



## The Impacts Of AI-Driven Automation on the Employability of IT Graduates

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### Abstract

Artificial Intelligence (AI) and automation are transforming the Information Technology (IT) sector in numerous ways. These emerging technologies enhance organizational efficiency by enabling businesses to utilize their resources more effectively. However, the adoption of AI and automation also influences the skill sets expected of graduates and their employability in the IT job market. This study aims to examine the impact of AI-driven automation on the employability of IT graduates, with particular emphasis on the skills required for a successful transition from academia to the workplace. To address the research objectives, a descriptive survey research design was employed. Data were collected from 160 respondents, including current MCA and BCA students and recent graduates using structured questionnaires. The findings reveal that AI has a significant positive influence on employability. Graduates who demonstrate strong AI literacy, problem-solving abilities, adaptability, and the capacity to collaborate effectively with AI systems are highly sought after in the job market. The study also identifies a substantial gap between the competencies imparted through academic programs and the skills expected by employers. Based on the findings, the study recommends that educational institutions revise their curricula to incorporate AI-related competencies, provide experiential learning opportunities, and promote continuous upskilling and reskilling initiatives to prepare graduates for evolving workplace demands. Overall, this study contributes to a better understanding of workforce preparedness in an AI-driven and increasingly automated economy.

**Keywords:** Artificial Intelligence (AI), Automation, Employability, IT Graduates, AI Literacy, Career Readiness, Human-AI Collaboration.

### 1. Introduction

The Information Technology (IT) industry has been at the forefront of AI adoption. Organizations are increasingly utilizing AI applications for software development, cyber security, customer support, data analytics, cloud computing, and business process management. While these advancements create new opportunities for innovation and economic growth, they simultaneously alter the nature of employment and workforce requirements. Traditional job roles are evolving, and employers

increasingly seek graduates equipped with advanced digital competencies, analytical skills, adaptability, and the ability to collaborate effectively with intelligent systems. The growing adoption of AI-driven automation presents both opportunities and challenges for IT graduates. On one hand, AI creates new employment avenues and enhances productivity. On the other hand, automation may reduce demand for routine tasks and intensify competition for high-skilled



positions. Consequently, graduates entering the labour market must possess not only technical expertise but also AI literacy, critical thinking, creativity, problem-solving abilities, and a lifelong learning orientation.

### **1.1.Importance of AI in the IT Sector**

The Information Technology (IT) industry has been at the forefront of AI adoption. Organizations are increasingly utilizing AI applications for software development, cyber security, customer support, data analytics, cloud computing, and business process management. While these advancements create new opportunities for innovation and economic growth, they simultaneously alter the nature of employment and workforce requirements. Traditional job roles are evolving, and employers increasingly seek graduates equipped with advanced digital competencies, analytical skills, adaptability, and the ability to collaborate effectively with intelligent systems. The growing adoption of AI-driven automation presents both opportunities and challenges for IT graduates. On one hand, AI creates new employment avenues and enhances productivity. On the other hand, automation may reduce demand for routine tasks and intensify competition for high-skilled positions. Consequently, graduates entering the labour market must possess not only technical expertise but also AI literacy, critical thinking, creativity, problem-solving abilities, and a lifelong learning orientation.

### **1.2.Problem Statement**

Higher educational institutions play a crucial role in preparing students for emerging workplace demands. However, several studies have reported a mismatch between academic curricula and industry expectations. Many existing curricula continue to emphasize conventional programming and theoretical concepts while providing limited exposure to AI tools, practical applications, and interdisciplinary problem-solving. This discrepancy may negatively influence graduate employability and workforce readiness. Therefore, understanding the impact of AI-driven automation

on the employability of IT graduates is essential for educational institutions, policymakers, employers, and students. There is a need to investigate whether current academic programmes adequately prepare students for AI-enabled workplaces and identify the competencies required to enhance employability in an increasingly automated economy.

### **1.3.Objectives of the Study**

The present study aims to achieve the following objectives:

- To examine the impact of AI-driven automation on the employability of IT graduates.
- To assess the level of AI literacy among IT graduates.
- To identify the competencies required for employability in AI-driven workplaces.
- To examine the gap between academic preparation and industry expectations.
- To suggest strategies for enhancing employability in an AI-driven economy.

### **1.4.Research Hypotheses**

The study is based on the following hypotheses:

- H01: AI literacy has no significant influence on the employability of IT graduates.
- H02: Adaptability has no significant influence on the employability of IT graduates.
- H03: Human-AI collaboration skills have no significant influence on employability.
- H04: Academic preparation has no significant relationship with employability.

## **2. Literature Survey**

### **2.1.AI and Workforce Transformation**

Artificial Intelligence (AI) and automation have significantly transformed industries and reshaped workforce requirements across the world. The increasing adoption of AI technologies has altered the nature of work, creating both opportunities and challenges for employees and organizations. Previous studies indicate that while automation may reduce the demand for routine and repetitive



jobs, it simultaneously generates new employment opportunities that require advanced technical and cognitive skills. David H. Autor (2015) argued that technological advancements often complement human capabilities rather than completely replacing human workers. The study emphasized that the growing use of automation has increased the importance of analytical thinking, creativity, and problem-solving skills in the labour market. Similarly, Erik Brynjolfsson and Andrew McAfee (2017) observed that AI is transforming organizational processes by enhancing productivity, innovation, and operational efficiency. However, they argued that employees must continuously update their skills and competencies to remain relevant in an increasingly automated work environment[1].

### **2.2. AI and Employability Skills**

James Bessen (2019) reported that AI adoption tends to increase the demand for workers possessing advanced technical, analytical, and problem-solving abilities. The study highlighted that future employees must develop digital competencies and continuously adapt to technological changes to sustain employability. The World Economic Forum (2023) identified analytical thinking, technological literacy, adaptability, resilience, and lifelong learning as essential competencies for future employment. These findings suggest that employability in the digital era extends beyond technical knowledge and includes soft skills and adaptability. Furthermore, Cristian B. Frey and Michael A. Osborne (2017) highlighted that occupations involving routine tasks are highly susceptible to automation, whereas jobs requiring creativity, critical thinking, and interpersonal interaction are less likely to be automated. Consequently, graduates need to develop higher-order cognitive skills to remain competitive in the labour market.

### **2.3. AI and Higher Education**

In the educational context, Sabina A. D. Popenici and Sharon Kerr (2017) emphasized the need for higher educational institutions to redesign curricula

by integrating AI-related competencies, practical training, and experiential learning opportunities. Their findings suggest that universities play a crucial role in preparing students for technology-driven workplaces. Several researchers have also emphasized the[2] importance of aligning academic curricula with industry requirements. Educational institutions are increasingly expected to provide students with exposure to AI tools, project-based[3] learning, internships, and industry collaborations to improve workforce readiness and employability[4].

### **2.4. Research Gap**

Although previous studies have extensively examined AI adoption, automation, and future employment trends, limited empirical research has specifically investigated the impact of AI-driven automation on the employability of IT graduates, particularly[5] within the Indian higher education context. Furthermore, relatively few studies have explored the combined influence of AI literacy, adaptability, and human-AI collaboration on graduate employability. Therefore, the present study seeks to examine these factors among BCA and MCA students and recent graduates to better understand workforce preparedness in an AI-driven economy[6].

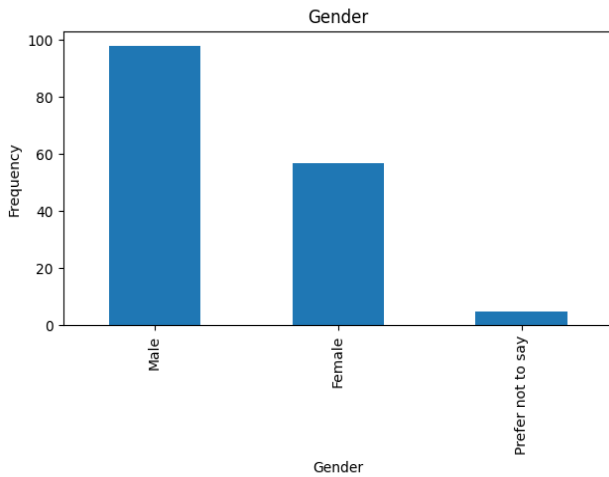
## **3. Results And Discussion**

### **3.1. Descriptive Analysis**

The demographic analysis revealed that the respondents represented both BCA and MCA programmes, thereby ensuring adequate representation of undergraduate and postgraduate students in the study. Such diversity strengthens the generalizability of the findings and provides a comprehensive understanding of employability perceptions[7] across different academic levels. Figure 1 presents the gender distribution of respondents participating in the study. The distribution demonstrates adequate representation of both male and female respondents, ensuring balanced perspectives regarding AI-driven employability. As shown in Figure 1 Gender Distribution of Respondents Participating in the

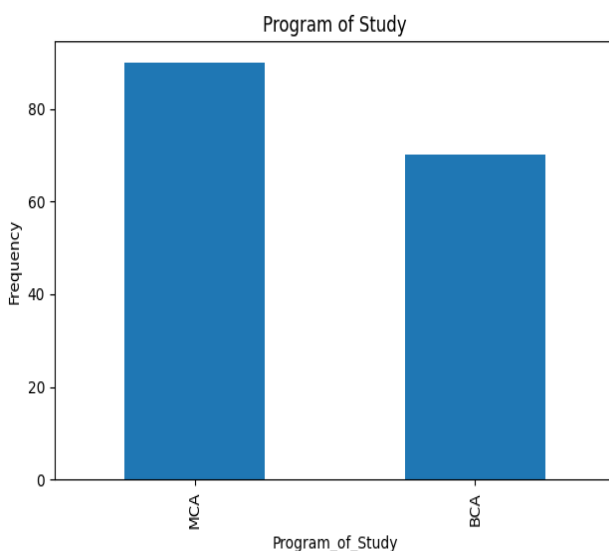
Study

(BCA/MCA)



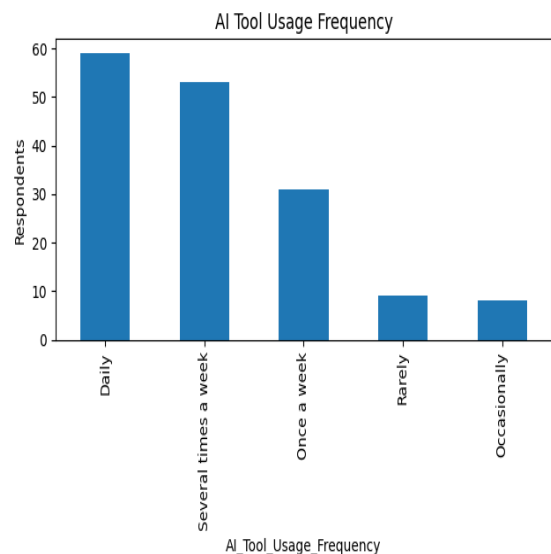
**Figure 1 Gender Distribution of Respondents Participating in the Study**

The programme-wise distribution of respondents is illustrated in Figure 2. The representation of both BCA and MCA[8] students enables comparative insights regarding employability perceptions across undergraduate and postgraduate programmes As shown in Figure 2 Distribution of Respondents According to Programme of Study (BCA/MCA)



**Figure 2 Distribution of Respondents According to Programme of Study**

The descriptive statistics indicate a high level of awareness regarding AI technologies among respondents. The mean score for AI familiarity was found to be high, suggesting that most students possess basic knowledge of AI concepts and applications.[9] Similarly, respondents reported frequent use of AI tools for academic and learning purposes, indicating the growing integration of AI technologies into educational activities. The frequency of AI tool usage among respondents is depicted in Figure 3. The findings reveal that a majority of respondents frequently utilize AI applications for academic learning, problem-solving, and skill development activities. This demonstrates the increasing acceptance and adoption of AI technologies among students,As shown in Figure 3 Frequency of AI tool usage among respondents[10].

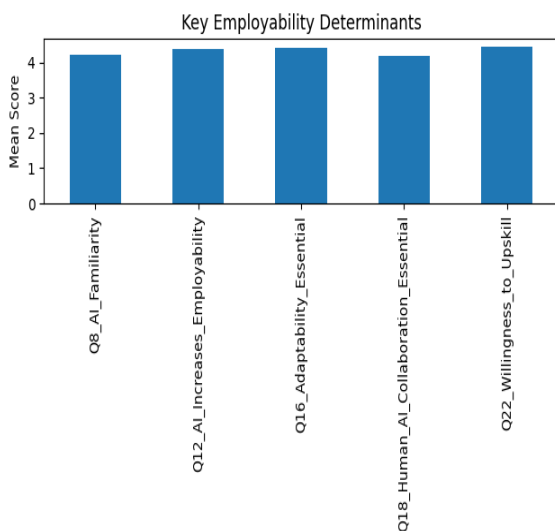


**Figure 3 Frequency of AI tool usage among respondents**

A particularly noteworthy finding concerns employability perceptions. Respondents strongly agreed that AI skills significantly improve job prospects and career opportunities. The high mean

values associated with employability-related variables demonstrate that students perceive AI competencies as essential for securing employment in the contemporary IT industry. The mean scores of major employability determinants are presented in Figure 4. Among the factors examined, willingness for continuous upskilling and adaptability recorded the highest mean values, emphasizing the importance of lifelong learning in AI-driven workplaces. As shown in Figure 4 Mean scores representing key determinants of employability in AI-driven workplaces [11].

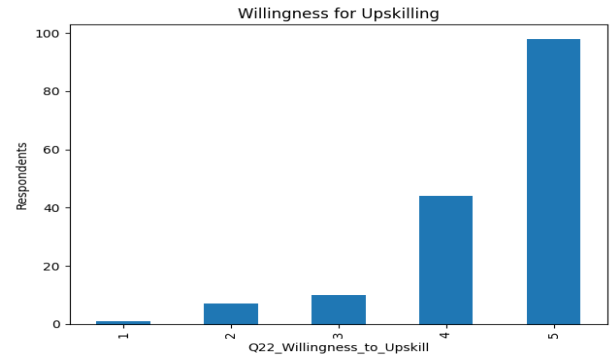
**Figure 4 Mean scores representing key determinants of em**



**employability in AI-driven workplaces**

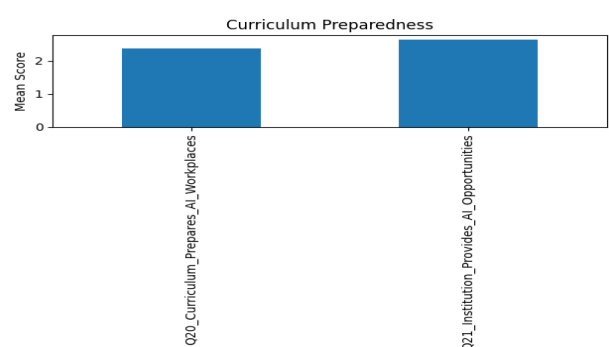
The findings further reveal that adaptability and continuous learning are considered critical competencies in AI-driven workplaces. The respondents acknowledged that rapid technological advancements necessitate ongoing upskilling and reskilling. This observation aligns with current industry trends emphasizing lifelong learning and workforce agility. Respondents also demonstrated strong willingness to continuously upgrade their knowledge and acquire emerging technological competencies. Figure 5 illustrates the respondents'

willingness to engage in continuous upskilling and reskilling activities.



**Figure 5 Respondents' willingness to engage in continuous upskilling and reskilling activities**

However, a relatively low mean score was observed for curriculum preparedness. Many respondents expressed concerns that existing academic programmes do not adequately prepare graduates for AI-enabled work environments. This finding highlights a substantial curriculum-industry gap and suggests the need for curriculum revision and stronger collaboration between educational institutions and industry. The perceived curriculum preparedness for AI-driven workplaces is shown in Figure 6. The comparatively lower mean scores indicate that respondents believe current educational programmes require substantial revision to address evolving industry expectations. As shown in Figure 6 Respondents' perceptions regarding curriculum preparedness for AI-enabled workplaces.



**Figure 6 Respondents' perceptions regarding curriculum preparedness for AI-enabled**



## workplaces

### 3.2. Discussion

The findings of this study support the argument that AI-driven automation positively influences employability among IT graduates. The positive perception of AI literacy and its relationship with employability is consistent with previous studies indicating that AI competencies enhance workforce competitiveness and career readiness. The study demonstrates that graduates possessing AI literacy, problem-solving skills, adaptability, and human-AI collaboration capabilities are better positioned to meet evolving employer expectations. Rather than replacing human workers entirely, AI appears to complement human capabilities by automating repetitive tasks and creating demand for advanced cognitive and interpersonal competencies. The significant emphasis placed on adaptability reflects the dynamic nature of the modern workplace. As AI technologies continue to evolve, graduates must continuously update their knowledge and acquire emerging technical skills. Consequently, employability is increasingly determined by an individual's ability to learn, adapt, and innovate. The observed curriculum gap has important implications for higher education institutions. Universities should redesign curricula to include AI fundamentals, machine learning concepts, ethical AI practices, data analytics, and experiential learning opportunities. Industry-academia partnerships, internships, certification programmes, and project-based learning initiatives can further strengthen workforce preparedness. Overall, the findings suggest that successful integration into AI-driven workplaces requires a holistic combination of technical expertise, digital literacy, adaptability, and lifelong learning orientation.

### Conclusion

Artificial Intelligence and automation are fundamentally transforming employment patterns within the Information Technology sector. The findings of this study reveal that AI-driven automation has a significant influence on the

employability of IT graduates. Graduates possessing AI literacy, adaptability, problem-solving abilities, and human-AI collaboration skills demonstrate greater confidence regarding employment opportunities and career readiness. The study further identifies a considerable gap between academic preparation and industry expectations, indicating that existing educational programmes may not sufficiently equip students with competencies required in contemporary workplaces. Therefore, educational institutions must proactively redesign curricula, integrate AI-related competencies, and promote experiential learning approaches. Continuous upskilling and reskilling have emerged as essential strategies for sustaining employability in an increasingly automated economy. Policymakers, higher education institutions, and industry stakeholders should collaboratively develop initiatives aimed at enhancing workforce preparedness and supporting lifelong learning. In conclusion, AI should not be viewed solely as a disruptive force but rather as an enabler of new opportunities. Graduates capable of effectively leveraging AI technologies while demonstrating adaptability and innovation are likely to achieve long-term success in the evolving digital economy.

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