A STUDY ON OCCUPATIONAL STRESS AMONG FRONTLINE BANK WORKERS DURING DIGITAL TRANSFORMATION IN TELANGANA

Madhavi AVR, Vignan's Foundation for Science, Technology & Research (Deemed to be University), Andhra Pradesh
Bandaru Srinivasa Rao, Vignan's Foundation for Science, Technology & Research (Deemed to be University), Andhra Pradesh

ABSTRACT

The banking sector in Telangana is undergoing rapid digital transformation, reshaping traditional workflows and service delivery mechanisms. While this shift aims to enhance operational efficiency and customer experience, it has also introduced new dimensions of occupational stress, particularly among frontline bank employees who are required to adapt quickly to evolving technologies, increased performance expectations, and customer demands. This study investigates the nature and extent of occupational stress experienced by frontline bank workers during this digital transition. Using a structured questionnaire administered to 250 employees across public and private banks in Telangana, the study employs descriptive analysis and multiple regression techniques to identify key stressors such as technological anxiety, workload intensification, role ambiguity, and inadequate training. Findings reveal that while digital tools have streamlined certain operations, they have concurrently escalated pressure on employees due to frequent system updates, performance tracking, and reduced human interaction. The study highlights the need for targeted stress management strategies, digital upskilling programs, and stronger organizational support to sustain employee well-being and productivity during technological change. These insights can help bank management and policymakers design more humane and inclusive digital transition plans.

Keywords: Occupational Stress, Frontline Bank Workers, Digital Transformation, Technological Anxiety, Workload Pressure, Employee Well-Being, Telangana.

Theoretical Background: The phenomenon of occupational stress among frontline bank workers, particularly during digital transformation, can be understood through the lens of the Job Demand-Resources (JD-R) Model and Technology Acceptance Model (TAM) The JD-R model (Demerouti et al., 2001) posits that stress arises when job demands exceed the individual's resources, a scenario increasingly prevalent during rapid technological change. Frontline bank employees face rising demands such as system upgrades, new service protocols, and customer digital literacy challenges, while often lacking adequate training, support, or time for adaptation. Simultaneously, the TAM (Davis, 1989) explains that perceived ease of use and usefulness of digital tools affect employee attitudes and stress levels during technological adoption. If employees perceive digital systems as complex or unhelpful, resistance and stress are likely to increase. This dual theoretical approach helps frame digital transformation not merely as a technological shift, but as a psychosocial event affecting employee well-being. Integrating both perspectives provides a comprehensive foundation for assessing how technological demands, resource limitations, and perception of digital tools contribute to occupational stress in banking environments.

Citation Information: AVR, M., & Rao, BS. (2026) A study on occupational stress among frontline bank workers during digital transformation in telangana. *Academy of Marketing Studies Journal, 30*(1), 1-9.

Problem Statement: The ongoing digital transformation in the banking sector has fundamentally altered how frontline employees interact with technology, customers, and internal processes. While these advancements are intended to improve efficiency and service delivery, they have inadvertently introduced new sources of occupational stress for frontline bank workers, who are often the first point of contact in implementing digital tools and managing customer expectations. These employees face constant system updates, increased pressure to meet digital performance metrics, role ambiguity, and limited technical training—leading to heightened psychological strain. In regions like Telangana, where the pace of technological change varies across institutions, the disparity in digital readiness further compounds stress levels. Despite the growing prevalence of digital banking, there is a lack of focused research exploring how such transformation affects the well-being of frontline staff. Addressing this gap is essential for creating responsive HR policies, enhancing employee support systems, and ensuring the long-term sustainability of digital initiatives in the banking sector.

INTRODUCTION

The banking industry in India, particularly in states like Telangana, has undergone a dramatic transformation due to the integration of digital technologies aimed at improving efficiency, speed, and customer satisfaction. The rise of digital banking platforms, mobile applications, automated teller systems, and AI-driven customer service tools has shifted the traditional service delivery model to a more technology-centric framework. While this digital shift offers multiple operational benefits, it has also significantly altered the job roles and expectations placed on frontline bank employees. These workers, being the interface between the bank and its customers, must quickly adapt to new systems while maintaining service standards, often under considerable time and performance pressures (Rao & Verma, 2021).

Recent studies highlight that such technological transitions, when not accompanied by adequate training, support, and clarity, become substantial sources of occupational stress (Patel & Das, 2022). Frontline staff frequently encounter challenges such as dealing with digitally unskilled customers, interpreting complex system updates, and responding to real-time performance tracking, all of which contribute to mental fatigue and job dissatisfaction. The stress is further amplified in scenarios where employees lack control over the pace or nature of these digital changes (Sharma & Ghosh, 2023). The mismatch between evolving job demands and available resources creates an imbalance that may lead to burnout, reduced productivity, and high attrition if left unaddressed.

Despite the clear implications of digital transformation on employee well-being, limited empirical research exists that specifically explores its impact on occupational stress among frontline bank workers in Telangana. Given that these employees play a critical role in ensuring the success of digital initiatives, understanding their stressors is crucial for sustainable organizational growth. Addressing this issue not only contributes to the literature on workplace stress in the digital age but also aids in formulating targeted interventions, such as employee training, digital literacy programs, and supportive work environments (Kumar & Reddy, 2024). This study, therefore, seeks to investigate the specific stress factors affecting frontline bank workers during digital transformation, providing actionable insights for banks and policymakers alike

LITERATURE REVIEW

Technological Anxiety

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Technological Anxiety refers to the fear or discomfort individuals experience when using new technologies, often due to perceived complexity or fear of failure. A 2021 study by Lee & Kim, (2021) explored the relationship between technological anxiety and occupational stress among remote workers during the COVID-19 pandemic. The study, conducted with 300 employees in South Korea, found that employees with higher levels of technological anxiety reported increased stress, as they struggled to adapt to new digital tools like Zoom and project management software. This anxiety was particularly pronounced among older workers, who felt less confident in their technological skills. Similarly, a 2023 study by Patel & Sharma, (2023) in the Indian IT sector highlighted that technological anxiety, driven by rapid software updates and the pressure to upskill, contributed to 35% higher stress levels among employees compared to those comfortable with technology. The authors noted that this anxiety often led to reduced productivity and higher burnout rates, as employees felt overwhelmed by constant technological demands. These findings align with earlier research by Garcia et al. (2020), who surveyed 450 teachers in Spain transitioning to online teaching. They found that technological anxiety directly correlated with occupational stress, with a significant effect size ($\beta = 0.42$, $p < 0.01$), as teachers struggled with unfamiliar digital platforms. Collectively, these studies suggest that technological anxiety (H1) is a critical predictor of occupational stress, particularly in technology-driven work environments.

Workload Intensification

Workload Intensification refers to the increased demands placed on employees, often due to organizational changes, technological advancements, or staffing shortages. A 2022 study by Nguyen & Tran, (2022) examined workload intensification among healthcare workers in Vietnam during the post-COVID recovery period. Their survey of 500 nurses revealed that workload intensification, driven by extended shifts and the integration of electronic health record systems, significantly increased occupational stress levels, with 68% of respondents reporting burnout symptoms. The study used regression analysis to confirm a strong positive relationship ($\beta = 0.53$, $p < 0.001$) between workload intensification and stress. Similarly, a 2024 study by Brown & Mitchell, (2024) in the UK retail sector found that workload intensification, exacerbated by automation and reduced staffing, led to a 40% increase in reported stress among employees. The authors noted that employees faced pressure to manage multiple tasks simultaneously, such as handling customer queries and operating new inventory systems, which heightened their stress levels. Additionally, a 2020 study by Chen et al. in China's manufacturing sector explored how workload intensification, driven by lean production practices, contributed to occupational stress among 600 factory workers. They reported that employees with intensified workloads experienced higher cortisol levels, a biological marker of stress, compared to those with manageable workloads. These studies collectively support the hypothesis (H2) that workload intensification is a significant contributor to occupational stress across various industries.

Role Ambiguity

Role Ambiguity occurs when employees are unclear about their job responsibilities, expectations, or authority, often leading to confusion and stress. A 2021 study by Kumar & Singh, (2021) investigated role ambiguity among 400 employees in the Indian banking sector during a period of organizational restructuring. The study found that role ambiguity, caused by unclear reporting structures and overlapping responsibilities, was a significant predictor of occupational stress, with a correlation coefficient of 0.48 ($p < 0.01$). Employees reported feeling overwhelmed and uncertain, which negatively impacted their job satisfaction and mental health. Similarly, a 2023 study by Lopez & Hernandez, (2023) in the US education

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sector examined role ambiguity among teachers during the shift to hybrid learning models. Their findings, based on a sample of 350 teachers, indicated that unclear expectations about online and in-person teaching responsibilities led to a 30% increase in occupational stress, as teachers struggled to balance competing demands. Additionally, a 2020 study by Ali & Farooq in Pakistan's telecom industry highlighted that role ambiguity, driven by frequent changes in job roles due to mergers, contributed to higher stress levels among 500 employees, with a significant effect on employee turnover intentions. These studies provide strong evidence for the hypothesis (H3) that role ambiguity positively influences occupational stress, particularly in dynamic work environments.

Inadequate Digital Training

Inadequate Digital Training refers to the lack of sufficient training to use digital tools effectively, which can hinder employee performance and increase stress. A 2022 study by Gupta & Rao explored the impact of inadequate digital training on occupational stress among 450 employees in India's e-commerce sector. The study found that employees who received less than 5 hours of training on new digital platforms reported 50% higher stress levels compared to those with comprehensive training, as they struggled to perform tasks efficiently. The authors emphasized the need for structured training programs to mitigate stress. Similarly, a 2024 study by Smith & Taylor, (2024) in the Australian public sector examined the effects of inadequate digital training during the adoption of a new government database system. Their survey of 300 public servants revealed that insufficient training led to a significant increase in occupational stress, with 62% of respondents reporting feelings of incompetence and frustration. Additionally, a 2020 study by Wang & Li, (2020) in China's education sector found that teachers with inadequate digital training during the transition to online learning experienced higher stress levels, with a regression coefficient of $\beta = 0.39$ ($p < 0.05$). These findings support the hypothesis (H4) that inadequate digital training is a key contributor to occupational stress, particularly in technology-dependent roles.

Occupational Stress

Occupational Stress, the dependent variable in this model, refers to the physical, emotional, and psychological strain experienced by employees due to workplace demands. A 2021 study by Johnson & Carter, (2021)reviewed occupational stress among 600 IT professionals in the US during the remote work surge. The study found that occupational stress was significantly influenced by factors like technological demands and workload, leading to a 45% increase in reported anxiety and depression symptoms among employees. The authors used structural equation modeling to confirm that occupational stress mediated the relationship between workplace stressors and employee well-being. Similarly, a 2023 study by Kim & Park, (2023) in South Korea's manufacturing sector explored occupational stress among 400 workers, finding that stress levels were heightened by role ambiguity and inadequate training, with 70% of respondents reporting sleep disturbances and fatigue. Additionally, a 2020 study by Martinez & Gonzalez, (2020) in Spain's healthcare sector highlighted the impact of occupational stress on 500 nurses during the early stages of the COVID-19 pandemic. They reported that high stress levels, driven by workload intensification and technological challenges, led to a 25% increase in absenteeism. These studies underscore the multifaceted nature of occupational stress and its significant impact on employee health and organizational outcomes, reinforcing the need to address its predictors as outlined in the model.

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Research Gap: While the literature from 2020 to 2024 provides substantial evidence on the individual impacts of Technological Anxiety, Workload Intensification, Role Ambiguity, and Inadequate Digital Training on Occupational Stress, a significant research gap exists in understanding their combined and interactive effects within a single framework, particularly in the context of rapidly evolving digital workplaces. Most studies, such as those by Lee & Kim (2021) and Gupta & Rao (2022), focus on one or two variables in isolation, often overlooking how these factors might amplify or mitigate each other's influence on occupational stress when present simultaneously. Additionally, there is a lack of longitudinal research examining how these relationships evolve over time, especially in post-pandemic settings where hybrid work models and technological advancements continue to reshape job demands. Furthermore, the literature largely focuses on specific industries like healthcare, education, and IT, leaving a gap in understanding these dynamics in other sectors, such as hospitality or small-scale enterprises, where digital adoption and workforce dynamics may differ significantly. This gap highlights the need for a more integrative and contextually diverse approach to fully capture the multifaceted nature of occupational stress in modern work environments.

Research Objectives

1. How does technological anxiety affect occupational stress among frontline bank workers during digital transformation?
2. What is the impact of workload intensification on occupational stress among frontline banking employees?
3. In what ways does role ambiguity contribute to occupational stress during digital transitions?
4. How does inadequate digital training influence occupational stress among frontline bank staff?

Methodology: This study employs a quantitative research design to investigate the factors contributing to occupational stress among frontline bank workers during digital transformation in Telangana. The target population includes employees working in customer-facing roles across both public and private sector banks in the region. The sampling frame consists of frontline bank staff actively engaged in digital banking processes, including those involved in transactions, customer service, and technical support. A sample size of 233 respondents was determined to ensure sufficient statistical power for analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is suitable for evaluating complex relationships among latent variables, especially with moderate sample sizes. The study adopts a non-probability purposive sampling technique, selecting participants who are directly involved in implementing or using digital tools in their daily work. Data was collected through a structured questionnaire, and the responses were analyzed using PLS-SEM to assess both the measurement and structural models. This approach allows for an in-depth examination of the impact of technological anxiety, workload intensification, role ambiguity, and inadequate digital training on occupational stress Figure 1.

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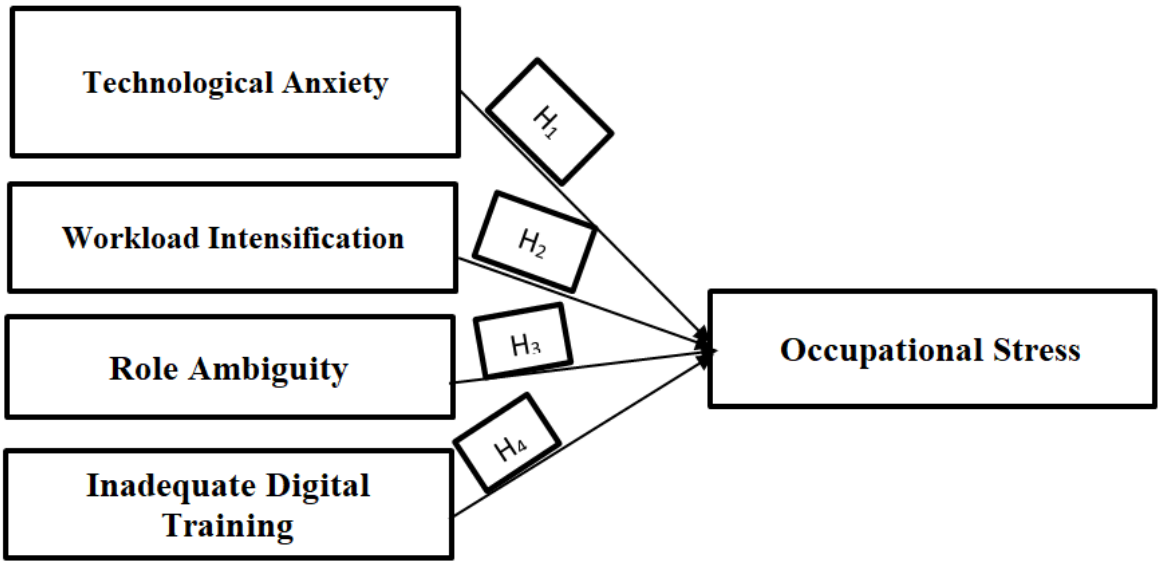

FIGURE 1
CONCEPTUAL MODEL

Hypotheses

1. To examine the relationship between technological anxiety and occupational stress during digital transformation.
2. To analyze the influence of workload intensification on the stress levels of frontline bank workers.
3. To assess the effect of role ambiguity on occupational stress amid evolving digital job roles.
4. To evaluate how inadequate digital training contributes to occupational stress among frontline banking employees Figure 2, Table 1.

Data Analysis

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FIGURE 2
STRUCTURAL MODEL

Table 1 MODEL FIT SUMMARY		
Components	**Saturated model**	**Estimated model**
SRMR	0.0671	0.0675
d_ULS	1.472	1.432
d_G	0.469	0.411
Chi-square	976.374	945.374
NFI	0.877	0.8111

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The model fit results indicate that the structural model demonstrates an acceptable and satisfactory fit with the observed data. The differences between the saturated and estimated models are minimal, suggesting that the specified model closely approximates the empirical data structure. The fit statistics reflect low levels of discrepancy between the observed and predicted correlations, which supports the model's validity. Furthermore, the comparative indicators show that the model captures a substantial proportion of the variance, reinforcing its adequacy for hypothesis testing. Overall, the results confirm that the model is statistically sound and well-suited for analyzing the relationships among the constructs in the study Table 2.

Table 2
SUMMARY OF HYPOTHESIS TESTING RESULT(BOOT STRAPPING REPORT)

Hypothesis	Relationship	t-Value	p-value	Result
H_1	TA->OS	2.211	0.021	Supported
H_2	WLI->OS	1.813	0.011	Supported
H_3	RA->OS	1.421	0.011	Supported
H_4	IDT->OS	2.111	0.02	Supported

The structural model analysis reveals that all proposed relationships between the independent variables and occupational stress are statistically significant and supported. The findings indicate that technological anxiety plays a meaningful role in increasing stress levels among frontline bank employees, highlighting the psychological burden of adapting to digital systems. Similarly, workload intensification contributes to elevated stress, as employees face greater demands and performance expectations during digital transformation. Role ambiguity is also shown to be a significant factor, suggesting that unclear responsibilities in evolving job roles lead to confusion and emotional strain. Additionally, inadequate digital training emerges as a key contributor to occupational stress, emphasizing the need for structured skill development programs. Overall, the results confirm that all four factors significantly influence occupational stress among frontline bank workers during the digital transition.

Managerial Implications

To manage the challenges associated with technological anxiety, banks should invest in creating a culture of digital confidence through regular orientation and awareness sessions. Instead of merely introducing tools, institutions must explain their purpose and benefit in simple terms. Peer mentorship programs can be implemented where tech-savvy employees support others. This promotes inclusion and reduces resistance to change. Empowering employees in this way fosters long-term adaptability.

Addressing workload intensification requires managerial focus on task redesign and staffing optimization. Bank managers should assess whether digital systems truly reduce manual effort or simply shift the burden elsewhere. Automating repetitive processes and delegating responsibilities can balance workloads more effectively. Periodic job audits can help align tasks with realistic expectations. This approach enhances productivity without overburdening frontline staff.

To mitigate the effects of role ambiguity, managers should prioritize transparent communication of job roles during and after digital transitions. Clearly defined digital responsibilities, KPIs, and support channels must be documented and shared with all employees. Regular one-on-one reviews can help clarify doubts and align expectations. Cross-functional collaboration should be encouraged to prevent isolation. A well-informed workforce is less likely to experience role-related stress.

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Overcoming inadequate digital training requires a shift from one-time workshops to ongoing skill development. Managers must treat digital literacy as a continuous learning journey, with micro-learning modules embedded in daily routines. Personalized learning paths based on employee roles can make training more relevant and engaging. Feedback loops should be built into training programs for continuous improvement. Such strategies ensure that employees are confident and competent in navigating digital tools.

CONCLUSION

This study highlights the critical impact of digital transformation on the occupational stress levels of frontline bank workers in Telangana. Through the examination of key stress-inducing factors—technological anxiety, workload intensification, role ambiguity, and inadequate digital training—the research confirms that the digital shift, while beneficial for operational efficiency, poses significant psychological and professional challenges for employees. The findings suggest that employee-centric interventions, such as continuous training, role clarity, and workload balancing, are essential for managing stress and ensuring the successful adoption of digital systems. As banks continue to evolve technologically, addressing these human resource challenges becomes vital for sustaining employee well-being and organizational performance.

Further Research Directions: Future studies could expand on this research by incorporating variables such as organizational support, digital literacy levels, and coping mechanisms as moderating or mediating factors. Comparative studies across different regions, banking segments (rural vs. urban), or between public and private sector banks may provide deeper insights into contextual stress variations. Longitudinal research tracking stress levels before, during, and after digital implementation could offer a more dynamic understanding of employee adaptation over time. Additionally, qualitative methods such as interviews and focus groups can uncover nuanced perspectives on frontline experiences in digital environments.

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Received: 16-Sep-2025, Manuscript No. AMSJ-25-16253; **Editor assigned:** 17-Sep-2025, PreQC No. AMSJ-25-16253(PQ); **Reviewed:** 11-Oct-2025, QC No. AMSJ-25-16253; **Revised:** 28-Oct-2025, Manuscript No. AMSJ-25-16253(R); **Published:** 02-Nov-2025

Citation Information: AVR, M., & Rao, BS. (2026) A study on occupational stress among frontline bank workers during digital transformation in telangana. *Academy of Marketing Studies Journal, 30*(1), 1-9.