



Artificial Intelligence, Workforce Adaptation, and Organizational Performance: Empirical Evidence from the IT and Service Industries of Maharashtra.

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Cite This Paper as: Ms. Vaibhavi Ghate , Dr. Sushant Waghmare (2026) Artificial Intelligence, Workforce Adaptation, and Organizational Performance: Empirical Evidence from the IT and Service Industries of Maharashtra..The Journal of African Development 1, Vol.7, No.1, 1189-1195

KEYWORDS

Artificial Intelligence, Workforce Adaptation, Organizational Performance, Digital Transformation, Employee Reskilling, IT Industry, Service Industry.

ABSTRACT

In the modern world, Artificial Intelligence (AI) is factually managing the organization processes, the staffing and the performance on the business floor globally. The purpose of this research is to study the response of organizations to AI, their adoption and the impact of AI on the organizational performance of the organizations engaged in IT and service sectors in Maharashtra. The technique involves using quantitative research and the data were primary data which was collected from a structured questionnaire filled by 450 employees and people from manager level. Descriptive statistics were used to summarize the data and a data analysis was conducted using SEM. The findings indicate that artificial intelligence has a considerable effect on the adaption workforce because of its high potential to upskill the employees, create a culture of lifelong learning and help the employees adapt to the workload and new job demands. According to the study, ability of the workforce to adapt has a positive impact on the organizational performance in terms of productivity, innovation, operational efficiency and effective decision-making. In addition, workforce adaption mediates AI adoption and organizational performance only partially. The Working Paper highlights the impact of artificial intelligence on the job market. Therefore, the study substantiates the requirement of blending technology advancement and track progression in employee adaptation programs for success and sustainability...

1. INTRODUCTION

The AI has become the most ubiquitous and influential technique of the Fourth Industrial Revolution. The AI Impact on Organizational Processes, Workforces and Business Models According to a report, employment experts note that a result of these impacts will be the impact on duties, competencies, procedures as well as the worker/employer relationship. Many recent researches discussed AI adoption and the changes in working culture, relationships, skills of organizations. Artificial Intelligence is now not only used to automate routine processes in organizations but also its usage is seeping into strategic decision making, innovation, Customer Relationship Management, Talent Management, and many other processes in the organization. In other words, there is a sweeping change happening in organizations all over the world. With changing roles and skills and processes, as well as the employee/employer relationship. These transformations introduce fresh opportunities and challenges to organizations' sustainable development.

The adoption of AI in organizational systems has triggered worries about job replacement, the need for new skills, employee reluctance, and the uncertainty of the workplace. But, recent studies find that AI should be considered more of an “augmentive” tool than a “substitutive” one, which would allow workers to focus on higher level thinking, creativity, and strategic tasks while automating repetitive work. With the rise of AI-driven transformation, adapting workforces has emerged as one of the most crucial factors for organizations to consider for successful technology implementation. To be relevant in evolving workplaces, employees need to acquire new skills in the area of digital competence, AI literacy, problem solving and agile learning. Research has highlighted the importance of workforce adaption processes, such as reskilling, upskilling, ongoing learning, and job crafting, in the context of how employee will engage and adapt to AI technologies.

Factors beyond investments in technology also have an impact on organizational performance in an AI era: developing the skills of human resources for the technological developments. Studies show that companies that effectively leverage AI and enable employees to be adaptable experience improved efficiency, innovation, productivity, employee engagement, and competitiveness. However, when the workplace isn't prepared, resistance to change, lack of implementation, and less effective organizations. To this end, there is a growing interest among scholars and practitioners in the interaction of AI adoption, workforce adaptation and organizational performance.

Information Technology (IT) and services industries are among the most AI-driven sectors in the world and also play a big role in Maharashtra's economy. The city of Pune, Mumbai, and Nagpur have become prominent centers of digital innovation, software development, business process outsourcing, fintech, and AI businesses. These industries are experiencing rapid adoption of AI technologies, calling for immense changes in the skill set of workers and organizations, which makes Maharashtra an interesting matrix for analyzing the adaptation of workers and organizations to AI-fuelled change. While AI continues to play a growing role in organizations in India, empirical studies on how workers are adapting and what the consequences are on organizational performance are scarce, especially in a region as diverse as Maharashtra.

In light of the aforementioned, the present study attempts to examine the relationship of Artificial Intelligence Adoption, Workforce Adaptation mechanisms and Organizational Performance in IT and Services Industry of Maharashtra. The study's researchers think the AI will help managers, policymakers and human resources in adopting better decision on the use of AI in the workforce. Further, it will describe insight on how AI is transforming and reinventing work.

2. LITERATURE REVIEW

AI has significantly reshaped the landscape of work by streamlining repetitive tasks, boosting human capabilities, and even driving the invention of new job roles. Murire et al. (2024) found that AI has a transformative effect on organizational work practices and also demands structural and cultural changes to reap the maximum organizational benefits. Likewise, Venugopal et al. (2024) found that AI can enhance human resource management practices for increased recruiting effectiveness, retention, performance management, and need for restructuring and skill development of the workforce.

Babashahi et al. (2024) highlighted the mismatch between the skills already possessed by the current workforce and the needed skills for careers involving AI, and reminded people of the need to continue learning and developing their skills. Through their review, they concluded that analytical thinking, AI literacy, digital collaboration, and problem-solving are among the essential competencies needed to be job ready for the future.

Workforce adaptation involves adaptation of the workforce's skills, behaviours, attitudes & working practices to technological change. Motivation augments employees' adaptability to new work conditions and environment by offering them incentives for conducting job crafting behaviors, as reported by Sha et al. (2025). AI knowledge is proven to be a strategic asset for improving the ability of employees to actively change with the technology.

Likewise, Liu et al. (2025) found that the implementation of AI in organizations can enhance employee job crafting and adaptive work behaviors. Staff members will be more willing to adopt AI technologies and innovate their roles and responsibilities when they are actively involved in making the changes for the organization.

Farooq et al. (2025) continued by stating that proper support systems in place, employee training, and clear communication channels are necessary for the improved employee experience with the implementation of AI. The trust of employees and the organizational culture were mentioned as important factors that make successful adaptation.

The embrace of AI often brings vast changes in the way a business is organized, making the changes in leadership, organizational structure, and priorities significant. According to a study on AI-driven organizational change, adopting AI requires proper change management and employee engagement strategies to be successful. Cultures that foster experimentation, learning, and innovation are essential for organizations using AI to embrace it. AI-adopting organizations need to cultivate supportive cultures that encourage experimentation, learning, and innovation.

According to Oliveira et al. (2025), adopting AI alters the nature of jobs and generates novel competency demands, resulting in the eventual formation of hybrid man-AI job systems. The results found that to achieve the full benefits of AI, organizations' workflows need to be reshaped and workers need to be trained.

Moreover, research on organization adaptation strategies highlights the value for firms that invest in reskilling their employees, enhancing their capabilities and adopting technological governance strategies as well as those only concerned with the adoption of technology.



Organizational performance is the degree to which organizations meet their strategic goals or objectives for the areas of productivity, innovation, profitability, operational efficiency and employee engagement. AI research shows that the organizations that adopt AI tend to have a positive correlation with their organization outcomes. Dubey is concerned that AI improves the adaptability of organizations, quality of decisions, engagement of employees and effectiveness of operations including the performance of the organization.

Likewise, Gemmano et al. (2026) highlighted the importance of employee well-being and workforce readiness on the performance gains from implementing AI. Better sustainable improvements are gained when organizations balance technological innovations with employee support measures.

Studying the talent development with the help of AI has revealed that between the use of AI and the success of the organization, is the core readiness and resilience of the workforce. Well-considered talent development practices can unlock the promise of AI technologies, without losing engagement and productivity.

3. RESEARCH GAP

The extensive research undertaken on the use of AI has looked at how workers adapt to using AI, digital transformation and organizational performance effects. The problem is that the theoretical literature is quite high in each of these phenomena; however, only limited empirical literature has analysed the interactions of adoption of ai, adaptation strategies and organizational performance in a single model. Only conceptual reviews, systematic reviews, and western context investigations of paper literature generally occurred in research. There has been emergence gaps in literature on the case of developing economy which is region-specific evidence. Gaps in literature have emerged which focus on specific industry, IT and service sector field empirical studies in Maharashtra. The development of an ecosystem is required to encourage the growth of AI that will take place over the years. Taking this into consideration, the present study aims to study the mediating role of employee adaptation in the relationship between adoption of AI tools and organizational performance in IT and service sector organization in Maharashtra.

4. OBJECTIVES:

This study is designed to understand the level of AI adoption in the IT and service sector, the effect of AI on workforce changes, factors employees face in adapting to AI, organizational performance as influenced by workforce adaptation, and the connection between factors affecting AI implementation, employee adaptability, and organizational outcomes of AI implementation.

5. METHODOLOGY

The research design of this study is quantitative, descriptive and explanatory with the intention of investigating the relationship of the adoption of Artificial Intelligence with adapting the workforce and organizational performance in the IT and service sectors of Maharashtra. Primary data will be generated by using structured questionnaire that will be administered to the employees, managerial staff of AI enabled organizations. Stratified random sampling will be used to be able to have the required number of samples from both the IT sector and service sector. Accumulated data will be used to test the relationships between the study variables proposed, assess the effect of workforce adaptation on organizational performance, and confirm or refute the proposed directions of those relationships.

6. RESULT AND ANALYSIS

The current research focuses on the implications for the adaptation of the IT and service sector workforce in Maharashtra in light of the use of Artificial Intelligence (AI). A sample of 450 employees and managerial personnel were surveyed. The analysis will test the connections between the variables in the study and the degree to which workforce adaptation helps organizational performance in an AI-focused workplace.

7. RELIABILITY ANALYSIS

The reliability of the instrument was measured using Cronbach's Alpha. All the constructs attained values above 0.70 which indicated satisfactory internal consistency and reliability of the scale.

Table 1 Reliability Statistics

Construct	Number of Items	Cronbach's Alpha
AI Adoption	8	0.892
Workforce Adaptation	10	0.918
Organizational Performance	8	0.887
Overall Scale	26	0.911

The values of Alpha were between 0.887-0.918. This shows that the quality of research instrument was excellent. The data is therefore appropriate for further statistical analysis.

Table 2 Mean and Standard Deviation

Variable	Mean	Standard Deviation
AI Adoption	4.12	0.64
Workforce Adaptation	3.96	0.71
Organizational Performance	4.08	0.67

Organizational Performance has a mean score of 4.08 which is encouraging for the status of the AI adoption and its impact on organizational performance. AI Adoption award a mean score of 4.12, which indicates a high degree of AI adoption among organizations. The Workforce Adaptation score was

Table 3 Correlation Matrix

Variables	AI Adoption	Workforce Adaptation	Organizational Performance
AI Adoption	1.000	0.741**	0.695**
Workforce Adaptation	0.741**	1.000	0.786**
Organizational Performance	0.695**	0.786**	1.000

According to the results from the correlation matrix, there are significant positive correlations on all variables (see Table 4.5). The correlation between AI Adoption and Workforce Adaptation is strong and positive ($r = 0.741$, $p < 0.01$). There is a strong and positive correlation between AI Adoption and Organization Performance ($r = 0.695$, $p < 0.01$).

Table 4 Convergent Validity

Construct	AVE	Composite Reliability
AI Adoption	0.687	0.921
Workforce Adaptation	0.704	0.936
Organizational Performance	0.671	0.914

All AVE values were greater than 0.50 and Composite Reliability values were greater than 0.70 indicating adequate convergent validity.

Table 5 Hypothesis Testing

Hypothesis	Relationship	Path Coefficient (β)	t-value	p-value	Result
H1	AI Adoption → Workforce Adaptation	0.742	18.941	0.000	Supported
H2	Workforce Adaptation → Organizational Performance	0.618	13.752	0.000	Supported
H3	AI Adoption → Organizational Performance	0.294	5.864	0.000	Supported

As per the results, AI Adoption significantly affects Workforce Adaptation ($\beta = 0.742$, $p < 0.001$). Moreover, organizational performance is affected greatly by workforce adaptation with ($\beta = 0.618$) and ($p < 0.001$).

Table 6 Indirect Effects

Path	Indirect Effect	t-value	p-value
AI Adoption → Workforce Adaptation → Organizational Performance	0.458	11.286	0.000

The mediation analysis indicates that Workforce Adaptation partially mediates the relationship between AI Adoption and Organizational Performance. Organizations gain higher levels of performance when people adapt well to AI and changes.

Table 7 R² Values

Endogenous Variable	R ²
Workforce Adaptation	0.551
Organizational Performance	0.682

AI adoption influences workforce adaptation by 55.1 percent, and the combined influence of AI adoption and workforce adaptation on organizational performance is 68.2 percent. The proposed model's predictive ability is indicated by these scores.

Maharashtra's IT and services workforce is undergoing a major transformation due to the adoption of AI, a study reveals. Employees with sufficient training, reskilling and organizational support are more likely to exhibit a significant level of adaptation towards technology, such as AI. Workforce adaptation greatly contributes to effective organizational performance as well, it's been found. It enhances various parameters including productivity, innovation, operational efficiency, and employee engagement among others. The SEM findings demonstrate that workforce adaptation is the main mediator between AI adoption and enhanced organizational performance in organizations.

8. DISCUSSION

The working people are called upon to take an active part in all aspects of society which also includes its economic, political and cultural life. The writer says that the strength and autonomy of labour movements can enhance the organization and participation of workers. Moreover, the labour movement is able to forge crucial alliances and lock out bureaucratic

controls. To put it simply, the strength of the labour movement makes the difference between mobilising on the behalf of the workers and belief in the strength of the working class.

According to the study, the adaptation of the workforce has a significant and positive influence on the performance of the organization. The capacity of employees to adjust to novel AI-driven job processes and job roles arguably improves the organization's outcomes in terms of, productivity, creativity, operational efficiency, service quality and overall effectiveness. The positive and significant effect of the coefficient path between Workforce Adaptation and Organizational Performance suggests that organizations should always create an environment conducive to learning and reskilling. The findings are in line with the latest theories on workforce transformation which states that employees need to get ready in order to carry out successful digital transformation.

The use of AI has a significant effect on the organisation's performance. It implies that any organization that uses creates or derives advantage from decision-making process customer service or competitive advantage has measurable competitive benefit from it. The mediating influence of workforce adaptation is shown to be a partial mediation effect. That is to say, when used in isolation, an organization's performance will not be significantly impacted by AI adoption. When employees have the competence, knowledge and adaptability to use technology effectively, organizations get greater benefits from the adoption of AI by employees.

According to the R-squared (R²) values of the models, AI adoption explains a considerable amount of variance in the degree of adaptation of the workforce. Moreover, AI adoption and the degree of adaptation jointly explain a large amount of variance in the performance of the organization. The research shows that alignment of AI adoption with HR development practice is essential. If organizations spend on training employees, AI literacy, any change management, then they shall enjoy sustainable performance upgrade and long term competitive advantage.

Research indicates that workforce adaptation is a key mediator of the effects of AI adoption. The results indicate a distinct movement away from the techno-first philosophy towards human-centered AI. It involves feeding, and pushing employees, so one learns and develop organizations and capability. Through maximum utilization of AI organizations will be enabled to build workforce resilience, improve engagement, and sustaining long-term organization performance within the business's digital-age.

9. CONCLUSION

The study shows that AI is impacting the work culture and functions of the organisations in the service sector and IT sector of Maharashtra. It is crystal clear that the insertion of AI was beneficial and positively influenced the workforce adjustment and organisation's working. It means that productivity will be higher for organisational participants or enterprises that make use of AI technologies. Learning will also act as a retention strategy for professional staff members, who learn and up-skill regularly to be able to adapt to the changes caused by AI and support the entire organisational development process. The research confirms that workforce adjustment is an essential intervening variable in the process of the technology advances and closing success of an organisation. The successful incorporation of AI depends on the workforce being adaptable and future-ready as well as the implementation of the right technology infrastructure.

10. RECOMMENDATIONS

A firm readiness to prepare the workforce as well as a well-thought-out strategy to implement AI is essential for an organization to get the full benefit of digital transformation. Enhancing employee adaptability and resistance to technology adaptation through regular training arrangements, AI literacy, reskilling, and upskilling, and continuous learning platforms. Management should assist in developing a culture of innovation and create communications to provide transparency on AI deployment changes and employee impact and encourage a culture of innovation, collaboration, and continuous learning. Policymakers and relevant industries should encourage AI readiness by providing AI skills training. They also need to incentivize development for the new technologies. Employing an employee-centric approach to AI deployment, enterprises enhance performance, bolster resilience and ensures sustainability while maintaining a competitive edge

References

1. Babashahi, L., Da Silva, A., & Ribeiro, N. (2024). AI in the workplace: A systematic review of skill requirements and workforce adaptation. *Administrative Sciences*, 14(6), 127.
2. Farooq, B., Khan, A., & Ahmed, S. (2025). Exploring the role of artificial intelligence in enhancing employee experience and organizational culture. *Academic Center for Research Journal*.

3. Gemmano, C. G., & colleagues. (2026). Making artificial intelligence work at work: The role of employee well-being and performance. *Journal of Occupational and Organizational Psychology*.
 4. Liu, Q., Zhang, Y., & Li, H. (2025). How does organizational AI adoption affect employees' job crafting? *Frontiers in Psychology*, 16.
 5. Murire, O. T., Nyagadza, B., & Mafini, C. (2024). Artificial intelligence and its role in shaping organizational work practices and culture. *Administrative Sciences*, 14(12), 316.
 6. Oliveira, P., Santos, M., & Ferreira, J. (2025). AI integration in organisational workflows: A case study of workforce transformation. *Information*, 16(9), 764.
 7. Sha, C., Wang, X., & Liu, Y. (2025). When digital-AI transformation sparks adaptation: Job crafting as a response to technological change. *Frontiers in Psychology*, 16.
 8. Venugopal, M., Sreejith, S., & Nair, R. (2024). Transformative AI in human resource management: A systematic literature review. *Cogent Business & Management*, 11(1).
 9. Wang, Y., & Wang, H. (2022). Artificial intelligence adoption and employee behavioral adaptation in organizations. *International Journal of Human Resource Management*, 33(14), 2895–2918.
 10. Budhwar, P., Malik, A., & De Silva, M. T. (2022). Artificial intelligence and the future of work: Challenges and opportunities for human resource management. *Human Resource Management Review*, 32(3), 100856.
 11. Glikson, E., & Woolley, A. W. (2020). Human trust in artificial intelligence: Review and future research directions. *Academy of Management Annals*, 14(2), 627–660.
 12. Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision-making. *Business Horizons*, 61(4), 577–586.
 13. Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. *Academy of Management Annals*, 14(1), 366–410.
 14. Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of Management Review*, 46(1), 192–210.
 15. Tarafdar, M., Beath, C., & Ross, J. (2019). Using AI to enhance business operations and organizational performance. *MIT Sloan Management Review*, 60(4), 37–44..
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