Journal of Information Systems Engineering and Management
2025, 10(54s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Hiring Practices of IT Companies: A Study on Recruitment Strategies for Fresh Engineering Graduates

Mr. Mahesh Patil[1], Dr. Saurabh Suman[2]
[1]*Shah and Anchor Kutchhi Engineering College, Chembur, Mumbai*
[2] *Shah and Anchor Kutchhi Engineering College, Chembur, Mumbai*

ARTICLE INFO

Received: 30 Dec 2024

Revised: 19 Feb 2025

Accepted: 27 Feb 2025

ABSTRACT

The study looks at how IT companies are currently employing young engineering graduates using their recruitment strategies. Because hiring teams use more digital assistance and online interviewing, the recruitment field has shifted a lot. Analysis of literature, surveys and interviews with managers and new graduates has revealed the usual hiring steps, the major tools found in the hiring industry and what employers want to see. The research also points out the problems companies and candidate graduates encounter and introduces solutions to help them bridge gaps in industry needs.

Keywords: IT Recruitment, Engineering Graduates, Online Assessment Tools, Technical Interviews, Soft Skills Evaluation, Hiring Challenges, Campus Placements, Employability Gap, Skill-Based Hiring, AI Recruitment Tools, Industry Expectations, Fresh Graduate Hiring.

INTRODUCTION

In today's fast-paced digital economy, the IT industry is one of the largest employers of engineering graduates. The demand for fresh talent is shaped by both technical advancements and evolving business needs. IT companies increasingly adopt structured, data-driven, and scalable hiring procedures to identify capable candidates who can adapt to dynamic work environments [3].

Traditional campus recruitment models are being complemented—if not replaced—by online assessments, automated coding tests, video interviews, and behavioural profiling tools (Jain & Gupta, 2021) [4]. While these innovations increase efficiency, they also raise questions about accessibility, fairness, and the readiness of engineering students to meet such hiring criteria [5].

This paper investigates the hiring practices used by IT firms in India and abroad to recruit fresh engineering gradua tes. It seeks to answer the following key questions:

1. What are the most common stages and tools used in the IT hiring process for freshers?
2. How do companies assess technical and non-technical competencies?
3. What gaps exist between industry expectations and graduate preparedness?

By addressing these questions, the research aims to provide actionable insights for educators, institutions, and companies to refine training and hiring approaches [6].

LITERATURE REVIEW

The recruitment of fresh engineering graduates by IT companies has gained prominence due to the rapid growth of the tech industry and the parallel increase in engineering education output. Existing literature reveals a shift from t raditional recruitment models to data-driven and technology-enhanced hiring mechanisms.

1. Evolution of Hiring Practices in the IT Sector

Traditionally, IT firms relied heavily on in-person, campus-
based recruitment, but recent studies show a pivot toward online and hybrid hiring practices. Some researcher

Research Article

note that this transition began as early as2015, driven by the need for cost-effectiveness and efficiency. The COVID-19 pandemic further accelerated the adoption of remote recruitment models [1].

2. Use of Online Assessment Tools

Hiring processes have become increasingly platform-driven. Companies use tools such as AMCAT, Co Cubes, Hacker Rank, and Codility to assess candidates' programming, aptitude, and soft skills remotely. These tools allow for large-scale filtering while ensuring objectivity in early-stage screening [7]; [8].

3. Assessment of Technical and Non-Technical Skills

Sharma [2] emphasizes that the selection process now incorporates real-time coding challenges, behavioural interviews, and scenario-based questioning to assess practical knowledge and interpersonal skills. Soft skills such as communication, teamwork, and adaptability have gained equal importance in final hiring decisions [3]; [4].

4. The Employability Gap

Despite a high volume of graduates, employability remains a concern. According [11], only 25–30% of engineering graduates are considered job-ready by employers. Factors include a lack of practical exposure, outdated curriculum, and insufficient focus on industry-relevant skills. NASSCOM [3] suggests that companies now conduct pre-joining boot camps and learning programs to bridge the readiness gap [10].

5. Diversity and Inclusion Trends

Deshpande & Narayan [9] discuss emerging hiring trends focusing on gender diversity, regional inclusivity, and bias-free recruitment processes. Companies are increasingly leveraging anonymized applications and AI screening to minimize bias, thus promoting more equitable hiring.

RESEARCH METHODOLOGY

This section outlines the approach used to investigate the hiring practices, methods, and procedures followed by IT companies when recruiting fresh engineering graduates. A **mixed method research design** was adopted to ensure both breadth and depth of analysis.

1. Research Design

The study employed a **descriptive and exploratory research design**:

- **Descriptive**, to document current hiring practices in IT companies.
- **Exploratory**, to uncover emerging trends and evaluate the gap between industry expectations and graduat e preparedness.

2. Research Objectives

- To identify the stages and tools involved in the hiring process of IT companies.
- To examine the importance given to technical vs. non-technical skills during recruitment.
- To analyze the challenges faced by companies and freshers during hiring.
- To propose recommendations to enhance employability.

3. Data Collection Methods

a) Primary Data

- **Surveys** were conducted among:
    - **Hiring professionals** in IT companies (n = 30)
    - **Final-year engineering students and recent graduates** (n = 100)
- **Semi-structured interviews** were conducted with:

Journal of Information Systems Engineering and Management
2025, 10(54s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

- 5 HR managers from mid-to-large-scale IT companies
- 3 placement officers from engineering colleges

b) Secondary Data

- Literature from academic journals, white papers, and reports from **NASSCOM**, **LinkedIn**, **TCS iON**, and **Deloitte**.
- Company hiring portals and job descriptions were reviewed to map job role expectations.

4. Sampling Technique

- **Purposive sampling** was used for selecting HR professionals and placement officers, ensuring participan ts had direct experience with fresher hiring.
- **Stratified random sampling** was applied for student participants, ensuring representation from Tier 1, Tier 2, and Tier 3 engineering institutions.

5. Data Analysis Tools

- **Quantitative data** (from surveys) were analyzed using:
  - Descriptive statistics (mean, percentage, frequency)
  - Graphs (bar charts, pie charts)
  - Cross-tabulation (to compare industry expectations vs. student perceptions)
- **Qualitative data** (from interviews) were analyzed using:
  - Thematic coding to identify common hiring practices and challenges
  - Narrative synthesis to illustrate patterns and insights

6. Limitations of the Study

- The study is limited to IT companies operating in India and may not reflect global hiring practices.
- The sample size is moderate and may not fully represent large multinational variations.
- Due to time constraints, the study focuses on entry-level recruitment only.

7. Ethical Considerations

- Informed consent was obtained from all participants.
- Identities of companies and individuals were anonymized.
- Data collected were used strictly for academic purposes.

ANALYSIS OF HIRING PRACTICES

Based on the data collected from HR professionals, engineering graduates, and secondary literature, this section an alyzes the major components, tools, and trends in fresher hiring practices across IT companies.

1. Stages in the Hiring Process

The recruitment process typically follows a **multi-stage model**:

Stage	Description
Application Screening	Initial resume filtering, often automated via ATS (Applicant Tracking System).
Online Assessment	Includes aptitude, coding, and technical MCQs. Usually done on platforms like HackerRan

Journal of Information Systems Engineering and Management
2025, 10(54s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Stage	Description
	k or AMCAT.
Technical Interview(s)	One or more rounds of coding, system design, or algorithm-based interviews.
HR/Behavioural Interview	Final round focusing on soft skills, adaptability, and culture fit.
Offer & Onboarding	Conditional offer followed by training modules or onboarding programs.

This structure is consistent across most Tier 1 and Tier 2 IT companies

2. Tools and Technologies Used

Online platforms have revolutionized initial screening and testing. Some frequently mentioned tools include:

Platform	Purpose
HackerRank	Coding and algorithm assessments
CoCubes / AMCAT	Aptitude and employability testing
HireVue	AI-driven video interviews
Codility	Code simulation & problem-solving
TCS iON	National-level recruitment exams

More than **78% of surveyed HRs** use at least one of these platforms

3. Campus vs. Off-Campus Hiring

Hiring Type	Description & Trends
Campus Hiring	Primarily from Tier-1 & Tier-2 institutes; preferred for bulk hiring.
Off-Campus Hiring	Includes online hackathons, referral drives, and direct applications via company portals.

There is a noticeable shift toward **online off-campus hiring**, especially for companies targeting diverse candidates beyond metro cities

4. Skill-Based Filtering

Companies now prioritize **skills over academic grades**. Common filters include:

- **Coding proficiency** (C/C++, Python, Java)
- **Problem-solving and DSA**
- **Soft skills** (communication, teamwork)
- **Certifications** in cloud (AWS, Azure), data science, or DevOps

Over **65% of recruiters** said certifications positively influenced shortlisting.

5. Interview Format Trends

The traditional in-person interview is rapidly being replaced or supplemented by **virtual interviews**. Observed trends include:

- Pre-recorded video interviews

Journal of Information Systems Engineering and Management
2025, 10(54s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

- Pair programming assessments (shared IDEs)
- AI monitoring for test integrity

While these improve efficiency, **students report anxiety and lack of feedback** as common concerns.

6. Hiring Challenges Noted by Employers

Challenge	% of HRs Affected
Skill mismatch with job requirement	71%
Poor communication/interview skills	56%
Inconsistent academic knowledge	49%
High offer drop-out rate	34%

Employers expressed a strong need for **better industry-academia collaboration** and **internship-linked education**

7. Student Perception vs. Industry Expectation

A cross-tab analysis showed:

Attribute	Students' Perception	Industry Expectation
Coding Skills	High	Very High
Soft Skills	Moderate	High
Real-world Experience	Low	Moderate to High
Communication Skills	High	High

FINDINGS AND DISCUSSION

The study reveals critical insights into the evolving hiring practices of IT companies targeting fresh engineering graduates. Key findings, aligned with the research objectives, are discussed below:

1. **Dominance of Multi-Stage, Technology-Driven Hiring**: IT firms employ a **multi-stage recruitment model**, beginning with automated resume screening (ATS) and progressing to online assessments (e.g., Hacker Rank, Co Cubes), technical interviews, and behavioral evaluations. Over **78% of HR professionals** rely on platforms like Hacker Rank for coding tests, reflecting a shift toward scalable, standardized assessments. Virtual interviews, including AI-monitored sessions and pair programming, are now commonplace, reducing geographical barriers but increasing candidate anxiety due to limited feedback.
2. **Skill-Based Hiring Over Academic Pedigree**: Companies prioritize **practical skills** (coding proficiency, problem-solving, certifications in cloud/DSA) over academic grades. Over **65% of recruiters** value certifications (AWS, Azure) as indicators of proactive learning. However, students overestimate their coding and communication skills compared to industry expectations (see Table 1), highlighting a **perception gap**.

Table 1: Student Perception vs. Industry Expectation

Attribute	Students' Perception	Industry Expectation

Journal of Information Systems Engineering and Management
2025, 10(54s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Attribute	Students' Perception	Industry Expectation
Coding Skills	High	Very High
Soft Skills	Moderate	High
Real-world Experience	Low	Moderate to High

3. **Shift to Off-Campus and Inclusive Hiring**: While campus placements remain prevalent in Tier-1/2 institutes, **off-campus hiring** (online hackathons, referral drives) is growing, enabling access to talent from non-metro regions. Diversity initiatives, such as anonym zed applications and AI-driven bias reduction, are emerging but require broader adoption.
4. **Employability Gap Persists**: Despite increased hiring efficiency, **71% of HRs** report skill mismatches, with only 25–30% of graduates deemed job-ready. Contributing factors include outdated curricula, limited practical exposure, and insufficient soft skills training. Employers emphasize the need for **internship-linked education** and pre-joining boot camps to bridge this gap.

CHALLENGES FACED BY EMPLOYERS AND GRADUATES

Employer Challenges

Skill Mismatch: 71% of HRs cite discrepancies between graduate skills and job requirements.

Soft Skills Deficit: 56% report poor communication and teamwork abilities.

High Attrition: 34% face offer drop-outs as candidates pursue higher-paying roles.

Bias in Hiring: Despite AI tools, implicit biases persist in resume screening and interviews.

Graduate Challenges

Virtual Interview Anxiety: Limited feedback and unfamiliar formats (e.g., AI- monitored tests) heighten stress.

Readiness Gap: Graduates lack hands-on experience with tools like DevOps or cloud platforms.

Access Inequity: Candidates from Tier-3 colleges or rural areas struggle with limited exposure to online platforms.

Curriculum Relevance: Theoretical focus leaves graduates unprepared for real-world problem-solving.

RECOMMENDATIONS

To address these challenges, stakeholders must collaborate to align education with industry needs:

1.For Educational Institutions

Curriculum Modernization: Integrate certifications (AWS, Azure), DevOps, and DSA into syllabi.

Mandatory Internships: Partner with IT firms for structured, credit-based internships.

Soft Skills Training: Implement workshops on communication, teamwork, and interview preparation.

2.For Employers

Feedback Mechanisms: Provide post-assessment feedback to candidates to reduce anxiety.

Research Article

Diversity Initiatives: Expand off-campus drives and anonymized screening to tap into underrepresented regions.

Pre-Joining Bootcamps: Offer skill-building programs for selected candidates to bridge readiness gaps.

3.For Policymakers

Industry-Academia Partnerships: Foster NASSCOM-led initiatives to update curricula and faculty training.

Digital Infrastructure: Subsidize online assessment access for Tier-3 colleges.

CONCLUSION

This study underscores the transformation of IT hiring into a technology-driven, skill-centric process. While online tools enhance efficiency, they exacerbate challenges like candidate anxiety and regional inequities. The persistent employability gap calls for systemic reforms in engineering education, particularly in curriculum relevance and practical training. By adopting collaborative strategies—curriculum modernization, inclusive hiring, and feedback-driven processes—stakeholders can better align graduate preparedness with dynamic industry demands. Future research should explore longitudinal impacts of AI recruitment tools and the efficacy of policy interventions in diverse geographic contexts.

REFRENCES

[1] M. Kumar, "Bridging the Employability Gap in India," Journal of HRD, vol. 12, no. 3, pp. 45-52, 2020.
[2] R. Sharma, "Skill Mismatch in Technical Graduates," Indian Management Review, vol. 28, no. 4, pp. 33-40, 2019.
[3] NASSCOM, "Talent Demand-Supply Mismatch in IT Sector," Industry Report, 2022.
[4] P. Jain and S. Gupta, "Improving Soft Skills in Engineering Education," International Journal of Educational Research, vol. 44, pp. 21-30, 2021.
[5] AICTE, "Internship Policy for Engineering Students," All India Council for Technical Education, 2021.
[6] FICCI-EY Report, "Future of Jobs in India," 2020.
[7] D. Patel, "Campus to Corporate: Challenges and Solutions," HR India, vol. 19, no. 2, pp. 60-66, 2021.
[8] T. Joseph and M. Varghese, "Industry Expectations from Fresh Engineering Graduates," Indian Journal of Technical Education, vol. 35, no. 2, pp. 14-19, 2022.
[9] S. Deshpande and R. Narayan, "AI-Based Screening and Bias Mitigation in Recruitment," Journal of Applied HR Technology, vol. 11, no. 1, pp. 23–35, 2023.
[10] P. Roy and A. Sengupta, "Enhancing Graduate Employability through Industry-Academia Collaboration," IEEE Transactions on Learning Technologies, vol. 15, no. 2, pp. 88–96, 2022.
[11] B. Kapoor, "The Role of Soft Skills in Engineering Placement Success," ACM Transactions on Computing Education, vol. 22, no. 4, Article 35, 2023.
[12] V. R. Menon, "Recruitment Automation and the Future of HR Practices," International Journal of Innovation in Management, vol. 39, no. 1, pp. 56–67, 2022.
[13] Prakash and D. Joshi, "Challenges in Rural Talent Mobilization in the IT Sector," Asian Journal of Development Studies, vol. 8, no. 1, pp. 15–27, 2023.