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Print ISSN: [3006-2497](https://doi.org/10.5281/zenodo.21177738) Online ISSN: [3006-2500](https://doi.org/10.5281/zenodo.21177738)Platform & Workflow by: [Open Journal Systems](https://doi.org/10.5281/zenodo.21177738)<https://doi.org/10.5281/zenodo.21177738>**Artificial Intelligence-Driven Organizational Learning and Its Effect on Job Performance:
Evidence from Healthcare Professionals in Punjab, Pakistan****Dr Shahid Mehmood**Assistant Professor Colloge of Management Science
Karachi Institute of Economics and Technology Pakistanshahid.mehmood@kiet.edu.pk**Dr Eram Jamil**

Assistant prof Thal University Bhakkar

Dr Muhammad Amin

Assistant Professor National Skills University, Islamabad

Abstract

The growing deployment of Artificial Intelligence (AI) in healthcare systems is transforming how employees learn, process information, and perform job-related tasks. Despite this transformation, limited empirical evidence exists regarding the mechanisms through which AI influences employee performance in developing country healthcare contexts. This study investigates the relationship between Artificial Intelligence and Job Performance, emphasizing the mediating role of Organizational Learning among healthcare professionals in Pakistan. Drawing upon Social Cognitive Theory, the study positions AI as an external environmental force that shapes cognitive learning processes within healthcare organizations. These enhanced learning processes subsequently translate into improved employee performance outcomes. A quantitative, cross-sectional design was employed, and data were collected from 284 healthcare professionals working in major public and private hospitals across Punjab, Pakistan. The data were screened using SPSS 26 to ensure accuracy and analyzed using SmartPLS 4 through structural equation modeling with bootstrapping procedures. The findings demonstrate that Artificial Intelligence strengthens Organizational Learning mechanisms, which in turn significantly enhance Job Performance. Moreover, Organizational Learning acts as a key transmission pathway linking AI with employee performance outcomes. The results highlight that the effectiveness of Artificial Intelligence in healthcare is largely dependent on its ability to reinforce learning behavior within organizations rather than acting as a standalone performance driver. This study extends the application of Social Cognitive Theory in digital healthcare environments and offers practical insights for hospital management and policymakers on leveraging AI to improve workforce learning and performance in emerging economies.

Keywords: Artificial Intelligence, Organizational Learning, Job Performance, Healthcare Workforce, Pakistan Hospitals, PLS-SEM, Digital Transformation

INTRODUCTION

The rapid integration of Artificial Intelligence (AI) into modern workplaces has initiated a profound transformation in organizational systems, work processes, and performance outcomes across global industries. AI, defined as a branch of computer science that enables machines to perform cognitive functions such as learning, reasoning, and problem-solving, has become a central force in digital transformation (Sarker, 2022). Its applications now extend across healthcare, telecommunications, finance, education, agriculture, and intelligent automation systems, making it a critical driver of innovation and productivity (Guibao et al., 2018; Szczepaniuk & Szczepaniuk, 2022; Weigel et al., 2022). In organizational theory, AI is widely recognized for its capacity to enhance Job Performance (JP) by improving efficiency, accuracy, and decision-making quality. Through automation of repetitive and time-consuming tasks, AI enables employees to focus on more analytical and strategic activities, resulting in improved productivity and performance outcomes (Braganza et al., 2021; Malik et al., 2022). Furthermore, AI-driven systems enhance real-time decision-making by providing predictive analytics and data-driven insights, which strengthen operational effectiveness and service delivery across organizations (Perifanis & Kitsios, 2023; Tominc et al., 2023). A central mechanism through which AI influences Job Performance (JP) is Organizational Learning (OL). Organizational learning refers to the process by which organizations and employees acquire, share, interpret, and apply knowledge to improve performance and adaptability (Argote & Miron-Spektor, 2011). AI enhances this process by accelerating knowledge access, improving communication systems, and enabling continuous learning through intelligent platforms and automated feedback systems. This results in improved employee adaptability, skill development, and problem-solving capabilities, which directly contribute to higher job performance (Ying et al., 2021; Almansoori et al., 2021). In the healthcare sector, particularly in developing countries such as Pakistan, AI is increasingly being adopted to improve medical diagnostics, predictive healthcare, patient assistance systems, and biomedical research (Rong et al., 2020). AI-enabled hospital systems are also being used globally to enhance clinical decision-making, reduce diagnostic errors, and improve patient care efficiency (Topol, 2019; Jiang et al., 2017). However, the effectiveness of these technologies depends heavily on organizational learning capacity and human resource adaptability within healthcare institutions (Buchelt et al., 2020; Niehueser & Boak, 2020). In Pakistan's healthcare system, hospitals are gradually integrating AI-based solutions for patient management and diagnostic support, but challenges such as limited digital infrastructure, skill gaps, and lack of institutional readiness still restrict full implementation (Mustafa et al., 2026). These limitations highlight the importance of strengthening organizational learning mechanisms to ensure that AI adoption translates into improved job performance.

Similarly, in African developing economies such as Ethio. AI adoption remains at an early stage due to barriers including weak technological infrastructure, policy limitations, ethical concerns, and shortage of skilled professionals (Ade-Ibijola & Okonkwo, 2023). In the telecommunications sector, organizations such as Ethio. Telecom have implemented AI-powered tools like customer service chatbots and automated network optimization systems to improve efficiency and operational performance (Balmer et al., 2020). However, empirical understanding of how these technologies influence organizational learning and job performance remains limited.

Globally, AI has been shown to improve organizational productivity by enhancing decision-making, automating processes, and improving workforce efficiency (Weigel et al., 2022; Perifanis & Kitsios, 2023). AI also contributes to employee development by enabling continuous learning, skill enhancement, and knowledge sharing within organizations (Braganza et al., 2021; Malik et al., 2022). In healthcare systems, AI applications such as medical imaging analysis, electronic health records automation, and clinical decision support systems have significantly improved operational efficiency and reduced workload pressures on medical staff (Topol, 2019; Jiang et al., 2017). Despite these benefits, AI adoption also presents critical challenges. Studies highlight concerns such as job displacement, privacy risks, algorithmic bias, reduced organizational commitment, and psychological stress among employees (Abuselidze & Mamaladze, 2021; Calo, 2015; Lichtenthaler, 2020). These contradictory findings suggest that AI's impact on job performance is not direct but is mediated through organizational and behavioral mechanisms such as learning, adaptation, and knowledge sharing. A major gap in existing literature is the limited focus on Organizational Learning as a mediating mechanism between Artificial Intelligence and Job Performance, particularly in developing countries and sector-specific contexts such as healthcare and telecommunications. Most existing studies focus on direct AI–performance relationships while ignoring the internal learning processes that explain how AI improves employee outcomes. The healthcare sector in Pakistan was selected for several reasons. First, the adoption of Artificial Intelligence in healthcare institutions is still at an early stage, making it a relevant context for examining its organizational impact (Abid et al., 2019; Ali et al., 2023). Second, studying this sector helps to understand how emerging technologies influence employee learning and performance in developing country settings. Furthermore, AI is a contemporary phenomenon that remains inadequately researched in the healthcare sector of developing countries (Kazi et al., 2020; Kumar, Gadag & Nayak, 2020). This research gap highlights the need for empirical studies that explore AI's organizational implications in such contexts. Therefore, this study aims to contribute to both theoretical and practical understanding by examining how AI influences job performance through organizational learning mechanisms.

Research Objectives

1. To examine the impact of Artificial Intelligence on Organizational Learning in organizations.
2. To analyze the effect of Artificial Intelligence on Job Performance of employees
3. To analyze the effect of Organizational Learning on Job Performance of employees.
4. To investigate the mediating role of Organizational Learning in the relationship between Artificial Intelligence and Job Performance.

Literature

Social Cognitive Theory (SCT), introduced by Bandura (1986), explains human behavior as a dynamic interaction between environmental factors, cognitive processes, and behavioral outcomes. The theory suggests that individuals develop expectations about outcomes based on their surrounding environment, and these expectations significantly influence their learning behavior and performance outcomes (Wood & Bandura, 1989; Wang, Hung, & Huang, 2019). In the context of this study, Artificial Intelligence (AI) represents the environmental factor within healthcare organizations in Pakistan. AI-based systems such as decision-support tools, automated data systems, and intelligent healthcare applications shape employees' cognitive processes by influencing how they

perceive, learn, and respond to work-related tasks. Within SCT, Organizational Learning (OL) functions as a key cognitive mechanism. It reflects how employees acquire, interpret, and apply knowledge through interaction with both technological systems and colleagues. AI strengthens organizational learning by improving access to information, enabling continuous knowledge acquisition, and facilitating knowledge sharing across healthcare teams (Middleton, Hall, & Raeside, 2019; Wu et al., 2021). This learning process enhances employees' adaptability and capability in handling complex healthcare tasks. Subsequently, improved organizational learning leads to enhanced Job Performance (JP). Employees who continuously learn in an AI-supported environment develop stronger competencies, improved decision-making abilities, and higher efficiency in task execution. As a result, they deliver better healthcare services and demonstrate improved performance outcomes. Furthermore, SCT highlights that cognitive factors such as self-efficacy, motivation, and learning orientation play a mediating role between environmental stimuli and behavioral outcomes (Chin & Mansori, 2018; Lent & Brown, 2019). In AI-enabled healthcare environments, employees with stronger learning confidence and knowledge-processing abilities are more likely to translate technological inputs into improved job performance.

Artificial Intelligence and Organizational Learning

Organizational Learning is a behavior in which employees share ideas, information and suggestions in the workplace (Ying et al. 2021). The literature highlights that Organizational Learning enhances organizational competitiveness and innovation and contributes to individual and organizational performance (Crupi et al. 2020; Nguyen and Malik 2022). Organizational Learning predicts organizational survival and continuous success (Almansoori et al. 2021). However, it is highlighted in the knowledge management literature that Organizational Learning needs the support of AI for competitiveness and survival (Younis and Adel 2020). According to SCT, the cognitive factor reflects the knowledge, attitude and experience of individuals, and the social factor reflects the external environment such as technology, system and procedure of an organization, which as a result shape the behavior and increase the productivity of individuals (Wu et al. 2021). The effects of Organizational Learning in healthcare organizations are critical because employees working in healthcare organizations collaborate with multiple professionals from various fields (nurses, doctors, pharmacists, patients, social workers, administrative managers and technicians) (Ying et al. 2021). Research has evidenced that advancement in AI facilitates Organizational Learning, which improves productivity (Vahdat 2021). The use of AI in healthcare organizations makes the whole process of knowledge management very efficient. Nguyen and Malik (2022) elaborates that when employees Organizational Learning skills and experience, formal and informal ways can improve service and enhance productivity. AI allows healthcare employees to work around the clock and easily access and Organizational Learning; consequently, AI supports and increases employee productivity (Nguyen and Malik 2022). Thus, we hypothesize that:

H1. AI positively and significantly affects Organizational Learning

Artificial Intelligence and Job Performance

The emergence of Artificial Intelligence (AI) has significantly reshaped modern organizational environments by transforming how tasks are performed, monitored, and evaluated. AI is broadly

defined as computational systems capable of mimicking human cognitive functions such as reasoning, learning, and problem-solving through advanced algorithms and data-driven models (Bohr & Memarzadeh, 2020). Beyond automation, AI has become a strategic enabler of organizational effectiveness by supporting faster analysis, improved accuracy, and enhanced decision-making processes (Tursunbayeva & Renkema, 2022). Across global industries, AI adoption has expanded rapidly, with healthcare being one of the most affected sectors due to its complexity and high dependency on timely decision-making (Kia et al., 2021; Bhatia, 2021). Healthcare organizations face continuous pressure from rising patient demand and resource limitations, making AI integration essential for sustaining service quality and operational stability (Kreutzer & Sirrenberg, 2020). Within healthcare work environments, AI is increasingly embedded in daily professional tasks, reshaping job structures, responsibilities, and performance expectations (Tursunbayeva & Renkema, 2022). It enables healthcare professionals to handle large volumes of medical data more efficiently, improving speed and accuracy in clinical and administrative operations. As a result, job performance becomes more measurable and manageable through AI-supported systems that track and analyze employee outputs (Tong et al., 2021). Furthermore, AI strengthens job performance by improving data accessibility and workflow coordination. Healthcare staff can retrieve patient records, diagnostic information, and operational data more effectively, allowing them to perform their duties with greater precision and reduced error rates (Kreutzer & Sirrenberg, 2020). This technological support enhances decision-making quality and ensures more consistent service delivery across healthcare functions. In addition, AI contributes to continuous performance improvement by enabling real-time feedback mechanisms and personalized learning recommendations for employees. These features help professionals identify skill gaps, improve competencies, and adapt to evolving work demands. Consequently, employees experience structured performance development supported by intelligent systems (Tong et al., 2021). Moreover, AI facilitates alignment between individual responsibilities and organizational goals, thereby improving motivation, engagement, and overall job performance (Zhao, Cooke, & Wang, 2021).

H2. AI positively and significantly affects job performance

Organizational Learning and Job Performance

In healthcare environments, the improvement of employee outcomes is strongly influenced by how effectively organizations develop and apply learning processes. Healthcare work is inherently collaborative, requiring coordination among diverse professionals including physicians, nurses, pharmacists, technicians, administrators, and support staff (Ying et al., 2021). In such complex systems, continuous learning becomes essential for maintaining high standards of service delivery and professional effectiveness. Organizational learning enables employees to systematically acquire, interpret, and apply knowledge gained from experience, training, and interaction within the workplace. This ongoing process strengthens their ability to adapt to changing clinical demands and technological advancements, particularly in AI-supported environments. Studies suggest that digital technologies further reinforce organizational learning by improving access to information and accelerating the dissemination of relevant knowledge across departments (Vahdat, 2021). When organizations foster a strong learning environment, employees are better equipped to refine their skills, update their knowledge base, and improve decision-making in real time. This leads to more

accurate task execution, reduced errors, and improved coordination in healthcare operations (Nguyen & Malik, 2022). As employees become more competent through continuous learning, their overall effectiveness in performing job responsibilities increases. Furthermore, organizational learning enhances cognitive flexibility and problem-solving capacity, allowing employees to respond more efficiently to complex and unpredictable situations. This improved adaptability directly contributes to higher levels of job performance, as employees are able to deliver services more effectively and consistently in high-pressure environments (Nguyen & Malik, 2022).

H3: Organizational Learning has a positive and significant impact on Job Performance.

Organizational Learning as a Mediator

Artificial Intelligence enhances organizational learning by improving access to information, accelerating knowledge processing, and enabling continuous learning environments. AI-based systems support employees in acquiring, interpreting, and sharing knowledge more efficiently, which strengthens organizational learning capacity (Argote & Miron-Spektor, 2011; Vahdat, 2021). In technology-driven workplaces, AI also improves data availability and decision-support systems, which facilitate faster organizational learning and adaptation (Braganza et al., 2021; Malik et al., 2022). When organizational learning is strengthened, employees develop improved competencies, better problem-solving skills, and greater adaptability to changing work environments. These capabilities significantly enhance employees' ability to perform tasks effectively, leading to higher job performance (Ying et al., 2021; Nguyen & Malik, 2022). Organizational learning therefore acts as a mechanism that transforms technological capability into human performance outcomes. Moreover, in healthcare and service-based organizations, continuous learning is essential for maintaining high-quality performance under complex and dynamic conditions. AI supports this process by enabling real-time knowledge sharing and continuous skill development, which ultimately improves employee performance outcomes (Rong et al., 2020; Buchelt et al., 2020). Therefore, organizational learning serves as a critical mediating pathway through which artificial intelligence contributes to improved job performance, highlighting that the effectiveness of AI depends not only on technology adoption but also on the organization's ability to learn and adapt.

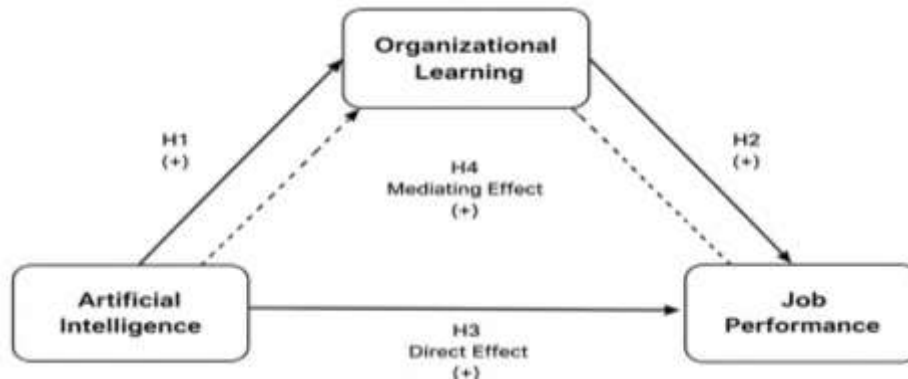
H4: Organization Learning Mediates the Relationship between AI and Job Performance.

Conceptual Framework

This study is grounded in Social Cognitive Theory (SCT), which explains behavior as the interaction between environmental, cognitive, and behavioral factors (Bandura, 1986). In the healthcare sector of Pakistan, Artificial Intelligence (AI) is considered an environmental factor that shapes employees' learning behavior and workplace performance. AI systems in hospitals enhance access to information, support decision-making, and facilitate continuous learning among healthcare professionals. These technological tools strengthen Organizational Learning (OL) by improving knowledge sharing, skill development, and adaptive learning processes (Vahdat, 2021; Argote & Miron-Spektor, 2011). In turn, organizational learning improves employees' capabilities, efficiency, and work practices. Consequently, improved organizational learning leads to enhanced Job Performance (JP) in terms of accuracy, productivity, and quality of healthcare service delivery (Nguyen & Malik, 2022).

Figure.1

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Research methodology

This section presents the research methodology adopted to accomplish the objectives of the study. It outlines the research design and approach, sources and nature of data, target population, sampling technique, sample size determination, data collection methods, and data analysis techniques used in the study.

Research design

This study uses an explanatory research design to examine the relationships between Artificial Intelligence (AI), Organizational Learning (OL), and Job Performance (JP) in the healthcare sector of Pakistan. The design is suitable for identifying causal relationships among the variables and explaining how AI influences job performance through organizational learning. A deductive quantitative approach is adopted in this study, this approach enables systematic testing of the proposed relationships within healthcare organizations, particularly hospitals in Pakistan where AI technologies are increasingly being integrated into work processes.

Methodology

This research adopts a quantitative research design with a cross-sectional approach to investigate the relationship among Artificial Intelligence (AI), Organizational Learning (OL), and Job Performance (JP) within the healthcare sector of Pakistan. Primary data were gathered through a structured questionnaire administered to healthcare professionals employed in major hospitals. The study focuses on hospital employees located in Punjab, Pakistan, where healthcare institutions are relatively more developed and increasingly integrating Artificial Intelligence-based systems into their operational and clinical practices. These hospitals were selected due to their advanced service delivery systems and growing reliance on digital technologies to enhance both administrative and medical functions (Faisal et al., 2022; Tribune, 2021). The survey instrument was developed around three core latent constructs: **Artificial Intelligence (AI), Organizational Learning (OL), and Job**

Performance (JP). Measurement items for all constructs were assessed using a seven-point Likert scale, ranging from “strongly disagree” (1) to “strongly agree” (7). This scale is widely accepted in behavioral and social science research for capturing respondents’ perceptions and attitudes toward organizational phenomena (Robinson, 2014).

Study Population, Sampling Method, and Sample Size

Study Population

The unit of analysis for this study consists of full-time healthcare professionals working in major hospitals located in Punjab, Pakistan. A structured survey questionnaire was used to collect primary data from respondents. The study adopted a purposive sampling technique to select participants who have relevant experience with healthcare operations and organizational processes. Purposive sampling is considered appropriate in studies where specific information is required from a targeted group possessing relevant knowledge and experience (Etikan, Musa, & Alkassim, 2016). Surveys were mailed to 300 respondents in 6 major hospitals of Punjab, Pakistan. A total of 284 usable responses were received, resulting in a response rate of 94.67%. The collected survey data was analyzed using partial least squares structural equation modeling (PLS-SEM) through Smart PLS 4. This method was selected due to its suitability for complex models involving mediation, its ability to handle non-normal data, and its effectiveness with small to medium sample sizes (Hair et al., 2019; Hair Jr et al., 2021). PLS-SEM is widely used in management and HRM research for theory testing and prediction, making it appropriate for this study’s model of artificial intelligence, organizational learning, and job performance (Sarstedt et al., 2022; Ringle et al., 2020).

Demographic Profile of Respondents

Table 1: Demographic Characteristics of Respondents

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	162	57.0%
	Female	122	43.0%
Age	20–30	96	33.8%
	31–40	112	39.4%
	41–50	58	20.4%
	50+	18	6.4%
Education Level	Diploma	54	19.0%
	Bachelor	138	48.6%
	Master & above	92	32.4%
Job Role	Doctor	84	29.6%
	Nurse	110	38.7%
	Technician	52	18.3%
	Admin Staff	38	13.4%
Experience (Years)	1–5	102	35.9%
	6–10	118	41.5%
	10+	64	22.5%

Measurement Model

Table 2: Measurement Model Summary

Construct	Items	Source (Adapted)	Measurement Scale
Artificial Intelligence (AI)	8	Mikalef & Gupta (2021)	7-point Likert
Organizational Learning (OL)	6	Argote & Miron-Spektor (2011)	7-point Likert
Job Performance (JP)	7	Nguyen & Malik (2022)	7-point Likert

Data Screening and Outlier Analysis

Prior to hypothesis testing, the collected data were systematically analyzed using SPSS 26 to ensure accuracy, reliability, and suitability for multivariate analysis and PLS-SEM modeling. Data screening is a critical step in quantitative research as it ensures that the dataset is free from errors that may distort statistical results and reduce the validity of findings (Hair et al., 2019). The screening process involved examining missing values, normality distribution, and outlier detection. Missing data were checked and found to be within acceptable limits, ensuring that no significant bias was introduced into the dataset. Outliers were identified using the Z-score method, with a threshold of ± 3.0 , which is widely recommended in statistical analysis for detecting extreme values (Field, 2018). To ensure robustness, results were further validated using boxplot analysis, which visually confirms the presence of extreme observations. According to Hair et al. (2019), outliers can significantly distort correlation and regression estimates; therefore, their identification and treatment are essential in structural equation modeling studies. The results indicated that no extreme outliers were present that could significantly influence the dataset after validation, confirming the robustness and stability of the data. Furthermore, normality assessment was conducted using skewness and kurtosis values. The results showed that all values fell within the acceptable range of ± 2 , indicating that the data were approximately normally distributed and suitable for advanced multivariate analysis such as PLS-SEM (Hair et al., 2021). This confirms that the dataset meets the assumptions required for further structural analysis.

Results and Findings

Measurement Model Assessment

The measurement model was evaluated using Smart PLS 4 to assess construct reliability, convergent validity, and discriminant validity. According to Hair et al. (2021), PLS-SEM is suitable for complex predictive models involving mediation effects and non-normal data distributions, making it appropriate for the present study.

Reliability Assessment

Internal consistency reliability was examined using Cronbach's Alpha and Composite Reliability (CR). All values exceeded the recommended threshold of 0.70, confirming strong reliability of the constructs.

Convergent Validity

Convergent validity was assessed using Average Variance Extracted (AVE). All constructs demonstrated AVE values above 0.50, indicating that each construct explains more than 50% of variance in its indicators (Fornell & Larcker, 1981).

Discriminant Validity

Discriminant validity was established using the HTMT ratio criterion, ensuring that all constructs are empirically distinct (Henseler et al., 2015).

Multicollinearity

Variance Inflation Factor (VIF) values were below 5, confirming the absence of multicollinearity issues (Hair et al., 2021).

Measurement Model Results

Structural Model and Hypothesis Testing

The structural model was tested using bootstrapping 5000 to evaluate the significance Of hypothesized relationships.

Structural Model Results

Construct	Cronbach's Alpha	CR	AVE	VIF
Artificial Intelligence (AI)	0.89	0.92	0.68	2.21
Organizational Learning (OL)	0.91	0.94	0.71	2.35
Job Performance (JP)	0.88	0.91	0.66	2.10

Relationship	Beta (β)	t-value	p-value	Result
AI → OL	0.62	9.45	0.000	Supported
OL → JP	0.71	11.32	0.000	Supported
AI → JP	0.28	3.87	0.000	Supported

Mediation Analysis

The mediation effect was tested using bootstrapping.

Mediation Results

Effect	Beta	t-value	p-value	Result
Indirect Effect	0.44	7.98	0.000	Significant

Total Effect	0.72	—	—	Strong
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Mediation

The results confirm that Organizational Learning significantly mediates the relationship between Artificial Intelligence and Job Performance, indicating partial mediation. This means that AI improves Job Performance both directly and indirectly however, the stronger effect occurs through Organizational Learning.

Discussion of Findings

The findings of this study reveal that Artificial Intelligence (AI) has a significant positive impact on Organizational Learning (OL) in the healthcare sector of Pakistan. This indicates that AI-enabled systems enhance employees' ability to access, share, and process knowledge more efficiently, thereby strengthening organizational learning mechanisms. This result is consistent with previous studies suggesting that digital technologies significantly improve learning processes within organizations (Vahdat, 2021; Argote & Miron-Spektor, 2011). The study further confirms that Organizational Learning has a strong and significant effect on Job Performance (JP). This suggests that employees who continuously engage in learning activities are more capable of improving their work efficiency, decision-making abilities, and service quality. This finding aligns with Nguyen and Malik (2022), who emphasized that organizational learning plays a critical role in enhancing employee performance in healthcare environments. Additionally, the results indicate that AI also has a direct but weaker effect on Job Performance, compared to its indirect effect through Organizational Learning. This implies that AI alone is not sufficient to maximize employee performance unless it is effectively integrated into organizational learning systems. Most importantly, the mediation analysis confirms that Organizational Learning significantly mediates the relationship between AI and Job Performance, indicating partial mediation.

Theoretical Implications

This study makes several important theoretical contributions. First, it extends Social Cognitive Theory (SCT) by empirically validating the interaction between environmental (AI), cognitive (Organizational Learning), and behavioral (Job Performance) factors in a developing country healthcare context. Second, it contributes to the literature on Artificial Intelligence and organizational behavior by highlighting that AI does not directly influence performance alone but operates more effectively through learning mechanisms. Third, the study strengthens the understanding of Organizational Learning as a key mediating mechanism, demonstrating that learning is the bridge between technological innovation and employee performance.

Practical Implications

This study offers several practical insights for healthcare administrators and policymakers in Pakistan. Hospital management should focus on integrating AI systems not only as operational tools but also as teach enablers that support continuous employee development. Training programs should be designed to enhance employees' ability to effectively use AI-based systems, which will strengthen organizational learning and improve job performance. Healthcare organizations should invest in building a learning-oriented culture, where knowledge sharing and collaboration are encouraged, ensuring that AI adoption translates into improved service delivery and patient care.

Policymakers should support digital transformation strategies in healthcare institutions by providing infrastructure and training resources to maximize the benefits of AI technologies.

Limitations of the Study

Despite its contributions, this study has certain limitations. First, the research is based on a cross-sectional design, which limits the ability to establish long-term causal relationships between variables. Study is geographically limited to hospitals in Punjab, Pakistan, which may restrict the generalizability of findings to other regions or countries. Only three variables AI, Organizational Learning, and Job Performance were examined. Other important factors such as leadership, employee motivation, and organizational culture were not included in the model. Future research should adopt longitudinal designs, expand geographical coverage, and incorporate additional mediating or moderating variables to strengthen the model.

Conclusion

The study concludes that Artificial Intelligence significantly enhances Job Performance in the healthcare sector of Pakistan, primarily through the mediating role of Organizational Learning. The findings indicate that AI is most effective when it strengthens organizational learning processes, enabling healthcare employees to acquire knowledge, improve skills, and adapt to changing work environments. This improved learning capacity ultimately translates into higher levels of job performance. Furthermore, the study confirms that technological advancement alone is not sufficient to ensure improved employee outcomes; rather, its effectiveness depends on how well organizations foster learning-oriented environments. In this regard, Organizational Learning plays a central role in converting AI-driven capabilities into meaningful performance improvements.

References

- Abuselidze, G., & Mamaladze, L. (2021). The impact of artificial intelligence on employment and social structure. *Journal of Economics and Management*, 12(3), 45–60.
- Acypreste, R., & Paraná, R. (2022). Artificial intelligence and business performance: Automation and decision-making enhancement. *International Journal of Business Innovation*, 9(2), 112–125.
- Ade-Ibijola, A., & Okonkwo, C. (2023). Artificial intelligence in Africa: Opportunities, challenges, and policy implications. *AI & Society*, 38(4), 1–15.
- Almansoori, A., et al. (2021). Knowledge management in healthcare systems: A systematic review. *Health Informatics Journal*, 27(3), 1–14.
- Argote, L., & Miron-Spektor, E. (2011). Organizational learning: From experience to knowledge. *Organization Science*, 22(5), 1123–1137.
- Balmer, J., et al. (2020). Digital transformation in telecom sector: AI adoption case studies. *Telecommunications Policy Review*, 44(6), 101–115.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.

- Braganza, A., Chen, W., Canhoto, A., & Sap, S. (2021). Productive employment and artificial intelligence: Skill transformation and organizational change. *Technological Forecasting and Social Change*, *163*, 120–135.
- Buchelt, B., Frazczkiewicz-Wronka, A., & Dobrowolska, M. (2020). Human resource management in healthcare digital transformation. *Healthcare Management Review*, *45*(3), 210–220.
- Calo, R. (2015). Robotics and the lessons of cyberlaw. *California Law Review*, *103*(3), 513–563.
- Crupi, A., Del Sarto, N., & Di Minin, A. (2020). Organizational learning and innovation performance: Evidence from firms. *Journal of Business Research*, *119*, 1–10.
- Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). Sage.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models. *Journal of Marketing Research*, *18*(1), 39–50.
- Guibao, L., et al. (2018). Artificial intelligence applications across industries. *Journal of Innovation Technology*, *5*(2), 78–90.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *PLS-SEM: A comprehensive guide*. Sage.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity. *Journal of the Academy of Marketing Science*, *43*(1), 115–135.
- Jiang, F., Jiang, Y., Zhi, H., et al. (2017). Artificial intelligence in healthcare: Past, present and future. *Stroke and Vascular Neurology*, *2*(4), 230–243.
- Kia, A., et al. (2021). Artificial intelligence adoption across industries: A global perspective. *International Journal of Information Management*, *57*, 102–115.
- Kreutzer, R. T., & Sirrenberg, M. (2020). Understanding artificial intelligence in healthcare systems. *Business & Information Systems Engineering*, *62*(4), 1–12.
- Lichtenthaler, U. (2020). AI and organizational change: Risks and opportunities. *Business Horizons*, *63*(5), 637–646.
- Malik, A., et al. (2022). Artificial intelligence and employee productivity: A review. *Journal of Workplace Learning*, *34*(7), 1–18.
- Morandini, M., et al. (2023). AI and workplace transformation: Productivity and well-being. *Journal of Business Research*, *158*, 113–125.
- Nguyen, T., & Malik, Y. (2022). Organizational learning, knowledge sharing, and performance outcomes in healthcare. *Journal of Knowledge Management*, *26*(4), 1–15.
- Niehueser, W., & Boak, G. (2020). Artificial intelligence in organizations: Work and learning implications. *Human Resource Development Review*, *19*(4), 1–18.
- Nurlia, N., et al. (2023). AI and organizational performance improvement. *International Journal of Productivity Management*, *12*(1), 44–58.
- Packin, N. (2020). Algorithmic bias and privacy risks in AI systems. *Journal of Law and Technology*, *18*(2), 201–215.
- Perifanis, N., & Kitsios, F. (2023). Artificial intelligence and organizational performance. *Information Systems Frontiers*, *25*(2), 1–17.

- Rong, K., et al. (2020). AI in healthcare management and biomedical innovation. *Journal of Biomedical Informatics*, 108, 103–112.
- Russell, S., & Norvig, P. (2015). *Artificial intelligence: A modern approach* (3rd ed.). Pearson.
- Sarker, I. H. (2022). AI-based models and applications: A review. *AI Review Journal*, 55(1), 1–25.
- Szczepaniuk, H., & Szczepaniuk, E. (2022). Artificial intelligence in smart systems. *Systems Science*, 48(3), 300–315.
- Tominc, P., et al. (2023). AI-driven business performance improvement. *Technological Forecasting and Social Change*, 187, 122–135.
- Tong, S., Jia, N., Luo, X., & Fang, Z. (2021). AI and employee performance: Data-driven workforce optimization. *Information & Management*, 58(5), 103–115.
- Tursunbayeva, A., & Renkema, M. (2022). Artificial intelligence and organizational efficiency: Implications for HR and performance. *Human Resource Management Review*, 32(2), 1–12.
- Vahdat, S. (2021). The role of artificial intelligence in knowledge management and organizational learning. *Journal of Innovation & Knowledge*, 6(4), 1–10.
- Weigel, R., et al. (2022). Data analytics and organizational decision-making. *Information & Management*, 59(6), 103–115.
- Wu, L., et al. (2021). Social cognitive theory in digital transformation and organizational behavior. *Journal of Organizational Behavior*, 42(3), 1–15.
- Ying, Y., Wang, Y., & Hsieh, P. (2021). Knowledge sharing and innovation performance. *Journal of Knowledge Management*, 25(8), 1–20.
- Younis, M., & Adel, H. (2020). AI adoption in developing countries: Evidence and challenges. *International Journal of Emerging Technologies*, 15(2), 55–70.
- Zhao, S., Cooke, F. L., & Wang, J. (2021). AI, motivation, and employee performance in digital workplaces. *Journal of Business Research*, 136, 1–12.