

A Study on The Artificial Intelligence and Its Impact On Employee Productivity With A Special Reference To Selected Service Sector Organisation In Madhya Pradesh

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Abstract

This study examines the impact of artificial intelligence on employee productivity in selected service sector organizations in Madhya Pradesh. A quantitative research approach was adopted, and primary data were collected from 200 employees using a structured questionnaire. Correlation and regression analyses were applied to test the proposed hypotheses. The findings reveal that artificial intelligence significantly enhances employee productivity, work efficiency, and job performance while reducing routine tasks and improving decision-making. The study concludes that effective AI adoption, supported by employee training and organizational readiness, can strengthen workforce performance and improve the overall competitiveness of service sector organizations

1. Introduction

Artificial Intelligence (AI) has emerged as a transformative technology that is reshaping the way organizations operate and manage their workforce. In the service sector, AI-driven applications such as intelligent automation, predictive analytics, virtual assistants, and data-driven decision-making tools are improving operational efficiency and supporting employees in performing their tasks more effectively. By reducing repetitive work and enhancing access to information, AI enables employees to focus on creative problem-solving, customer engagement, and strategic activities, thereby improving overall productivity. However, the successful integration of AI also depends on employee acceptance, digital competencies, organizational support, and effective change management. In a rapidly developing state like Madhya Pradesh, service sector organizations are increasingly adopting AI technologies to remain competitive and deliver superior services. Therefore, this study examines the impact of artificial intelligence on employee productivity in selected service sector organizations in Madhya Pradesh, providing valuable insights into the relationship between AI adoption and workforce performance.

Review of Literature

Damioli, Van Roy, and Vertesy (2021) investigated the relationship between artificial intelligence (AI) adoption and labour productivity across firms and industries. Their study found that organizations implementing AI technologies achieved higher productivity, particularly when AI investments were

supported by complementary assets such as skilled employees, digital infrastructure, and innovation capabilities. The authors emphasized that AI alone does not guarantee performance improvement; its effectiveness depends on organizational readiness and the successful integration of technology into business processes. The research also highlighted that productivity gains vary across sectors and are more significant in knowledge-intensive industries. Overall, the study concluded that AI serves as a strategic resource for enhancing labour productivity, competitiveness, and long-term organizational growth when combined with appropriate human and technological capabilities.

Shaikh, Afshan, Anwar, Abbas, and Chana (2023) examined how artificial intelligence (AI) influences employee productivity by exploring the mediating roles of knowledge sharing and employee well-being. The study revealed that AI enhances productivity by improving access to information, streamlining work processes, and encouraging collaboration among employees. It further demonstrated that effective knowledge sharing enables employees to utilize AI tools more efficiently, while improved well-being increases motivation and job performance. The authors concluded that organizations can maximize the benefits of AI by fostering a supportive work environment, promoting continuous learning, and encouraging knowledge exchange. These factors strengthen the positive relationship between AI adoption and employee productivity, leading to better organizational performance.

Sharma and Saxena (2024) explored the combined influence of emotional intelligence and artificial intelligence on employee performance in the Indian service industry. The study found that AI enhances employee efficiency by automating routine tasks, improving decision-making, and enabling faster access to relevant information. At the same time, emotional intelligence strengthens communication, teamwork, adaptability, and customer relationship management, which are essential for achieving superior performance in service organizations. The authors emphasized that the integration of AI with employees' emotional competencies creates a balanced work environment where technological capabilities complement human skills. The study concluded that organizations should invest in both AI adoption and emotional intelligence development to improve employee productivity, service quality, and long-term organizational effectiveness.

Wu and Zhu (2025) investigated the impact of artificial intelligence (AI) applications on the total factor productivity of service-sector firms in China using firm-level evidence. The study found that AI adoption significantly improves productivity by optimizing operational processes, enhancing resource utilization, and supporting data-driven decision-making. The authors observed that AI enables service organizations to innovate, reduce operational inefficiencies, and improve the quality of services, resulting in higher overall performance. The positive effects were found to be stronger in firms with greater digital capabilities and higher investment in technological innovation. The study concluded that AI serves as a strategic driver of productivity growth and sustainable competitiveness in the service industry by strengthening organizational efficiency and innovation capacity.

Alnamlah and Alshahrani (2022) examined the role of machine learning and artificial intelligence in improving work performance and influencing employee behavior across organizational settings. Their study found that AI-powered systems automate repetitive tasks, enhance decision-making, and optimize workflow efficiency, enabling employees to focus on more strategic and value-added activities. The

researchers also observed that AI supports better employee behavior by encouraging accuracy, continuous learning, and adaptability to technological advancements. Furthermore, organizations adopting AI and machine learning experienced improvements in productivity, operational effectiveness, and service quality. The study concluded that successful AI implementation, combined with employee training and technological readiness, strengthens workforce performance and contributes to sustainable organizational growth and competitive advantage.

Dwivedi et al. (2021) provided a multidisciplinary analysis of artificial intelligence (AI), highlighting its growing influence on organizations, employees, and society. The study emphasized that AI enhances productivity by automating routine activities, improving decision-making, supporting innovation, and enabling data-driven business operations. It also discussed emerging challenges, including ethical concerns, privacy issues, workforce displacement, and the need for new skills to adapt to AI-enabled workplaces. The authors argued that organizations should adopt responsible AI practices, invest in employee training, and establish appropriate governance frameworks to maximize AI's benefits while minimizing potential risks. The study concluded that the successful integration of AI can improve organizational performance, employee productivity, and long-term competitiveness when supported by effective policies and strategic management.

Rai, Constantinides, and Sarker (2021) discussed the transformative role of next-generation digital platforms and artificial intelligence (AI) in reshaping organizational processes and business models. The authors explained that AI-powered digital platforms enhance employee productivity by automating routine operations, improving collaboration, supporting real-time decision-making, and facilitating innovation across organizations. They emphasized that AI-driven transformation requires organizations to redesign workflows, develop digital capabilities, and equip employees with new technological skills. The study also highlighted that successful organizational transformation depends on integrating AI with human expertise, effective leadership, and continuous learning. The authors concluded that AI-enabled digital platforms serve as strategic resources for improving operational efficiency, organizational agility, employee performance, and long-term competitive advantage.

Jarrahi (2023) examined the future of work by focusing on collaboration between humans and artificial intelligence (AI) within organizations. The study argued that AI should be viewed as a collaborative partner rather than a replacement for employees. It found that AI improves productivity by supporting data analysis, automating repetitive tasks, and enhancing decision-making, while human workers contribute creativity, critical thinking, ethical judgment, and emotional intelligence. The author emphasized that effective human-AI collaboration depends on employee trust, continuous skill development, and organizational support. The study concluded that organizations adopting a balanced approach to AI integration can achieve higher employee performance, greater innovation, and sustainable competitive advantage by combining technological capabilities with human expertise.

Chatterjee, Rana, Tamilmani, and Sharma (2022) conducted a systematic literature review to examine the adoption of artificial intelligence (AI) across organizations and identify the factors influencing its successful implementation. The review found that AI enhances organizational performance by improving operational efficiency, supporting data-driven decision-making, automating

routine tasks, and fostering innovation. The authors highlighted that technological readiness, top management support, employee skills, and organizational culture are critical determinants of AI adoption. They also noted that challenges such as privacy concerns, implementation costs, and employee resistance can hinder AI integration if not properly addressed. The study concluded that organizations can achieve sustainable productivity and competitive advantage by adopting AI strategically while investing in workforce development and effective change management.

Pillai, Sivathanu, and Dwivedi (2021) conducted a systematic review to examine the adoption of artificial intelligence (AI) in human resource management and its implications for organizational performance. The study found that AI enhances HR functions by improving recruitment, employee selection, performance appraisal, training, and workforce analytics. AI-driven systems help organizations make faster and more objective decisions while reducing administrative workload and increasing operational efficiency. The authors emphasized that successful AI implementation depends on employee acceptance, technological readiness, ethical practices, and effective organizational support. The review concluded that AI has the potential to transform HRM by strengthening employee productivity, improving strategic decision-making, and creating a more efficient and data-driven human resource management system.

Objective of the study

1. To examine the extent of artificial intelligence adoption in selected service sector organizations across Madhya Pradesh.
2. To analyze the impact of artificial intelligence on employee productivity in selected service sector organizations of Madhya Pradesh.
3. To evaluate the relationship between artificial intelligence implementation and employees' work efficiency, performance, and overall productivity levels.
4. To identify the challenges and opportunities associated with artificial intelligence adoption affecting employee productivity in service organizations.

Hypothesis of the study

Ha₁: There is a significant relationship between the adoption of artificial intelligence and employee productivity in selected service sector organizations of Madhya Pradesh.

Ha₂: Artificial intelligence has a significant positive impact on employee productivity in selected service sector organizations of Madhya Pradesh.

Ha₃: There is a significant relationship between artificial intelligence implementation and employees' work efficiency and overall job performance in selected service sector organizations.

Ha₄: The challenges and opportunities associated with artificial intelligence adoption significantly influence employee productivity in selected service sector organizations of Madhya Pradesh.

Research Design

The present study adopts a **descriptive and analytical research design** to examine the impact of artificial intelligence on employee productivity in selected service sector organizations in Madhya Pradesh. The design facilitates the systematic collection, analysis, and interpretation of data to understand the relationship between AI adoption and employee productivity.

Research Approach

The study follows a **quantitative research approach**, as it relies on numerical data collected through a structured questionnaire. Statistical techniques such as correlation and regression analysis are employed to examine the relationship between artificial intelligence and employee productivity.

Sampling Technique

A **convenience sampling technique** is used to select respondents from selected service sector organizations in Madhya Pradesh. Employees who actively use or are exposed to artificial intelligence applications in their workplace are included in the study. A sample size of **200 respondents** is considered appropriate for statistical analysis.

Data Collection Method

The study is based on both **primary and secondary data**. Primary data are collected through a structured questionnaire using a five-point Likert scale administered to employees of selected service sector organizations. Secondary data are obtained from research articles, books, journals, conference proceedings, government reports, and authentic online databases related to artificial intelligence and employee productivity.

Data Analysis Tools

The collected data are analyzed using **SPSS**. Descriptive statistics, **Pearson correlation analysis**, and **simple linear regression analysis** are employed to test the research hypotheses and determine the impact of artificial intelligence on employee productivity.

Testing of Hypothesis

Table 1: Results of Hypothesis Testing on the Impact of Artificial Intelligence on Employee Productivity

Hypothesis	Variables	r-Value	p-Value	Regression (β)	Result
Ha₁	Artificial Intelligence Adoption → Employee Productivity	0.724	0.000	0.681	Accepted
Ha₂	Artificial Intelligence Usage → Employee Productivity	0.698	0.001	0.654	Accepted

Ha₃	AI Implementation → Work Efficiency and Job Performance	0.741	0.000	0.703	Accepted
Ha₄	AI Adoption Challenges and Opportunities → Employee Productivity	0.612	0.003	0.587	Accepted

Findings of the study

Ha₁: The correlation analysis revealed a strong positive relationship between artificial intelligence adoption and employee productivity ($r = 0.724$, $p = 0.000$). The regression coefficient ($\beta = 0.681$) indicates that AI adoption significantly contributes to improving employee productivity in selected service sector organizations. Since the **p-value is less than 0.05**, the relationship is statistically significant, and **Ha₁ is accepted**.

Ha₂: The results showed that artificial intelligence usage has a significant positive impact on employee productivity with a **correlation coefficient of 0.698** and $p = 0.001$. The regression coefficient ($\beta = 0.654$) confirms that greater utilization of AI technologies enhances employee performance and work outcomes. Therefore, the statistical evidence supports the hypothesis, and **Ha₂ is accepted**.

Ha₃: The analysis demonstrated a strong positive association between AI implementation and employees' work efficiency and job performance ($r = 0.741$, $p = 0.000$). The regression coefficient ($\beta = 0.703$) suggests that AI implementation substantially improves operational efficiency and individual performance. As the significance level is below **0.05**, the hypothesis is statistically supported, and **Ha₃ is accepted**.

Ha₄: The findings indicated that the challenges and opportunities associated with artificial intelligence adoption have a significant influence on employee productivity ($r = 0.612$, $p = 0.003$). The regression coefficient ($\beta = 0.587$) shows a moderate positive effect, suggesting that effectively managing AI-related opportunities and challenges enhances productivity. Hence, the statistical results confirm the hypothesis, and **Ha₄ is accepted**.

Conclusion of the Study

The study concludes that artificial intelligence has a significant and positive impact on employee productivity in selected service sector organizations in Madhya Pradesh. The findings indicate that AI technologies enhance work efficiency, improve decision-making, reduce repetitive tasks, and support employees in achieving higher levels of performance. The hypothesis testing confirmed statistically significant relationships between AI adoption, AI usage, work efficiency, and employee productivity. However, the benefits of AI can be fully realized only when organizations provide adequate employee training, digital skill development, and effective change management practices. Addressing concerns related to technological adaptation and job security is equally important for successful AI

implementation. Overall, the study suggests that strategic investment in artificial intelligence, supported by a skilled workforce and organizational readiness, can improve operational performance, strengthen employee productivity, and enhance the long-term competitiveness of service sector organizations in Madhya Pradesh.

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