOLS IN SINDH, PAKISTAN: A MANAGERIAL PERSPECTIVE

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ABSTRACT

Background: Hiring tools based on Artificial Intelligence (AI) are being actively adopted in the Pakistani healthcare and corporate sections of the Sindh industry. These tools present serious ethical and legal issues particularly in areas of discrimination, privacy and accountability, though they are very efficient.

Objective: The aim of this study is to examine the legal and ethical risks of using AI-based hiring tools according to the view of Sindhi managers in Pakistan.

Methods: Cross-sectional survey-based descriptive study was conducted among the Human Resource (HR) and departmental managers in Sindh in the health and corporate sectors. Cochran formula was used in calculating sample size. SPSS v25 was used in the analysis of data.

Results: Out of 384 respondents, 68.2% indicated that people were concerned with the privacy of their data, 54.4% respondents were aware of the existence of algorithmic bias, and 47.9% stated that they did not know anything about the legal regulation of AI recruitment in Pakistan. There was a high correlation between being aware of awareness of legal frameworks and level of education ($p < 0.05$).

Conclusion: The research concluded to the existence of the significant lack of legal awareness and moral readiness among the managers who rely on AI-based hiring options. More regulatory systems and moral education demand an immediate change to allow responsible integration of AI into recruitment.

Keywords: Artificial Intelligence, Hiring Tools, Legal Risks, Ethical Risks, Sindh, Pakistan, Managerial Perspective, HR Technology

INTRODUCTION

Decision-making under Artificial Intelligence (AI) is transforming all industries, among them

recruitment. AI hiring tools are based on the algorithm to filter resumes, video interviews,

and personality assessment. These technologies despite their efficiency benefits have significant legal and ethical issues. AI systems have faced criticism on the global arena due to bias, absence of transparency and breach of privacy [1-3].

The use of AI in hiring is still in infancy in Pakistan and especially in Sindh. Nevertheless, the regulation environment is not well developed. PECA 2016, which is the Pakistan Electronic Crimes Act, does not directly address the issue of AI-based hiring. Lack of clearly established legal frameworks makes it more likely that this will be misused, in particular when the AI systems have worked as black boxes without transparent decisions [4, 5].

This study aims to explore how managerial staff views the legal and ethical concerns of AI-based recruitment in Sindh. It also attempts to determine knowledge gaps in awareness and make policy recommendations on safer incorporation of such technologies.

3. Methodology

3.1 Study Design

The study was a descriptive cross-sectional study that was carried out from March to July 2025 on both the publicly and privately owned healthcare and corporate institutions in Sindh, Pakistan.

3.2 Population and Sampling

Target Population:

HR and departmental managers that use or were exposed to AI-based hiring tools.

Sample Size Calculation:

Using Cochran's formula:

$$n_0 = Z^2 \cdot p \cdot (1-p) / e^2$$

Where:

- $Z = 1.96$ (for 95% confidence)
- $p = 0.5$ (maximum variability)
- $e = 0.05$ (margin of error)

$$n_0 = (1.96)^2 \cdot 0.5 \cdot (1-0.5) / (0.05)^2 = 384.16$$

3.3 Inclusion Criteria

- Managers from HR, administration, or relevant departments.
- At least 1-year experience in hiring processes.
- Consent to participate.

3.4 Data Collection

A structured questionnaire was developed and validated (Cronbach's $\alpha = 0.82$). It included:

- Demographics
- Awareness and usage of AI tools
- Perceptions of legal risks
- Ethical concerns
- Open-ended opinions

3.5 Data Analysis

The IBM SPSS v25 was used to analyze data. Descriptive statistics, chi-square tests and correlation tests were conducted.

4. Results

4.1 Demographic Characteristics

Table 1: Demographic Profile of Respondents (n=384)

Variable	Frequency (%)
Gender	
Male	217 (56.5%)
Female	167 (43.5%)
Age	
25-35 years	128 (33.3%)
36-45 years	162 (42.2%)
>45 years	94 (24.5%)
Education	
Bachelor's	102 (26.6%)
Master's	214 (55.7%)

MPhil/PhD	68 (17.7%)
Sector	
Healthcare	204 (53.1%)
Corporate (non-health)	180 (46.9%)

Interpretation:

The majority of the respondents were mid-career professionals who had postgraduate qualifications. The right mix of healthcare and corporate representatives was obtained.

4.2 Awareness and Use of AI-Based Hiring Tools

Table 2: Knowledge and Use of AI Tools in Recruitment

Variable	Yes (%)	No (%)
Aware of AI-based hiring tools	292 (76.0%)	92 (24.0%)
Currently using AI tools	124 (32.3%)	260 (67.7%)
Received training on AI ethics	61 (15.9%)	323 (84.1%)

Interpretation:

Although most recognize AI hiring tools, one-third of them are using them. Training on ethics is still pathetic.

4.3 Perceived Legal and Ethical Risks

Table 3: Perceived Risks Associated with AI Hiring Tools

Risk Type	Agree (%)	Neutral (%)	Disagree (%)
Risk of data privacy breaches	262 (68.2%)	70 (18.2%)	52 (13.6%)
Algorithmic bias/discrimination	209 (54.4%)	91 (23.7%)	84 (21.9%)
Lack of legal regulation	184 (47.9%)	140 (36.5%)	60 (15.6%)
Accountability in case of error	272 (70.8%)	60 (15.6%)	52 (13.6%)

Interpretation:

The most burning issues are privacy and accountability. Remarkably, almost fifty percent of them consider that there is no governing law in Pakistan.

4.4 Correlation with Educational Level

Table 4: Correlation Between Education and Awareness of Legal Risks

Education Level Aware of Legal Risks (%) p-value			
Bachelor's	32.4%		
Master's	58.3%		
MPhil/PhD	72.1%	<0.01	

Interpretation:

The relationship between higher education and legal risk awareness is quite high, and this short-and-mid-level managerial training should be specialized.

5. Discussion

This research unveils alarming gaps of ethical and legal knowledge of AI-based hiring tools in the managers of Sindh. Most managers are not

trained professionally in AI ethics in spite of the growing usage. The greatest concern was on privacy, discrimination, and accountability which is in line with the findings worldwide [6–10].

These risks are increased by the lack of national regulation. The existing legislation like PECA 2016 has not given specific reference to the algorithmic decision-making in employment. Other countries have also

adopted a policy response to these worries, with the European Union adopting the EU AI Act and the U.S. adopting the Algorithmic Accountability Act [11–13].

The awareness is highly dependent on the level of education, as it has been observed in other developing nations [14, 15]. This highlights the importance of the inclusion of AI ethics in career development and education.

6. Conclusion

Artificial intelligence-powered recruiting systems introduce opportunities as well as numerous ethical-legal issues in Sindh. Although the process of technological implementation is being undertaken, there is poor legal preparedness and ethical literacy. The key to fair and safe AI usage in HR practices is effective regulation and training, as well as awareness of the population.

7. Recommendations

- **Regulatory Framework:** The Government of Pakistan should develop specific policies on AI use in HR, ensuring transparency, fairness, and data rights.
- **Mandatory Training:** Institutions must provide ethical AI training to HR professionals and managers.
- **Auditable Algorithms:** Encourage use of explainable AI models with third-party audits to ensure fairness.
- **Informed Consent:** Job applicants should be informed about AI involvement in hiring and their data usage.
- **Legal Literacy Campaigns:** Promote awareness of digital rights and algorithmic accountability among professionals.

8. Limitations

- Self-reported data may be subject to bias.
- Limited to Sindh; findings may not generalize to other provinces.
- Cross-sectional design precludes causal inference.

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