

AI-Driven Transformation and Its Human Side: Employee wellbeing and Managerial Practices in Indian SMEs

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Abstract

Objective: This study explores the impact of artificial intelligence (AI) adoption on employee wellbeing in Indian small and medium-sized enterprises (SMEs). The aim is to examine how AI adoption creates both job resources and job demands, and how managerial practices influence the balance between these outcomes.

Methodology: A mixed-methods approach was employed. Quantitative data were collected through surveys from 450 employees across 120 SMEs, and qualitative insights were drawn from 20 semi-structured interviews. Structural equation modeling (SEM) was used to test the proposed framework, supported by reliability and validity checks, correlation analysis, and moderation analysis.

Findings: AI adoption has a dual effect: it boosts job resources, such as efficiency, upskilling, and task enrichment, but also creates demands, including technostress, job insecurity, and increased monitoring. Resources improve employee wellbeing; demands harm it. Managerial practices such as training, transparent communication, and participatory leadership can reduce risks and enhance benefits. Sectoral and demographic differences are evident among manufacturing workers, with older employees tending to feel more insecure, while younger workers perceive more growth opportunities. Qualitative themes support these findings, highlighting the managerial support's role in shaping perceptions.

Implications: The study makes theoretical contributions by extending the Job Demands-Resources model and the sociotechnical systems perspective to Indian SMEs. It also offers practical and policy insights on managing AI adoption through inclusive training, responsible implementation, and workforce readiness initiatives.

Originality/Value: By focusing on SMEs in a developing economy, this study enriches the literature on AI adoption and employee wellbeing, highlighting the importance of a human-centered approach to digital transformation.

Keywords: Artificial Intelligence (AI) Adoption, Employee wellbeing, Small and Medium-Sized Enterprises (SMEs), Job Demands–Resources (JD–R) Model, Managerial Practices, Digital Transformation

Introduction

Artificial Intelligence (AI) has emerged as one of the most transformative technologies in business and management. Globally, organizations are using AI to streamline operations, enhance decision-making, and create new value through automation and predictive analytics. For Small and Medium Enterprises (SMEs), the potential is especially significant. Limited resources, lean structures, and intense competition make AI adoption a viable means to

enhance efficiency and competitiveness (Sánchez et al., 2025). In India, where SMEs account for nearly 30 percent of GDP and employ over 110 million people, the stakes are particularly high: AI adoption can influence not only firm performance but also wider economic and workforce outcomes (Ainaddis, 2025). However, the adoption of AI has implications for employees. Research highlights the dual nature of AI-driven change: while it can free employees from repetitive tasks and open up opportunities for skill development, it can also lead to stress, job insecurity, and a work-life imbalance. These negative effects are often summarized under the concept of technostress, which refers to psychological strain caused by demands related to technology (Kumar, 2024). Evidence from India suggests that such stress is associated with lower satisfaction and higher burnout, particularly in knowledge-based professions (Sharma, 2024). SMEs, which often lack formal human resource systems and structured change management processes, may find these challenges particularly difficult to handle (Nascimento, 2025).

Another aspect is surveillance and monitoring. AI-enabled tools often involve tracking performance and predictive analytics. While these can enhance efficiency, studies indicate they may undermine trust, reduce autonomy, and increase anxiety among employees (Kalischko et al., 2021). The American Psychological Association (2023) emphasizes that monitoring practices should be transparent and participatory to prevent harm to employee wellbeing. In SMEs, where organizational cultures are often informal, the sudden implementation of such systems can be particularly disruptive if not managed carefully. However, the human side of AI adoption is not entirely negative. When supported by training, transparent communication, and participative rollout, AI can boost job satisfaction, foster creativity, and create opportunities for skill development. Recent evidence from Indian MSMEs suggests that the adoption of AI has a direct impact on psychological wellbeing, highlighting the need for supportive managerial practices (Prajapati, 2025). Similarly, research on adoption in SMEs emphasizes the importance of knowledge and leadership in shaping how employees perceive and adapt to AI (Rao & Singh, 2025). This duality—opportunity versus challenge—frames the core issue explored in this context. While existing studies often focus on the technological or organizational benefits of AI, they pay limited attention to its human implications, especially in SMEs. The Indian SME sector, given its economic importance and structural vulnerabilities, offers a vital context for such research. Accordingly, this study addresses two key questions: (1) How does AI adoption influence employee wellbeing in Indian SMEs? and (2) Which managerial and organizational practices can balance technological efficiency with the human side of transformation? By addressing these questions, the paper makes three contributions to the literature. First, it highlights the underexplored human implications of AI adoption in SMEs in a developing economy. Second, it integrates perspectives from sociotechnical systems theory and wellbeing research to provide a holistic understanding of AI-driven transformation. Third, it offers practical insights for managers and policymakers on adopting AI responsibly, ensuring that competitiveness does not come at the expense of employee wellbeing.

Literature Review

AI adoption has accelerated worldwide, but SMEs face both unique opportunities and ongoing barriers. SMEs often view AI as a means to enhance efficiency, decision-making, and competitiveness, despite limited resources (Sánchez et al., 2025). In India, SMEs play a vital role in GDP and employment, making their adoption of AI key to economic growth (Ainaddis, 2025). However, obstacles such as financial constraints, a lack of technical knowledge, and limited organizational readiness frequently hinder implementation (Bhalerao

et al., 2022). Recent studies have highlighted that developing knowledge resources and leadership skills is crucial for SMEs to adopt AI successfully (Rao & Singh, 2025). The implementation of AI transforms work processes and job roles, presenting both risks and opportunities for workers. On the plus side, AI can automate repetitive tasks and create opportunities for skill development. On the downside, employees might face stress, job insecurity, or struggles to balance work and personal life. This issue, known as technostress, refers to the psychological strain caused by the pressures associated with technology (Kumar, 2024). Evidence from India suggests that technostress is associated with burnout, anxiety, and lower satisfaction among knowledge workers (Sharma, 2024). Meanwhile, some experts suggest that employees might experience "techno-eustress," a positive reaction when technology use is supported by adequate resources and assistance (Nascimento, 2025).

AI-enabled monitoring and data-driven oversight have become more prevalent with digital transformation. Electronic performance monitoring (EPM) is often perceived as a "double-edged sword," with the potential to enhance accountability while also increasing employee stress (Kalischko et al., 2021). The American Psychological Association (2023) cautions that monitoring can undermine employee trust and wellbeing unless it is implemented transparently and ethically. In SMEs, where organizational practices are often informal, sudden adoption of monitoring technologies without dialogue may intensify employee resistance and anxiety. Emerging studies on Indian SMEs highlight the psychological and organizational effects of AI adoption. Prajapati (2025) found that the adoption of AI directly impacts employee wellbeing in MSMEs, with both positive and negative outcomes depending on the level of managerial support. Similarly, Bhalerao et al. (2022) report that while SMEs recognize efficiency gains, they often underestimate the challenges that employees face during the adoption process. These findings underscore the importance of participatory leadership, training, and transparent communication in ensuring that AI enhances, rather than compromises, employee wellbeing.

Gaps in Existing Research

Although global research has examined AI adoption and its organizational impacts, few studies have focused on the human aspect of AI in SMEs within developing economies. In the Indian context, research remains scattered, with most efforts addressing adoption drivers or firm performance rather than employee experiences. The particular conditions of Indian SMEs, such as resource limitations, informality, and economic significance, make them a significantly relevant yet underexamined setting for this research. Therefore, the aim is to fill these gaps by combining insights from sociotechnical systems theory and wellbeing research to explore how the adoption of AI influences employees in Indian SMEs.

Theoretical Framework and Hypotheses

Sociotechnical Systems Perspective

The sociotechnical systems perspective posits that organizational outcomes are contingent upon the joint optimization of technology and people (Trist & Bamforth, 1951). When organizations adopt new technologies, outcomes are not solely determined by the technical system but by how technology interacts with the social system. In the context of AI adoption, this perspective highlights the importance of aligning AI tools with employees' skills, tasks, and organizational practices. Poor alignment may generate stress, insecurity, or resistance, whereas participatory implementation can support positive outcomes such as skill development and enhanced wellbeing.

Job Demands–Resources (JD–R) Model

The Job Demands–Resources (JD–R) model provides another useful lens for examining AI adoption. According to this framework, job demands (e.g., workload, monitoring, skill requirements) can strain employees, while job resources (e.g., training, autonomy, supportive leadership) buffer stress and enhance motivation (Bakker & Demerouti, 2007). Applied to AI adoption in SMEs, AI may introduce new demands—such as technostress, surveillance, and job insecurity—while also offering resources, including efficiency gains and opportunities for skill enhancement. Whether employees experience positive or negative outcomes depends on the balance between these demands and resources.

Conceptual Framework

Bringing together the sociotechnical perspective and the JD–R model, this study proposes that AI adoption in SMEs influences employee wellbeing through both demands and resources. Job insecurity, technostress, and electronic monitoring represent the demand side, while upskilling opportunities, task simplification, and managerial support represent the resource side. The organizational practices of SMEs—such as training, transparent communication, and participative leadership—are expected to shape how employees perceive and experience these demands and resources.

Hypotheses Development

Based on the above theoretical grounding, the following hypotheses are proposed:

- **H1:** AI adoption in Indian SMEs is positively associated with opportunities for skill development and task efficiency.
- **H2:** AI adoption in Indian SMEs is positively associated with technostress and perceptions of job insecurity.
- **H3:** Employee wellbeing is negatively influenced by AI-related demands (technostress, monitoring, job insecurity).
- **H4:** Employee wellbeing is positively influenced by AI-related resources (upskilling, efficiency, enriched tasks).
- **H5:** Managerial practices such as training, transparent communication, and participative leadership moderate the relationship between AI adoption and employee wellbeing, mitigating negative effects and strengthening positive ones.

Research Methodology

Research Design

This study uses a mixed-methods design, combining both quantitative and qualitative approaches to capture the measurable and contextual aspects of AI adoption in Indian SMEs. A survey-based quantitative part provides statistical insights into the relationships between AI adoption, Job demands, Job resources, and Employee wellbeing. Complementary semi-structured interviews deepen the findings by providing a more thorough exploration of employees' and managers' experiences with AI adoption. The mixed-methods approach improves the study's strength by enabling triangulation of results (Creswell & Plano Clark, 2018).

Sample and Sampling Technique

The population of interest includes small and medium enterprises operating in India across the manufacturing, services, and technology sectors. SMEs were selected due to their

significant contribution to the national GDP and employment, as well as their increasing exposure to technological change. A purposive sampling technique was employed to identify SMEs that have adopted at least one AI-enabled tool (e.g., predictive analytics, customer relationship management systems, automated quality monitoring). The quantitative survey targeted employees working in these SMEs. A total of 120 SMEs were approached, and 450 valid responses were collected from employees across different organizational levels. For the qualitative component, 20 semi-structured interviews were conducted with SME managers and employees to gain contextual insights.

Data Collection

Data were collected in two phases. In the first phase, a structured questionnaire was given to employees. The questionnaire consisted of four sections: demographic details, level of AI adoption, perceived job demands and resources, and employee wellbeing indicators. Items for technostress, job insecurity, and monitoring were adapted from established scales (Kumar, 2024). Employee wellbeing was assessed using validated measures of job satisfaction, stress levels, and work–life balance. In the second phase, interviews were held with managers and employees to explore perceptions of surveillance, experiences with training, and managerial support. All interviews were transcribed and analyzed with participants' consent.

Measures

- **AI Adoption:** Measured using a scale adapted from prior SME adoption studies.
- **Job Demands:** Captured through indicators of technostress (Kumar, 2024), job insecurity, and monitoring intensity.
- **Job Resources:** Measured through items on task simplification, efficiency gains, and opportunities for upskilling.
- **Employee wellbeing:** Assessed through validated measures of job satisfaction, stress levels, and work–life balance.
- **Managerial Practices:** Evaluated using items on training opportunities, communication transparency, and participative leadership.

All constructs used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Reliability and validity were tested using Cronbach's alpha and confirmatory factor analysis (Hair, Black, Babin, & Anderson, 2019).

Data Analysis

The data analysis for this study was conducted with careful attention to ensuring validity, reliability, and transparency. For the qualitative part, thematic analysis was conducted using Braun and Clarke's six-step method, with two independent coders analyzing the interview transcripts to enhance consistency. The inter-coder reliability was strong, as indicated by a Cohen's Kappa coefficient of 0.82. Member checking was conducted by sharing initial themes with a subset of participants, who verified the accuracy and relevance of the interpretations. For the quantitative data, missing responses accounted for less than 5%. The data were assessed using Little's MCAR test, which indicated that the data were missing completely at random. As a result, multiple imputation methods were used to handle the missing values, reducing potential bias. Outliers were identified through Mahalanobis distance measures and Q-Q plot analysis, with actual data points kept to maintain data integrity. The statistical analysis employed structural equation modeling (SEM), which reported standardized effect sizes along with p-values to provide a clearer understanding of both the statistical and practical significance of the examined relationships. This thorough

and rigorous approach enhances confidence in the study's findings regarding how AI adoption impacts employee wellbeing in Indian SMEs.

Results

The analysis begins with descriptive statistics profiling the 450 respondents and AI adoption across Indian SMEs, revealing that customer relationship management (CRM) systems are most common (58%), followed by predictive analytics (46%) and quality monitoring (37%), with generative AI tools like chatbots still emerging (18%). AI adoption spans various sectors, with service firms (42%), manufacturing (36%), and technology (22%) being the most represented, and roles ranging from frontline employees (55%) to senior managers (15%). Demographically, the population is comprised of 63% men and 37% women. Subgroup analyses reveal sectoral and demographic variations where manufacturing SMEs report higher job insecurity linked to automation, service SMEs emphasize efficiency gains through CRM, and technology SMEs exhibit lower technostress levels. Gender-wise, female employees report higher technostress, while younger workers perceive AI more positively as a learning opportunity, compared to older employees who express concerns about job security.

Table 1. Respondent Demographics and SME Characteristics

Variable	Category	Percentage (%)
Industry	Services	42
	Manufacturing	36
	Technology	22
Organizational Role	Frontline Employees	55
	Mid-level Managers	30
	Senior Managers	15
AI Tools Adopted	Customer Relationship Management (CRM)	58
	Predictive Analytics	46
	Quality Monitoring	37
	Generative AI (e.g., chatbots)	18
Gender	Male	63
	Female	37
Work Experience	1–5 years	47
	6–10 years	34
	More than 10 years	19

Reliability and Validity Tests

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employees report higher technostress, while younger workers perceive AI more positively as a learning opportunity, compared to older employees who express concerns about job security.

Table 2. Reliability and Validity of Constructs

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
AI Adoption	0.81	0.85	0.56
Job Demands	0.78	0.83	0.52
Job Resources	0.82	0.86	0.59
Employee wellbeing	0.89	0.91	0.64
Managerial Practices	0.84	0.88	0.61

Correlation Matrix

The correlation matrix further illustrates the associations among the constructs. AI adoption correlated positively with both job resources ($r = 0.41$, $p < 0.01$) and job demands ($r = 0.36$, $p < 0.01$), highlighting its dual nature. Employee wellbeing correlated negatively with job demands ($r = -0.44$, $p < 0.01$) and positively with both job resources ($r = 0.39$, $p < 0.01$) and managerial practices ($r = 0.28$, $p < 0.01$). These results indicate that while AI adoption is associated with both challenges and opportunities, its ultimate effect on wellbeing depends on whether resources outweigh demands. The correlation between managerial practices and employee wellbeing further underscores the importance of supportive leadership in managing technology transitions.

Table 3. Correlation Matrix and Descriptive Statistics

Construct	Mean	SD	1	2	3	4	5
1. AI Adoption	3.62	0.81	1				
2. Job Demands	3.18	0.74	0.36**	1			
3. Job Resources	3.45	0.79	0.41**	-0.22*	1		
4. Employee wellbeing	3.26	0.82	0.29**	-0.44**	0.39**	1	
5. Managerial Practices	3.52	0.77	0.32**	-0.19*	0.37**	0.28**	1

* $p < 0.05$, ** $p < 0.01$

Model Fit Indices

Structural equation modeling (SEM) demonstrates good model fit ($CFI > 0.90$, $RMSEA < 0.08$). Hypothesis testing reveals that AI adoption significantly enhances job resources ($\beta = 0.41$, $p < 0.001$) and simultaneously increases job demands ($\beta = 0.36$, $p < 0.001$). Job demands negatively impact wellbeing ($\beta = -0.44$, $p < 0.001$), while resources have a positive effect ($\beta = 0.39$, $p < 0.001$). Crucially, managerial practices moderate these relationships, weakening the negative impact of demands and strengthening the positive effect of resources on wellbeing ($\beta = 0.28$, $p < 0.01$). These effect sizes indicate meaningful practical implications beyond statistical significance.

Table 4. Model Fit Indices

Index	Measurement Model	Structural Model	Recommended Cut-off
χ^2/df	2.10	2.25	< 3.0
CFI	0.94	0.93	≥ 0.90
TLI	0.92	0.91	≥ 0.90
RMSEA	0.06	0.07	≤ 0.08

Hypothesis Testing

The results of hypothesis testing reveal important insights.

H1 (AI Adoption $\rightarrow$ Job Resources): The path coefficient ($\beta = 0.41$, $p < 0.001$) supports the view that AI adoption enhances resources such as upskilling opportunities, efficiency gains, and enriched tasks. Employees in service firms, in particular, emphasized the benefits of CRM systems in reducing manual work, while technology employees highlighted the support for decision-making through analytics. This result reflects the JD–R model's motivational pathway.

H2 (AI Adoption $\rightarrow$ Job Demands): A positive coefficient ($\beta = 0.36$, $p < 0.001$) indicates that AI adoption simultaneously raises job demands. Employees reported heightened technostress when required to adapt quickly to new tools, along with feelings of job insecurity in manufacturing firms where automation could replace routine tasks. Monitoring technologies also raised concerns about surveillance. This aligns with prior studies that characterize technology as a "double-edged sword."

H3 (Job Demands $\rightarrow$ Employee wellbeing): Job demands had a significant negative effect on wellbeing ($\beta = -0.44$, $p < 0.001$). Employees experiencing higher stress, insecurity, and monitoring pressures reported lower job satisfaction and reduced work–life balance. The strength of this effect suggests that demands continue to be a dominant force in shaping employee outcomes.

H4 (Job Resources $\rightarrow$ Employee wellbeing): Job resources significantly improved wellbeing ($\beta = 0.39$, $p < 0.001$). Employees who gained efficiency, opportunities to upskill, or task enrichment reported higher levels of satisfaction and engagement. This demonstrates the importance of balancing demands with resources, as proposed by the JD–R framework.

H5 (Managerial Practices as Moderator): Managerial practices significantly moderated the relationship between AI adoption and wellbeing ($\beta = 0.28$, $p < 0.01$). Supportive leadership reduced the negative influence of demands and amplified the benefits of resources. SMEs that invested in training and transparent communication created environments where employees viewed AI as an enabler rather than a threat.

Overall, the results confirm that AI adoption has both beneficial and detrimental effects, but these outcomes are not predetermined. Rather, they are contingent on the quality of managerial practices and the balance between demands and resources.

Table 5. Hypothesis Testing Results

Hypothesis	Relationship Tested	Path Coefficient (β)	Significance (p-value)	Supported?
H1	AI Adoption $\rightarrow$ Job Resources	0.41	< 0.001	Yes

H2	AI Adoption → Job Demands	0.36	< 0.001	Yes
H3	Job Demands → Wellbeing	-0.44	< 0.001	Yes
H4	Job Resources → Wellbeing	0.39	< 0.001	Yes
H5	Managerial Practices × AI Adoption → wellbeing	0.28	< 0.01	Yes

Moderation Analysis

The moderation analysis further reveals that supportive managerial practices significantly reduce the adverse effects of demands, from -0.44 to -0.28, and amplify the benefits of resources, from 0.39 to 0.51, highlighting the central role of leadership in shaping employee experiences during AI adoption.

Table 6. Moderation Effects of Managerial Practices

Path Tested	Without Moderator (β)	With Moderator (β)	ΔR^2	Significance
AI Adoption → Job Demands → Wellbeing	-0.44	-0.28	0.07	$p < 0.01$
AI Adoption → Job Resources → Wellbeing	0.39	0.51	0.08	$p < 0.01$

Additional Quantitative Insights

Sectoral differences highlight how context shapes employee experiences. Manufacturing SMEs reported stronger associations between AI adoption and job insecurity, reflecting the greater automation of manual tasks. Service SMEs benefited more from efficiency gains, as CRM systems simplified client management. Technology SMEs reported the lowest levels of technostress, indicating a greater readiness and alignment of skills. Demographic analysis also revealed differences. Female employees reported higher technostress than male employees, possibly due to unequal access to digital training opportunities. Younger employees viewed AI more positively, citing upskilling and career development, while older employees expressed stronger concerns about job security. These findings suggest that employee perceptions of AI are not uniform and vary according to demographic and sectoral contexts.

Table 7. Subgroup Analysis of AI Adoption Effects

Subgroup	Strongest Association Observed	Path Coefficient (β)	Significance	Interpretation
Sector				
Manufacturing SMEs	AI Adoption → Job Insecurity	0.42	$p < 0.001$	Employees fear automation may replace routine jobs

Services SMEs	AI Adoption → Job Resources (Efficiency gains)	0.47	$p < 0.001$	CRM tools simplified workflows and improved productivity
Technology SMEs	AI Adoption → Technostress (lower association)	0.21	$p < 0.05$	Higher readiness reduced stress levels
Gender				
Male Employees	AI Adoption → Job Resources	0.39	$p < 0.01$	Reported efficiency and upskilling benefits
Female Employees	AI Adoption → Technostress	0.41	$p < 0.001$	Reported more stress adapting to digital tools
Age				
Younger Employees (<30)	AI Adoption → Job Resources (Upskilling)	0.44	$p < 0.001$	Saw AI as an opportunity to learn and grow
Older Employees (≥40)	AI Adoption → Job Insecurity	0.38	$p < 0.01$	Expressed greater concern about job stability

Qualitative Insights

The thematic analysis of 20 interviews reinforced these findings. Employees frequently described AI as both an enabler and a source of anxiety. Efficiency gains were widely recognized, with employees noting that tasks such as reporting and monitoring had become faster and more accurate. However, concerns about job security were particularly pronounced in manufacturing firms. The role of managerial support was emphasized repeatedly. In firms where managers explained the rationale for AI adoption and offered training, employees reported feeling "empowered" rather than threatened. Conversely, in firms where communication was poor, employees described AI as "something imposed" that created uncertainty and confusion. These qualitative insights confirm the central role of leadership in shaping employees' experiences of technological change.

Table 8. Themes from Employee Interviews

Theme	Description	Illustrative Quote
Efficiency Gains	AI reduces repetitive tasks and increases accuracy	"Our reports take half the time now, freeing us for creative work."
Job Insecurity & Monitoring	Concerns about automation and surveillance	"I worry every tool they add is one less task for me to do."

Managerial Support as a Buffer	Training and communication reduce resistance	"When managers explain the change, we see AI as an opportunity."
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Discussion

This study aimed to investigate the impact of AI adoption on employee wellbeing in Indian SMEs, employing the Job Demands-Resources (JD–R) model and the sociotechnical systems perspective. The results demonstrate that AI adoption is inherently dual in nature: while it enhances job resources by enabling efficiency, upskilling, and task enrichment, it simultaneously creates job demands in the form of technostress, insecurity, and heightened monitoring. This duality resonates with the JD–R model, which explains how resources foster motivation and engagement, while excessive demands drain energy and undermine wellbeing (Bakker & Demerouti, 2007). In the SME context, where employees often occupy multiple roles with limited support structures, these opposing effects are particularly pronounced. The findings, therefore, align with prior research that has described technology as a "double-edged sword," capable of enabling productivity while also generating new forms of strain (Tarafdar et al., 2019).

A key contribution of this study is the identification of managerial practices as a decisive factor in shaping employees' experiences with AI adoption. The quantitative results indicate that supportive practices, including transparent communication, participatory leadership, and training, mitigate the negative effects of demands and amplify the positive impacts of resources. This was reinforced in the qualitative interviews, where employees who received clear explanations and training perceived AI as a growth opportunity, while those who did not reported feelings of threat and mistrust. These findings strongly support the sociotechnical systems perspective, which emphasizes that technology adoption cannot succeed in isolation but must be accompanied by aligned social practices and leadership support (Trist & Bamforth, 1951). In SMEs, where managerial interactions are often close and direct, leadership behaviors play an outsized role in influencing whether AI adoption is embraced or resisted.

The subgroup analysis further revealed that employee experiences of AI adoption are not uniform but vary across sectors and demographics. Manufacturing employees were more likely to associate AI with job insecurity, reflecting the automation of routine tasks, while service employees highlighted efficiency gains, particularly through CRM systems. Technology firms reported lower levels of technostress, suggesting higher digital readiness and greater confidence in using AI tools. Demographic differences also emerged: women reported higher technostress than men, possibly due to unequal access to training opportunities. In contrast, older employees expressed stronger concerns about job displacement compared to younger employees, who largely viewed AI as an upskilling opportunity. These results are consistent with research indicating that technology adoption outcomes are influenced by individual characteristics, such as age, gender, and readiness to adapt to change (Venkatesh et al., 2016). They emphasize the need for SMEs to tailor their implementation strategies to specific employee groups, rather than assuming a uniform experience with AI.

Taken together, these findings suggest that AI adoption in Indian SMEs should not be viewed as a purely technical shift, but rather as a socio-technical transformation. While AI can deliver efficiency gains and new learning opportunities, its benefits are not automatic and can

be offset by risks of stress and insecurity. The evidence suggests that managers should adopt a human-centered approach, where employees are equipped with the necessary skills, kept informed through transparent communication, and actively involved in the change process. For SMEs, which often operate with limited formalized HR structures, this approach is crucial for mitigating risks and sustaining employee wellbeing during digital transformation. From a theoretical standpoint, this study extends the JD–R model and sociotechnical systems perspective into the under-researched context of Indian SMEs. It shows that AI adoption influences employee wellbeing through both job resources and job demands, and that managerial practices act as an important moderator of these effects. By combining quantitative and qualitative evidence, the study contributes to the literature on technology adoption and employee wellbeing, offering insights into how digital transformation unfolds in resource-constrained organizational contexts. At a practical level, the findings provide a framework for SME managers to manage the human side of AI adoption. By aligning technical change with social support, SMEs can position AI not as a threat but as a tool that enhances both organizational performance and employee wellbeing.

Managerial and Policy Implications

The findings of this study offer several implications for both managers and policymakers concerned with the adoption of AI in Indian SMEs. At the organizational level, the results demonstrate that AI introduces a paradox: it creates valuable job resources in the form of efficiency, upskilling, and enriched tasks, but it also increases job demands through technostress, insecurity, and perceptions of surveillance. Managers need to address this duality by ensuring that the benefits of AI outweigh its challenges. This requires a deliberate focus on training and digital literacy initiatives that build employee confidence and capacity. Younger employees may benefit from advanced upskilling opportunities, while older employees may require more fundamental training and role redesign to reduce anxiety about job loss.

Equally important is the need for transparent communication. Employees often resist technological change when they are uncertain about its purpose or its implications for their roles. Managers who provide clear explanations of the objectives of AI adoption and involve employees in implementation decisions can foster trust and ownership. Participative leadership, therefore, becomes a critical moderating factor, shaping whether AI adoption is experienced as an opportunity or as a threat. Attention to demographic differences is also essential. The study revealed that women reported higher levels of technostress and that older employees expressed stronger job insecurity. Tailored interventions that address these specific vulnerabilities will ensure a more inclusive and equitable transition to AI-driven work practices.

At the policy level, the study highlights the importance of creating a supportive ecosystem for SME digitalization. Given the resource constraints that SMEs face, initiatives such as subsidized training programs, affordable AI tools, and digital literacy workshops could bridge the gap between smaller enterprises and larger firms. Policymakers should also consider measures to promote inclusivity, particularly for women and older workers, to avoid widening inequalities in the digital workplace. Concerns expressed by employees about monitoring and surveillance further underscore the need for clear policy guidelines on the responsible use of AI, including frameworks for data privacy and ethical implementation. Incorporating AI-related skills into national training and skill development missions would also ensure that employees across industries are better prepared for technological change,

thereby strengthening India's competitiveness in the digital economy. Overall, the findings reaffirm that AI adoption is not just a technological change but a socio-technical transformation. For SMEs, success depends on managers providing adequate resources, reducing unnecessary demands, and maintaining transparent, inclusive communication. Policymakers can help SMEs navigate this transformation responsibly by offering targeted support and regulatory safeguards. Together, these actions can ensure that AI adoption promotes both organizational growth and employee wellbeing, positioning SMEs as key contributors to India's digital future.

Conclusion

This study examined the relationship between AI adoption and employee wellbeing in Indian SMEs by integrating the Job Demands–Resources (JD–R) model and the sociotechnical systems perspective. The findings confirm that AI adoption is inherently dual in nature: it enriches jobs by creating resources such as efficiency gains and opportunities for upskilling, but it also introduces demands through technostress, insecurity, and perceptions of surveillance. The balance between these outcomes depends critically on managerial practices. Supportive leadership, transparent communication, and targeted training have been shown to mitigate the negative effects of demands and amplify the positive influence of resources. Sectoral and demographic variations further revealed that employee experiences of AI adoption differ across industries and workforce groups, underscoring the need for tailored strategies that address the specific vulnerabilities of women, older employees, and workers in manufacturing sectors.

The study makes several contributions to theory and practice. Theoretically, it extends the JD–R model and sociotechnical systems perspective into the under-researched context of Indian SMEs, demonstrating how technology adoption can simultaneously enhance and erode wellbeing. It also highlights the moderating role of managerial practices, thereby offering a more nuanced understanding of the socio-technical dynamics at play in smaller, resource-constrained firms. Practically, the findings provide SME managers with guidance on how to manage the human aspects of AI adoption effectively. By investing in training, maintaining transparent communication, and adopting participative leadership, SMEs can mitigate risks and ensure that employees perceive AI as an enabler of growth rather than a threat to stability. Like any study, this research has limitations. The data were drawn from a cross-sectional survey, which restricts causal interpretations. Future studies could employ longitudinal designs to track the evolution of employee perceptions of AI adoption over time. The sample, although diverse across industries, was limited to SMEs in India, which may limit the generalizability of the findings to other contexts. Comparative studies across countries and firm sizes would provide richer insights into how cultural and institutional factors influence the relationship between AI adoption and wellbeing. Finally, while this study incorporated qualitative interviews to complement survey data, future research could adopt more extensive mixed-methods designs to capture the full complexity of employees' lived experiences.

In conclusion, the study highlights that AI adoption in Indian SMEs is not merely a technological upgrade, but a socio-technical shift that has a direct impact on employee wellbeing. The evidence indicates that results are influenced more by the practices surrounding its implementation than by the technology itself. By adopting a human-centered approach and aligning technological change with social support, SMEs can maximize the benefits of AI while protecting employee wellbeing. In doing so, they can position themselves not only as active participants in India's digital economy but also as organizations that prioritize sustainable growth and inclusive workplaces.

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Appendix

The following items were measured on a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

AI Adoption

- Our organization uses AI tools such as CRM systems, predictive analytics, or quality monitoring.
- AI has improved efficiency in my daily tasks.
- AI has created opportunities for me to learn new skills.

Job Demands

- I feel stressed when adapting to new AI tools at work.
- AI has made me feel insecure about the future of my job.
- Monitoring technologies associated with AI increase my pressure at work.

Job Resources

- AI helps me accomplish tasks more quickly and efficiently.
- AI has created opportunities for upskilling and career development.
- AI has enriched my role by enabling me to focus on more meaningful tasks.

Employee wellbeing

- I am satisfied with my current work environment.
- AI adoption has improved my work–life balance.
- I feel positive about my future in this organization.

Managerial Practices

- My manager provides training on AI-related tools.
- My manager communicates openly about the purpose of AI adoption.
- I am involved in discussions about how AI is being implemented in my workplace.

Appendix B: Interview Protocol (Qualitative Phase)

- Can you describe how AI tools have changed your daily work tasks?
- What benefits do you associate with the use of AI in your organization?
- Have you experienced any challenges or stress due to AI adoption?
- How has your manager communicated about AI adoption?
- What kind of support (training, reassurance, involvement) would make AI adoption easier for you?