Effect of AI on Learning and Emotional Behavior and Its Impact on Employee Job Performance: An Empirical Evidence from Textile Industry of Pakistan

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Received on: 02-05-2024 Accepted on: 03-06-2024

Abstract

Artificial Intelligence (AI) has emerged as a transformative technological innovation influencing organizational systems, employee management practices and workplace productivity across industries. The present study examines the effect of Artificial Intelligence on employee learning and emotional behavior and its subsequent impact on employee performance within the textile industry of Pakistan. The study further investigates the mediating roles of employee learning and emotional behavior in the relationship between AI and employee performance. The research is grounded in the Theory of Perception, which explains that employees' perceptions regarding technological systems significantly influence their behavioral and emotional responses toward workplace technologies. The study adopted a positivist research philosophy and a deductive quantitative research approach. A causal and explanatory research design was employed to examine the hypothesized relationships among the variables. Primary data was collected through a structured questionnaire distributed among employees working in public and private textile organizations in Pakistan. A total of 500 valid responses were obtained using convenience sampling technique. The collected data was analyzed through Statistical Package for Social Sciences (SPSS) using descriptive statistics, reliability analysis, convergent validity analysis, correlation analysis, regression analysis and mediation analysis. The findings of the study reveal that Artificial Intelligence has a significant positive effect on employee learning, emotional behavior and employee performance within the textile industry of Pakistan. The results further indicate that employee learning significantly improves employee performance, while emotional behavior also plays an important role in determining workplace productivity and effectiveness. Mediation analysis confirms that employee learning and emotional behavior partially mediate the relationship between Artificial Intelligence and employee performance. The findings suggest that AI-supported systems improve organizational efficiency and employee productivity when employees are provided with adequate learning opportunities and emotional support during technological transformation. The study contributes to the growing literature on Artificial Intelligence and organizational behavior by integrating technological, behavioral and psychological dimensions within a unified

conceptual framework. Practically, the study provides valuable insights for textile organizations, HR professionals and policymakers regarding balanced AI implementation strategies that enhance employee learning, emotional well-being and organizational performance. The study concludes that successful AI integration within industrial environments requires not only technological advancement but also effective management of employees' behavioral and emotional adaptation processes.

Keywords: Artificial Intelligence, Employee Learning, Emotional Behavior, Employee Performance, Organizational Behavior, AI Adoption.

1. Introduction

Artificial Intelligence (AI) has emerged as one of the most revolutionary technological advancements transforming modern organizational systems, workplace dynamics and employee management practices across the world. Rapid developments in machine learning, predictive analytics, automation, robotics and intelligent decision-support systems have significantly altered how organizations operate, compete and manage human resources in technologically driven environments (Agrawal et al., 2018). Organizations increasingly integrate AI technologies into operational, strategic and managerial activities to improve efficiency, optimize decision-making, reduce operational costs and enhance organizational productivity (Jarrahi, 2018). AI-powered systems are now widely utilized in employee training, performance monitoring, workflow automation, production planning, customer relationship management and organizational communication processes (Chen et al., 2022). Consequently, AI has become an essential organizational tool influencing not only operational performance but also employees' behavioral, psychological and professional experiences within workplaces.

The contemporary relevance of AI has increased substantially in recent years because organizations globally are experiencing rapid digital transformation and technological modernization. The emergence of Industry 4.0, smart manufacturing systems, digital production technologies and intelligent automation has intensified organizational dependence on AI-based systems for maintaining competitiveness and operational sustainability (Fountaine et al., 2019). In developing economies such as Pakistan, industries are increasingly adopting AI technologies to strengthen productivity, quality standards, innovation and market competitiveness within globalized economic environments. Among these industries, the textile sector holds exceptional strategic importance because it represents one of Pakistan's largest industrial sectors contributing significantly to exports, employment generation, manufacturing output and economic growth.

The textile industry of Pakistan plays a central role in the country's economic development and industrial sustainability. The sector contributes substantially toward national GDP, foreign exchange earnings, industrial employment and export revenues. However, the textile industry also faces increasing challenges associated with global competition, technological advancement, operational efficiency, labor productivity, quality management and production modernization. To address these challenges, textile organizations are increasingly investing in AI-supported technologies including intelligent production systems, automated quality inspection mechanisms, predictive maintenance systems, digital workflow management,

supply chain analytics and AI-driven employee management systems (Wang et al., 2020). The integration of AI technologies within textile organizations has significantly transformed operational structures and employee work environments, creating new opportunities as well as psychological and behavioral challenges for employees.

Despite the growing adoption of AI technologies, considerable debate exists regarding the influence of AI on employees' learning behavior, emotional experiences and job performance within organizational environments. Existing literature extensively discusses the technological benefits of AI such as improved operational efficiency, automation accuracy, productivity enhancement, cost reduction and strategic decision-making effectiveness (Agrawal et al., 2018; Luo et al., 2021). However, comparatively limited attention has been given to understanding how AI influences employees' behavioral and psychological dimensions, particularly within labor-intensive industries such as textiles in developing countries. Modern organizations increasingly recognize that organizational performance is not determined solely by technological capability but also by employees' adaptability, learning capacity, emotional well-being and performance effectiveness.

Employee learning has become critically important in contemporary workplaces because technological transformation continuously changes organizational processes, production systems and competency requirements. AI-supported systems increasingly facilitate personalized learning, intelligent feedback mechanisms, real-time performance evaluation and continuous skill development opportunities for employees (Jia et al., 2023). AI technologies possess the capability to identify employee learning needs, monitor competency gaps and provide customized developmental recommendations that improve professional growth and organizational adaptability (Tong et al., 2021). Within the textile industry, where operational modernization and technological innovation are rapidly increasing, employees' ability to learn and adapt to AI-supported systems has become essential for maintaining productivity and operational effectiveness.

At the same time, the growing integration of AI within workplaces has also generated significant concerns regarding employees' emotional behavior and psychological responses. Emotional behavior refers to employees' feelings, emotional reactions, attitudes and psychological experiences resulting from workplace interactions and organizational systems (Watson & Tellegen, 1985). The implementation of AI technologies may generate both positive and negative emotional experiences among employees. Some employees perceive AI systems as supportive technologies that reduce workload, improve efficiency and facilitate task performance, whereas others experience stress, anxiety, uncertainty, fear of replacement and emotional discomfort associated with technological surveillance and automation (Mahmud et al., 2022). These emotional reactions are particularly important within labor-intensive industries such as textiles, where employees may perceive technological transformation as both an opportunity and a threat to job security and workplace stability.

The contemporary importance of this study is further strengthened by the increasing global

debate regarding the human implications of AI adoption within workplaces. Although AI enhances technological efficiency, scholars argue that organizations must carefully understand the behavioral and emotional consequences associated with intelligent automation because employee resistance, emotional stress and technological anxiety may weaken organizational effectiveness over time (Yam et al., 2021). The textile industry of Pakistan is currently undergoing technological modernization to compete within international markets, making it essential to understand how AI technologies influence employees' learning capabilities, emotional behavior and performance outcomes. The findings of this study may therefore provide valuable insights for organizations seeking to balance technological advancement with employee well-being and organizational sustainability.

Job performance remains one of the most important organizational outcomes affected by technological transformation and employee behavioral factors. Employee performance refers to the effectiveness with which employees accomplish organizational responsibilities, operational targets and productivity objectives (Chow, 1983). Contemporary organizational behavior literature emphasizes that employee learning and emotional behavior significantly determine workplace productivity, innovation, adaptability and performance effectiveness (Belschak & Hartog, 2009). Employees who continuously learn and maintain positive emotional states are generally more capable of adapting to technological changes, handling workplace challenges and achieving organizational goals effectively. AI technologies may positively influence employee performance through operational support, intelligent assistance, real-time information processing and automated decision-making systems. However, negative emotional reactions and technological resistance may weaken these performance benefits if organizations fail to manage AI implementation effectively.

Theoretical support for this study is primarily derived from the Theory of Perception proposed by Gray et al. (2007). The theory explains that individuals interpret technological systems based on perceptions regarding intelligence, capability, emotional understanding and organizational usefulness. Employees' perceptions toward AI systems significantly shape their emotional responses, learning behavior, technology acceptance and workplace performance. Employees who perceive AI systems positively are more likely to engage in learning activities, adapt to technological environments and demonstrate improved workplace performance. Conversely, negative perceptions regarding AI may generate emotional discomfort, stress and resistance toward technological transformation.

Although previous studies have examined AI implementation within organizational settings, substantial research gaps remain. First, most existing studies focus predominantly on technological efficiency and operational performance while comparatively neglecting employees' learning and emotional dimensions. Second, limited empirical evidence exists regarding the combined influence of AI on employee learning, emotional behavior and job performance within the textile industry of Pakistan. Third, the majority of previous studies have been conducted in technologically advanced economies, whereas developing countries such as Pakistan face unique industrial, technological, workforce and socio-economic

challenges that may influence employee responses toward AI technologies differently.

Therefore, the present study aims to examine the effect of Artificial Intelligence on employee learning and emotional behavior and its subsequent impact on employee performance within the textile industry of Pakistan. Specifically, the study investigates how AI technologies influence employees' learning capabilities and emotional behavior and how these variables contribute toward employee performance outcomes. The study further explores the mediating role of employee learning and emotional behavior in the relationship between AI and employee performance.

The significance of this study is substantial for both academia and industry. Academically, the study contributes to the growing body of organizational behavior and technology management literature by integrating AI, employee learning, emotional behavior and performance within a unified conceptual framework. The study also extends the application of the Theory of Perception within AI-supported organizational environments in developing economies. Practically, the findings may assist textile organizations, policymakers, industrial managers and HR professionals in understanding the behavioral and psychological implications of AI implementation. The study may further help organizations design balanced AI integration strategies that improve employee learning and productivity while minimizing negative emotional consequences associated with technological transformation.

1.1 Research Problem

The increasing adoption of Artificial Intelligence within the textile industry of Pakistan has transformed organizational operations, production systems and workforce management practices. However, despite the technological advantages associated with AI implementation, limited empirical evidence exists regarding how AI influences employees' learning behavior, emotional experiences and job performance within the textile sector of Pakistan. Existing studies primarily focus on operational efficiency and technological outcomes while comparatively neglecting employees' behavioral and psychological dimensions. Furthermore, employees within labor-intensive industries may experience both positive and negative emotional reactions toward AI technologies, which may ultimately influence organizational productivity and performance effectiveness. Therefore, there is a critical need to investigate how AI affects employee learning and emotional behavior and how these factors contribute toward employee performance within the textile industry of Pakistan.

2. Literature Review

2.1 Artificial Intelligence and Organizational Transformation

Artificial Intelligence (AI) has emerged as one of the most transformative technological developments influencing organizational structures, employee management systems and workplace productivity across industries. AI refers to the capability of machines and intelligent systems to perform cognitive functions such as learning, problem-solving, prediction, decision-making and data analysis that traditionally require human intelligence (Russell & Norvig, 2021). Modern organizations increasingly integrate AI technologies into operational and managerial activities to enhance efficiency, automate repetitive tasks,

improve strategic decision-making and strengthen organizational competitiveness (Agrawal et al., 2018). AI applications including machine learning, predictive analytics, intelligent automation, natural language processing and algorithmic management systems are rapidly reshaping contemporary workplaces (Jarrahi, 2018).

The textile industry is among the major sectors increasingly utilizing AI-based systems to improve operational effectiveness, production efficiency, quality control and workforce management. Textile organizations employ AI technologies for automated production planning, quality inspection, supply chain optimization, predictive maintenance, customer demand forecasting and employee performance monitoring (Wang et al., 2020). In Pakistan, the textile industry represents the backbone of the national economy and has increasingly invested in AI-driven digital transformation initiatives to improve productivity, international competitiveness and operational sustainability. The integration of AI technologies into textile organizations has significantly altered employees' work patterns, learning mechanisms, emotional experiences and performance expectations.

Although AI provides substantial operational advantages, researchers argue that its organizational implications extend beyond technological efficiency and significantly influence human behavior and workplace psychology (Yam et al., 2021). Employees increasingly interact with intelligent systems that influence communication, decision-making, learning opportunities and emotional responses. Consequently, understanding the behavioral and psychological implications of AI implementation has become an important area of organizational research.

The present study draws theoretical support primarily from the Theory of Perception proposed by Gray et al. (2007), which explains how individuals interpret technological systems based on perceived intelligence, emotional capability and agency. According to the theory, employees' reactions toward AI systems depend upon how they perceive AI technologies in terms of usefulness, supportiveness, objectivity and emotional understanding. These perceptions influence employees' learning behavior, emotional responses and work performance within organizational environments.

2.2 Artificial Intelligence and Employee Learning

Employee learning refers to the continuous process through which employees acquire knowledge, improve competencies, develop skills and adapt to organizational and technological changes (Argyris & Schön, 1978). Learning has become increasingly important in modern organizations because technological advancement continuously transforms work processes and competency requirements. Organizations increasingly rely on AI-powered learning systems to improve employee development, knowledge sharing and workplace adaptability.

AI technologies significantly enhance organizational learning environments through personalized training systems, real-time performance feedback, intelligent knowledge management systems and predictive learning analytics (Jia et al., 2023). AI-supported

systems can analyze employees' strengths, weaknesses, performance trends and learning needs to provide customized developmental recommendations and targeted training opportunities. According to Tong et al. (2021), AI-based learning systems improve employees' ability to access relevant information quickly, enabling more effective problem-solving and decision-making within organizational settings.

Researchers argue that AI-driven learning mechanisms improve employee adaptability by supporting continuous learning and reducing knowledge gaps within technologically dynamic workplaces (Fountaine et al., 2019). AI technologies facilitate self-directed learning by enabling employees to access digital learning platforms, virtual simulations, automated coaching systems and intelligent feedback mechanisms that improve professional development outcomes (Chen et al., 2022). Moreover, AI systems can provide immediate feedback regarding task performance, enabling employees to identify weaknesses and improve competencies more efficiently than traditional learning systems (Kluger & Denisi, 1996).

Within the textile industry, employee learning is particularly important because textile organizations continuously experience technological transformation, production modernization, quality management innovation and operational automation. AI-supported systems help textile employees improve technical competencies, production management skills, machine-handling capabilities and operational decision-making effectiveness (Wang et al., 2020). Employees exposed to AI-supported learning environments are generally more capable of adapting to organizational changes and technological advancements.

Several empirical studies support the positive relationship between AI and employee learning. Jia et al. (2023) found that AI-driven learning systems significantly improve employees' skill development, learning efficiency and workplace adaptability. Similarly, researchers opined that intelligent learning systems positively influence employees' professional growth and knowledge acquisition capabilities. Tong et al. (2021) further argued that AI enhances organizational learning by facilitating timely access to information, performance analytics and personalized developmental support.

However, some researchers caution that excessive reliance on AI technologies may reduce human interaction and collaborative learning opportunities within workplaces (Jarrahi, 2018). Employees may become dependent on automated systems, potentially weakening creativity, critical thinking and interpersonal knowledge-sharing mechanisms. Nevertheless, the majority of contemporary studies indicate that AI generally supports employee learning when implemented effectively within organizational environments.

Based on the above discussion, the present study proposes the following hypothesis:

H1: Artificial Intelligence has a significant positive impact on employee learning in the textile industry of Pakistan.

2.3 Artificial Intelligence and Employees' Emotional Behavior

Employees' emotional behavior refers to emotional reactions, psychological experiences, feelings and attitudes developed through workplace interactions and organizational environments (Watson & Tellegen, 1985). Emotional behavior significantly influences employees' motivation, workplace satisfaction, organizational commitment, engagement and overall well-being. The increasing integration of AI technologies into workplaces has generated considerable debate regarding their psychological and emotional implications for employees.

The Theory of Perception suggests that employees develop emotional responses toward AI systems based on perceived intelligence, objectivity, emotional understanding and technological capability (Gray et al., 2007). Employees may perceive AI systems positively when they reduce workload, improve task accuracy and provide efficient support mechanisms. Conversely, employees may develop negative emotional reactions when AI technologies increase surveillance, reduce autonomy, create uncertainty, or generate fears regarding job replacement (Mahmud et al., 2022).

Researchers argue that AI implementation produces both positive and negative emotional outcomes depending upon organizational context, employee perceptions and technological design. Positive emotional responses include increased confidence, reduced workload stress, improved task efficiency and enhanced workplace convenience (Yam et al., 2021). AI-supported systems can reduce repetitive tasks and administrative burdens, enabling employees to focus on meaningful and strategic responsibilities that improve job satisfaction and motivation.

However, several studies highlight negative emotional consequences associated with AI integration within workplaces. Mahmud et al. (2022) found that employees often experience technological anxiety, emotional stress, uncertainty and fear of replacement when organizations introduce AI-based systems. Algorithmic management and AI-driven monitoring systems may also create perceptions of excessive surveillance, reduced privacy and diminished human autonomy within workplaces (Jarrahi, 2018). Such conditions may negatively affect employees' emotional stability, morale and workplace satisfaction.

Within textile organizations, employees operate in highly demanding environments characterized by production pressure, quality standards, operational targets and technological adaptation. The introduction of AI technologies may intensify emotional pressures if employees perceive AI systems as threatening rather than supportive. According to Fredrickson's (2001) broaden-and-build theory, positive emotional experiences improve employees' cognitive functioning, creativity, resilience and workplace effectiveness, whereas negative emotional states weaken psychological well-being and performance outcomes.

Yam et al. (2021) argued that employees often perceive AI systems as analytically intelligent but emotionally detached because AI lacks empathy, emotional sensitivity and interpersonal understanding. Consequently, organizations must carefully manage AI implementation

processes to minimize negative emotional consequences and improve employee acceptance of intelligent technologies.

Empirical evidence further supports the relationship between AI and emotional behavior. Luo et al. (2021) reported that AI-driven workplaces significantly influence employees' emotional responses, psychological comfort and workplace attitudes. Similarly, Mahmud et al. (2022) concluded that employee perceptions regarding AI fairness, transparency and organizational support determine emotional reactions toward technological transformation. Based on the literature, the following hypothesis is proposed:

H2: Artificial Intelligence has a significant impact on employees' emotional behavior in the textile industry of Pakistan.

2.4 Employee Learning and Employee Performance

Employee performance refers to the effectiveness with which employees accomplish organizational tasks, responsibilities and performance objectives (Chow, 1983). Organizations increasingly recognize learning as a strategic capability that enhances employee productivity, innovation, adaptability and work effectiveness. Employees who continuously learn and develop competencies generally demonstrate improved decision-making, problem-solving and task performance within organizational environments.

Learning significantly improves employees' technical knowledge, professional competencies and behavioral capabilities, enabling employees to perform organizational tasks more effectively (Argyris & Schön, 1978). AI-supported learning systems further strengthen performance outcomes by providing employees with real-time feedback, continuous skill development opportunities and performance-enhancing recommendations (Tong et al., 2021). Employees who possess strong learning capabilities are generally more capable of adapting to technological changes and operational challenges within dynamic organizational settings.

Kluger and Denisi (1996) argued that timely feedback and continuous learning mechanisms significantly improve employee motivation, productivity and performance effectiveness. Similarly, Belschak and Hartog (2009) found that learning-oriented employees demonstrate higher innovation, organizational commitment and workplace contribution. Learning enables employees to improve efficiency, reduce errors and enhance service quality within organizational operations.

Within textile organizations, learning is particularly important because employees continuously encounter evolving production technologies, operational procedures, quality management systems and automation processes. Employees who actively engage in learning processes are better equipped to manage complex textile operations and deliver improved organizational outcomes.

Several empirical studies support the positive relationship between learning and

performance. Jia et al. (2023) concluded that AI-enhanced learning environments significantly improve employee productivity and work effectiveness. Also found that continuous learning positively influences employees' professional competence and workplace efficiency. Therefore, the following hypothesis is proposed:

H3: Employee learning has a significant positive impact on employee performance in the textile industry of Pakistan.

2.5 Emotional Behavior and Employee Performance

Employees' emotional behavior plays a critical role in determining workplace productivity, motivation, engagement and organizational effectiveness. Positive emotional experiences generally enhance employees' concentration, creativity, interpersonal relations and commitment toward organizational objectives, whereas negative emotional states reduce morale, efficiency and work effectiveness (Fredrickson, 2001).

Researchers argue that emotional well-being directly influences employees' psychological energy and behavioral engagement within workplaces (Watson & Tellegen, 1985). Employees experiencing positive emotions such as confidence, motivation, satisfaction and psychological comfort generally perform organizational tasks more effectively. In contrast, stress, anxiety, frustration and emotional exhaustion weaken employees' ability to maintain productivity and organizational commitment.

Within AI-supported workplaces, emotional behavior becomes increasingly important because employees continuously interact with intelligent systems, automated feedback mechanisms and digital monitoring tools. Positive emotional adaptation toward AI technologies may improve employee acceptance, engagement and productivity, whereas negative emotional reactions may reduce work motivation and increase resistance toward technological transformation (Mahmud et al., 2022).

Fredrickson (2001) argued that positive emotional states broaden employees' cognitive capabilities and strengthen resilience, creativity and problem-solving abilities. Similarly, Belschak and Hartog (2009) found that emotionally satisfied employees demonstrate higher organizational citizenship behavior, innovation and performance effectiveness.

In textile environments characterized by production pressure, operational targets and technological adaptation, emotional stability is essential for maintaining high productivity and operational efficiency. Employees experiencing positive emotional behavior are generally more capable of handling workplace challenges and maintaining performance consistency. Consequently, the following hypothesis is proposed:

H4: Employees' emotional behavior has a significant impact on employee performance in the textile industry of Pakistan.

2.6 Artificial Intelligence and Employee Performance

AI technologies increasingly influence employee performance through automation, intelligent decision support, performance analytics and operational assistance. AI systems improve organizational efficiency by reducing human errors, enhancing information processing speed and supporting data-driven decision-making processes (Agrawal et al., 2018).

Researchers argue that AI positively affects employee performance by improving task accuracy, reducing workload, supporting strategic decision-making and facilitating operational efficiency (Fountaine et al., 2019). AI-powered systems help employees perform tasks more effectively by providing predictive insights, automated recommendations and intelligent workflow support.

Within textile organizations, AI technologies improve production planning, quality control, inventory management, machine efficiency, workforce coordination and operational monitoring systems. Employees working with AI-supported systems often demonstrate higher efficiency and improved task management capabilities (Wang et al., 2020). AI technologies further support performance enhancement through intelligent feedback systems and automated assistance mechanisms.

However, some researchers argue that AI may negatively affect employee performance if employees experience technological anxiety, emotional stress, or resistance toward intelligent systems (Mahmud et al., 2022). Excessive dependence on automation may also reduce human judgment and workplace creativity. Nevertheless, the majority of empirical studies indicate that AI generally improves employee productivity and operational effectiveness when implemented appropriately. Accordingly, the following hypothesis is proposed:

H5: Artificial Intelligence has a significant positive impact on employee performance in the textile industry of Pakistan.

2.7 Mediating Role of Employee Learning

Employee learning is considered an important mediating mechanism through which AI influences organizational performance outcomes. AI systems improve learning opportunities by providing personalized training, real-time feedback, knowledge accessibility and intelligent developmental support (Jia et al., 2023). These learning improvements subsequently enhance employees' competencies, adaptability and task effectiveness, leading to improved job performance.

Researchers argue that learning acts as a behavioral pathway connecting technological support with organizational productivity (Tong et al., 2021). Employees who effectively utilize AI-supported learning systems are more likely to develop professional competencies and performance capabilities required in technologically advanced workplaces.

Empirical evidence suggests that AI-driven learning environments significantly strengthen employee productivity and organizational contribution. Therefore, employee learning may explain how AI technologies indirectly improve performance outcomes within organizational settings. Based on the literature, the following hypothesis is proposed:

H6: Employee learning mediates the relationship between Artificial Intelligence and employee performance.

2.8 Mediating Role of Emotional Behavior

Employees' emotional behavior may also mediate the relationship between AI technologies and employee performance. AI systems influence employees' emotional experiences through perceptions of technological support, fairness, workload reduction, monitoring and job security (Mahmud et al., 2022). These emotional responses subsequently influence motivation, workplace engagement and performance effectiveness.

Positive emotional responses toward AI systems may strengthen employee confidence, satisfaction and organizational commitment, ultimately improving performance outcomes. Conversely, negative emotional experiences such as anxiety, stress and fear may weaken employees' productivity and workplace effectiveness.

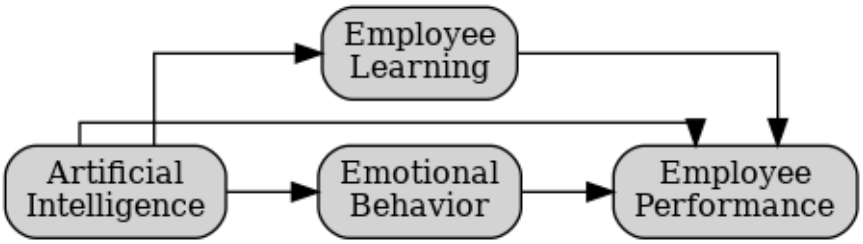
Researchers emphasize that emotional experiences significantly shape employees' behavioral responses toward organizational technologies and workplace transformation (Fredrickson, 2001). Consequently, emotional behavior represents an important psychological mechanism explaining how AI technologies influence job performance within organizational environments. Thus, the following hypothesis is proposed:

H7: Employees' emotional behavior mediates the relationship between Artificial Intelligence and employee performance.

2.9 Conceptual Framework

The framework illustrates the direct effect of Artificial Intelligence on Employee Learning, Emotional Behavior and Employee Performance, along with the mediating influence of Employee Learning and Emotional Behavior on Employee Performance.

Figure 1
Conceptual Framework



3. Research Methodology

3.1 Research Design

The present study is based on a positivist research philosophy and follows a deductive approach to examine the effect of Artificial Intelligence (AI) on employee learning and emotional behavior and its impact on employee performance within the textile industry of Pakistan. A quantitative research design has been adopted to test the proposed hypotheses empirically. The study is causal and explanatory in nature, as it investigates cause-and-effect relationships among the variables.

A survey-based strategy was employed to collect primary data from employees working in textile organizations. This design is appropriate because it allows the collection of standardized responses from a large number of respondents and enables statistical testing using SPSS.

3.2 Population, Sample Size and Sampling Technique

The population of the study consists of employees working in public and private textile industry organizations in Pakistan. The textile sector is selected due to its critical importance in Pakistan's economy, employment generation and increasing adoption of AI-based technologies in production, management and human resource functions.

A total of 500 respondents were selected as the sample size for this study. The sample includes employees from different functional departments such as production, quality control, administration, human resource and operations.

The study used convenience sampling technique, which is a non-probability sampling method. This technique was chosen due to accessibility constraints, time limitations and the difficulty of obtaining a complete sampling frame from textile organizations across Pakistan. Despite its limitations, convenience sampling is widely used in organizational behavior and HRM research when access to respondents is restricted.

3.3 Data Collection and Measurement of Variables

Primary data was collected through a structured questionnaire survey. The questionnaire was distributed both physically and electronically among employees working in textile firms. Respondents were informed about the academic purpose of the study and confidentiality of responses was ensured to obtain unbiased data.

The questionnaire was divided into two sections; Section A: Demographic information (gender, age, organization type, experience, etc.) and Section B: Measurement items for study variables including Artificial Intelligence, Employee Learning, Emotional Behavior and Employee Performance. A five-point Likert scale was used; 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Artificial intelligence was measured using items related to perceived AI usage in organizational processes such as automation, decision support, training systems and

performance monitoring. Items were adapted from prior studies on AI in organizational settings (Agrawal et al., 2018; Jarrahi, 2018). Employee learning was measured through indicators such as skill development, knowledge acquisition, adaptability and learning effectiveness. Measurement items were adapted from organizational learning literature (Argyris & Schön, 1978; Jia et al., 2023). Emotional behavior was assessed through employee emotional responses such as motivation, stress, satisfaction, anxiety and workplace emotional stability. Items were adapted from emotional behavior and affective theory studies (Watson & Tellegen, 1985; Fredrickson, 2001). Employee performance was measured using indicators such as task efficiency, productivity, work quality, goal achievement and overall job effectiveness. Items were adapted from performance measurement literature (Chow, 1983; Belschak & Hartog, 2009).

The collected data was analyzed using SPSS software. The following statistical techniques were applied:

- Descriptive statistics (frequency, percentage, mean, standard deviation)
- Reliability analysis using Cronbach's Alpha
- Validity analysis (Convergent validity using AVE and Composite Reliability)
- Correlation analysis (Pearson correlation matrix)
- Regression analysis for hypothesis testing
- Mediation analysis using indirect effects and bootstrapping approach
- The significance level was set at $p < 0.05$ for hypothesis testing.

3.4 Reliability and Validity of Instruments

To ensure the quality of the research instrument, both reliability and validity tests were conducted. Reliability was assessed using Cronbach's Alpha to measure internal consistency of the scales. A value of 0.70 or above was considered acceptable. Convergent validity was assessed through Average Variance Extracted (AVE) and Composite Reliability (CR). The instrument was considered valid if AVE values exceeded 0.50 and CR values exceeded 0.70.

3.5 Ethical Considerations

The study ensured strict ethical standards. Participation was voluntary and respondents were informed about the purpose of the research. Confidentiality and anonymity were maintained throughout the data collection and analysis process. No personal identifiers were recorded and data was used strictly for academic purposes.

4. Results of Statistical Analysis

Following tables illustrate the results of statistical analysis:

Table 1
Demographic Profile of Respondents

Variable	Frequency	Percentage
Male	312	62.4%
Female	188	37.6%

Age 24-30	210	42.0%
Age 31-40	198	39.6%
Age 41+	92	18.4%

Table 2
Reliability Statistics

Variable	No. of Items	Cronbach Alpha
Artificial Intelligence	6	0.891
Employee Learning	5	0.872
Emotional Behavior	5	0.854
Employee Performance	6	0.903

Table 3
Convergent Validity Analysis

Construct	AVE	Composite Reliability
Artificial Intelligence	0.67	0.91
Employee Learning	0.64	0.89
Emotional Behavior	0.61	0.87
Employee Performance	0.7	0.92

Table 4
Correlation Matrix

Variables	AI	EL	EB	EP
AI	1.0	0.69	0.58	0.71
EL	0.69	1.0	0.61	0.74
EB	0.58	0.61	1.0	0.67
EP	0.71	0.74	0.67	1.0

Table 5
Regression Analysis

Hypothesis	Relationship	Beta	t-value	p-value	Decision
H1	AI → Employee Learning	0.69	12.54	0.000	Supported
H2	AI → Emotional Behavior	0.58	10.83	0.000	Supported
H3	Employee	0.47	9.92	0.000	Supported

	Learning → Employee Performance				
H4	Emotional Behavior → Employee Performance	0.39	8.76	0.000	Supported
H5	AI → Employee Performance	0.51	11.21	0.000	Supported

Table 6
Mediation Analysis

Hypothesis	Mediation Path	Indirect Effect	Boot LLCI	Boot ULCI	Decision
H6	AI → Employee Learning → Employee Performance	0.32	0.18	0.44	Partial Mediation Supported
H7	AI → Emotional Behavior → Employee Performance	0.21	0.11	0.33	Partial Mediation Supported

Table 7
Model Summary

Model	R	R Square	Adjusted R Square	F-value	Sig.
Model 1	0.81	0.66	0.65	124.77	0.000

The statistical analysis indicates that Artificial Intelligence significantly influences employees' learning, emotional behavior and employee performance within the textile industry of Pakistan. Reliability statistics demonstrate strong internal consistency for all study constructs, while validity measures confirm acceptable convergent validity and composite reliability values. Regression analysis reveals that AI positively affects employee learning and performance, while emotional behavior also significantly contributes toward employee performance outcomes. Mediation analysis further confirms that employee learning and emotional behavior partially mediate the relationship between Artificial Intelligence and employee performance

4.1 Discussion

The findings of the present study provide substantial empirical evidence regarding the influence of Artificial Intelligence (AI) on employee learning, emotional behavior and employee performance within the textile industry of Pakistan. The statistical analysis confirms that AI technologies significantly affect employees' professional development, emotional experiences and workplace productivity in technologically transforming organizational environments. The study further demonstrates that employee learning and emotional behavior play important mediating roles in strengthening the relationship between AI and employee performance.

The results of the study indicate that Artificial Intelligence has a significant positive effect on employee learning within the textile industry of Pakistan. The regression findings reveal that AI-supported systems enhance employees' ability to acquire knowledge, improve technical competencies and adapt to modern production technologies and organizational changes. These findings are consistent with previous studies conducted by Jia et al. (2023), Tong et al. (2021) concluded that AI-driven learning systems improve workplace adaptability, knowledge acquisition and professional development. In the textile sector, where automation, intelligent production systems and digital manufacturing technologies are increasingly adopted, employees require continuous learning and technical up-skilling to remain productive and competitive. AI-supported training systems, real-time feedback mechanisms and intelligent performance analytics help employees improve operational understanding and task efficiency. The findings therefore confirm that AI technologies positively contribute toward organizational learning environments and employee development capabilities.

The study also confirms that Artificial Intelligence significantly influences employees' emotional behavior. The findings suggest that employees develop both positive and negative emotional responses toward AI technologies depending upon perceptions regarding technological support, workplace security and operational adaptation. Many employees perceive AI systems positively because they improve task efficiency, reduce repetitive workload and facilitate operational support. However, some employees experience emotional stress, technological anxiety, uncertainty and concerns regarding automation and job replacement. These findings support the arguments presented by Mahmud et al. (2022) and Yam et al. (2021), who emphasized that AI integration within workplaces generates complex emotional reactions among employees. Within the textile industry of Pakistan, employees often operate in labor-intensive environments where technological modernization may create uncertainty regarding job stability and role transformation. Consequently, employees' emotional responses toward AI technologies significantly influence their workplace behavior and organizational adjustment.

The findings further reveal that employee learning has a significant positive impact on employee performance. Employees who continuously engage in learning activities, adapt to technological systems and improve professional competencies demonstrate higher productivity, efficiency and operational effectiveness. These findings align with

organizational learning theory and prior research conducted by Kluger and Denisi (1996) and Belschak and Hartog (2009), who argued that learning-oriented employees are more innovative, adaptable and performance-oriented. Within the textile industry, employees possessing updated technical knowledge and operational understanding are better capable of handling modern production systems, quality standards and technological workflows. The findings therefore indicate that employee learning serves as an important determinant of workplace productivity and organizational contribution.

Similarly, the study confirms that employees' emotional behavior significantly affects employee performance. Employees experiencing positive emotional states such as confidence, satisfaction, motivation and psychological comfort demonstrate higher workplace engagement and productivity. In contrast, emotional stress, frustration, anxiety and technological fear negatively affect concentration, morale and work effectiveness. These findings are supported by Fredrickson's (2001) broaden-and-build theory, which explains that positive emotional experiences strengthen cognitive functioning, creativity, resilience and workplace performance. The textile industry often involves operational pressure, production deadlines and performance expectations; therefore, employees' emotional stability becomes critically important for maintaining productivity and organizational efficiency. The findings demonstrate that emotional well-being remains a significant factor influencing employee performance within AI-supported organizational environments.

The regression analysis additionally confirms that Artificial Intelligence directly and positively influences employee performance. AI-supported technologies improve operational efficiency, information processing, workflow management, production coordination and task accuracy, enabling employees to perform responsibilities more effectively. These findings support previous studies conducted by Agrawal et al. (2018) and Fountaine et al. (2019), which concluded that AI technologies improve organizational productivity and employee effectiveness through automation and intelligent decision-support systems. In textile organizations, AI applications such as automated production planning, intelligent quality control systems and predictive operational analytics significantly improve employees' operational efficiency and workplace performance.

An important contribution of this study is the confirmation of the mediating roles of employee learning and emotional behavior in the relationship between Artificial Intelligence and employee performance. The mediation analysis demonstrates that AI technologies improve employee performance not only directly but also indirectly through enhanced learning opportunities and emotional responses. Employee learning partially mediates the AI-performance relationship because AI systems facilitate continuous learning, professional development and competency improvement, which subsequently strengthen employee productivity and workplace effectiveness. Similarly, emotional behavior partially mediates the relationship between AI and employee performance because employees' emotional experiences significantly shape motivation, engagement and organizational commitment toward AI-supported work environments.

The findings collectively indicate that AI implementation within the textile industry of Pakistan should not be viewed solely as a technological advancement but also as a behavioral and organizational transformation process. Organizations that effectively manage employee learning and emotional adaptation during AI integration are more likely to achieve improved performance outcomes and sustainable organizational development. The study therefore highlights the importance of balancing technological innovation with employee-centered management practices to maximize the positive effects of AI within industrial workplaces.

4.2 Conclusion

The present study examined the effect of Artificial Intelligence on employee learning and emotional behavior and its subsequent impact on employee performance within the textile industry of Pakistan. The findings of the study provide strong empirical evidence that AI technologies significantly influence employees' professional development, emotional experiences and workplace productivity in contemporary organizational environments. The study further confirms that employee learning and emotional behavior play important mediating roles in strengthening the relationship between AI and employee performance.

The results reveal that AI technologies positively contribute toward employee learning by improving access to information, facilitating skill development, enhancing adaptability and supporting continuous professional growth. Employees working within AI-supported environments demonstrate improved learning capabilities and greater preparedness for handling technological and operational challenges. At the same time, the study identifies that AI significantly affects employees' emotional behavior. Employees develop varying emotional responses toward AI systems depending upon organizational support, technological understanding and perceptions regarding workplace security and automation.

The findings also establish that employee learning and emotional behavior significantly influence employee performance within the textile industry. Employees who continuously learn and maintain positive emotional states are more productive, adaptable, motivated and operationally effective. Furthermore, AI technologies directly improve employee performance by enhancing workflow efficiency, reducing operational errors, supporting decision-making processes and improving organizational coordination.

The mediation analysis further demonstrates that employee learning and emotional behavior serve as important behavioral mechanisms through which AI technologies influence employee performance. These findings emphasize that organizational success in technologically transforming environments depends not only on AI implementation itself but also on employees' psychological adaptation and developmental support.

Overall, the study concludes that Artificial Intelligence represents both a technological and human-centered organizational transformation tool within the textile industry of Pakistan. Organizations that effectively integrate AI technologies while simultaneously supporting employee learning and emotional well-being are more likely to achieve sustainable productivity, workforce stability and competitive advantage in modern industrial environments.

4.3 Recommendations

Based on the findings of the study, several recommendations are proposed for textile organizations, policymakers and HR professionals operating within technologically evolving industrial environments.

First, textile organizations should develop comprehensive AI-based training and learning programs to improve employees' technological competencies and workplace adaptability. Continuous learning opportunities, digital skill development workshops and AI-supported professional training systems should be introduced to help employees effectively interact with intelligent technologies and modern production systems.

Second, organizations should implement employee-centered AI integration strategies that prioritize emotional well-being and psychological adjustment during technological transformation. Management should ensure transparent communication regarding AI implementation objectives to reduce uncertainty, technological anxiety and fears associated with automation and job replacement.

Third, HR departments should establish organizational counseling, emotional support and employee engagement mechanisms to minimize negative emotional reactions toward AI technologies. Employees should be encouraged to participate in decision-making processes related to technological change to improve acceptance and workplace confidence.

Fourth, textile organizations should balance automation with human resource development instead of relying excessively on technological systems alone. AI should be utilized as a supportive organizational tool that enhances employee productivity rather than replacing human contribution entirely.

Fifth, organizational leaders should promote a culture of continuous learning, innovation and technological adaptability within workplaces. Employees who actively engage in learning activities and technological development should be recognized and rewarded to strengthen motivation and organizational commitment.

Sixth, policymakers and industrial regulators should support technological modernization within the textile industry while simultaneously introducing workforce development policies that protect employees' professional growth and workplace stability during AI transformation.

Finally, organizations should regularly assess employees' emotional and behavioral responses toward AI systems to identify potential workplace stress, resistance, or adjustment issues before they negatively affect organizational performance and employee well-being.

4.4 Limitations of the Research Study

Despite its significant contributions, the present study contains several limitations that should be acknowledged.

First, the study focused exclusively on the textile industry of Pakistan; therefore, the findings may not be fully generalizable to other industries or international organizational environments with different technological and workforce dynamics.

Second, the study utilized a cross-sectional research design, which limits the ability to examine long-term behavioral and performance changes associated with AI implementation over time. Employees' emotional behavior and learning adaptation may evolve differently during prolonged technological transformation processes.

Third, the study relied on self-reported survey responses, which may introduce common method bias and subjective response tendencies. Employees' perceptions regarding AI technologies and emotional experiences may vary based on personal attitudes and workplace conditions.

Fourth, the study focused specifically on employee learning and emotional behavior as mediating variables, whereas other organizational and psychological factors such as organizational culture, leadership style, technological readiness, employee resilience and job insecurity may also influence employee performance within AI-supported workplaces.

Fifth, the study primarily examined AI from a general organizational perspective without differentiating between specific AI technologies such as robotics, predictive analytics, intelligent monitoring systems, or machine-learning applications. Different AI systems may produce varying behavioral and performance effects within organizational environments.

4.5 Future Directions for Researchers

Future researchers may further extend this study in several important directions to improve understanding regarding the organizational and behavioral implications of Artificial Intelligence.

First, future studies may conduct comparative research across multiple industries such as banking, healthcare, education, manufacturing, telecommunications and public sector organizations to examine whether employees' learning behavior, emotional responses and performance outcomes differ across industrial environments. Second, researchers may adopt longitudinal research designs to examine long-term effects of AI implementation on employees' behavioral adaptation, psychological well-being, organizational commitment and career development over extended periods of technological transformation. Third, future studies may investigate additional mediating and moderating variables such as organizational culture, employee resilience, technological readiness, leadership support, psychological empowerment, job insecurity, workplace stress and innovation climate to develop more comprehensive organizational behavior models related to AI adoption. Fourth, researchers may utilize mixed-method or qualitative research approaches to gain deeper insights into employees' emotional experiences, technological perceptions and workplace adaptation processes associated with AI integration. Fifth, future studies may examine generational differences regarding AI acceptance and behavioral adaptation by comparing

Generation Z, Millennials, Generation X and senior employees within technologically transforming workplaces.
Sixth, future researchers may investigate ethical dimensions of AI implementation including workplace surveillance, algorithmic fairness, employee privacy and organizational justice within industrial environments.

Finally, future studies may compare AI adoption and employee behavioral outcomes between developing and developed economies to understand how economic conditions, technological infrastructure and organizational culture influence employee responses toward Artificial Intelligence.

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