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Digital Empowerment among Women Employees in Andhra Pradesh

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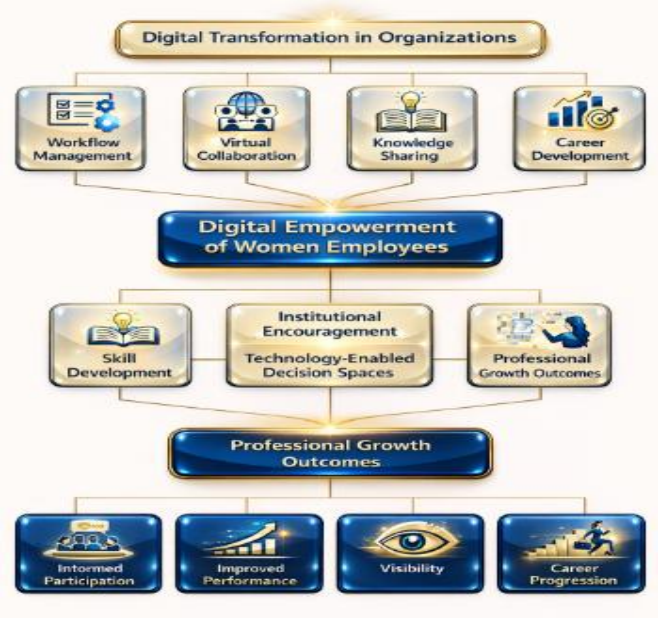
Abstract
Digital transformation has fundamentally restructured organizational environments by redefining communication patterns, work processes, operational efficiency, and employee engagement. Within this rapidly evolving context, women employees represent an important workforce segment whose empowerment is increasingly shaped by access to and effective use of digital technologies. Although digital systems have expanded opportunities for learning, collaboration, and decision-making, their benefits are not experienced equally by all employees. In many organizational settings, especially within regional contexts, women continue to face barriers related to digital skill acquisition, unequal access to training opportunities, and insufficient institutional support. As a result, digital access alone does not automatically translate into meaningful empowerment or professional advancement. The present study examines the determinants of digital empowerment among women employees in Andhra Pradesh by focusing on the effects of digital literacy, digital access, and organizational support on empowerment outcomes and career growth. The study addresses an important gap in the literature by integrating empowerment theory with digital capability frameworks and empirically testing the proposed relationships through Structural Equation Modeling. A quantitative research design was adopted, and primary data were collected through a structured questionnaire administered to 320 women respondents drawn from the IT, banking, education, and public sectors. The findings reveal that digital literacy exerts the strongest positive influence on digital empowerment (beta = 0.48), followed by organizational support (beta = 0.36), while digital access demonstrates only a modest direct effect (beta = 0.18). The model further shows that digital empowerment significantly enhances perceived career growth and professional agency (beta = 0.52), with the exogenous variables jointly explaining 62 percent of the variance in empowerment. The fit indices confirm that the proposed model is statistically sound and conceptually coherent. The study contributes to theory by proposing an integrated model of digital empowerment and offers practical implications for human resource policy, digital skill development, and inclusive organizational strategy aimed at strengthening women employees' participation and advancement in the digital era.

Keywords: digital empowerment, women employees, digital literacy, organizational support, digital access, career growth, AMOS, SEM

1. Introduction

1.1 Background of the Study

Digital transformation has become a defining force in contemporary organizations by reshaping how employees communicate, perform tasks, access information, and participate in decision-making processes.



Across sectors, digital systems now support workflow management, virtual collaboration, knowledge sharing, performance monitoring, and career development. Women employees, particularly in regional and mixed-sector organizational contexts, often occupy a complex position within digitally transforming workplaces. While improved connectivity and digital tools create new opportunities for autonomy and advancement, these opportunities can remain uneven when women do not receive comparable exposure to skill development, institutional encouragement, or technology-enabled decision spaces. Digital empowerment should therefore be understood not merely as access to devices or online platforms, but as the ability to use digital tools confidently, productively, and strategically for professional growth. In organizational settings, empowerment reflects the extent to which employees can convert digital resources into meaningful workplace outcomes such as informed participation, improved performance, visibility, and career progression.

1.2 Problem Statement: Although digital technologies have become integral to organizational functioning, their advantages are not experienced equally by all employees. Women employees, especially in regional settings, often encounter difficulties in translating digital access into genuine empowerment and meaningful workplace outcomes. Much of the existing literature has concentrated on digital inclusion and technology adoption, while giving limited attention to the causal linkages between digital capability and employee empowerment. In addition, there is a lack of empirical research in regional contexts that applies advanced analytical techniques such as Structural Equation Modeling to examine these relationships comprehensively.

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1.3 Research Objectives

- To assess the level of digital empowerment among women employees working across selected sectors in Andhra Pradesh.
- To analyze the impact of digital literacy on digital empowerment.
- To evaluate the role of organizational support in facilitating digital empowerment.
- To examine the relationship between digital empowerment and perceived career growth among women employees.

1.4 Research Questions

- How does digital literacy influence digital empowerment among women employees?
- What role does organizational support play in shaping empowerment outcomes?
- Does digital access directly contribute to digital empowerment?
- How does digital empowerment affect perceived career growth and professional agency?

1.5 Hypotheses

- H1: Digital literacy positively influences digital empowerment.
- H2: Organizational support positively influences digital empowerment.
- H3: Digital access positively influences digital empowerment.
- H4: Digital empowerment positively influences career growth.

1.6 Significance of the Study

Theoretical Significance: The study contributes to the literature by integrating empowerment theory with digital capability frameworks, thereby extending understanding of technology-enabled empowerment in organizational contexts.

Practical Significance. The findings offer practical guidance for human resource managers, organizational leaders, and policymakers seeking to build inclusive digital workplaces through skill development, supportive work environments, and equitable technology use.

2. Review of Literature

2.1 Conceptual Framework: The study integrates Empowerment Theory with digital capability perspectives. Digital literacy, digital access, and organizational support are treated as exogenous constructs influencing digital empowerment, which then affects career growth. The framework assumes that empowerment emerges when access is supported by competence and organizational facilitation.

2.2 Review of Literature: Mark (2021) showed that digital literacy strengthens employee autonomy and workplace participation by enabling informed decision-making and confident technology use. Dr. Naveen Prasadula (2024) identified organizational support as a critical enabler of empowerment in technology-oriented work settings. argued that access to digital tools alone is inadequate unless accompanied by skill development and actual usage capability. Boon (2019) found that women employed in technology-intensive sectors report higher empowerment because of repeated exposure to digital systems. Walsh (2023) emphasized that structured digital training programs significantly improve career progression and readiness among employees.

2.3 Research Gap: Despite increasing interest in digital inclusion and technology use, limited empirical research integrates digital literacy, digital access, and organizational support into a unified SEM framework for analyzing empowerment outcomes among women employees in regional contexts. The present study addresses this gap.

3. Research Methodology

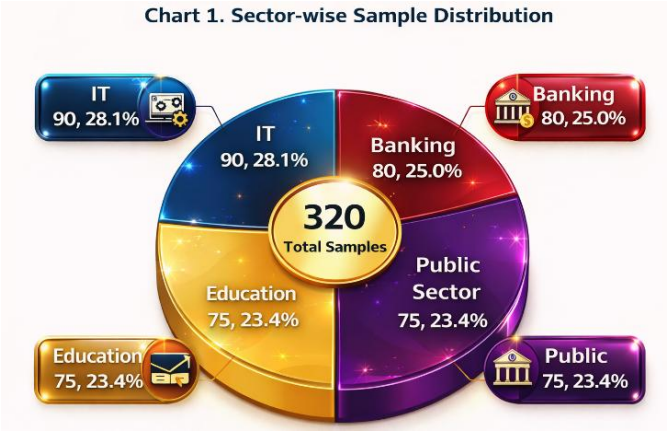
3.1 Research Design: A quantitative research design was adopted to test the hypothesized relationships among the latent constructs. Structural Equation Modeling using AMOS was selected because it enables simultaneous estimation of measurement and structural relationships, thereby providing a strong analytical basis for understanding the causal pathways among the study variables.

3.2 Data Sources:Primary data were collected through a structured questionnaire administered to women employees. Secondary data included peer-reviewed journals, government reports, and industry publications used to support theoretical development and interpretation.

3.3 Sample Size and Sampling Technique: The sample size was guided by the standard formula $n = (Z^2 \times p \times q) / e^2$, and a final sample of 320 respondents was retained for analysis. A stratified convenience sampling approach was employed to ensure reasonable representation across the selected sectors while maintaining feasibility of field data collection.

Table 1. Sector-wise sample distribution

Sector	Sample	Percentage
IT	90	28.1%
Banking	80	25.0%
Education	75	23.4%
Public Sector	75	23.4%
Total	320	100.0%



Interpretation: The sample distribution is reasonably balanced across sectors, with the IT sector accounting for the largest share of respondents, followed by banking, while education and the public sector contribute equally. This improves the general interpretive relevance of the study.

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3.4 Data Collection Methods

A Likert-scale questionnaire ranging from 1 to 5 was used to measure digital literacy, digital access, organizational support, digital empowerment, and career growth. The scale format enabled the quantification of employee perceptions for descriptive, reliability, validity, and SEM-based analysis.

3.5 Data Analysis Techniques

- SPSS for descriptive statistics
- AMOS for SEM analysis
- Confirmatory Factor Analysis for validity testing
- Reliability analysis using internal consistency indicators

3.6 Ethical Considerations

- Informed consent was obtained.
- Confidentiality was ensured.
- Participation remained voluntary.

4. Results and Interpretation

4.1 Descriptive Statistics of Key Constructs

Table 2. Descriptive statistics of key constructs

Construct	Mean	Standard Deviation
Digital Literacy	3.85	0.72
Organizational Support	3.67	0.68
Digital Access	4.02	0.60
Digital Empowerment	3.74	0.70

Interpretation: Respondents reported relatively favorable levels across all major constructs. Digital access recorded the highest mean score, indicating that access to digital tools and infrastructure is comparatively well established. Digital literacy also shows a strong mean, suggesting that respondents generally perceive themselves as moderately to highly capable in using digital systems. Digital empowerment and organizational support remain positive but slightly lower, implying that while access is available, the conversion of that access into empowerment is influenced by contextual and institutional factors.

4.2 Model Fit and Measurement Quality

Table 3. Model fit and measurement quality indices

Indicator	Observed Value	Assessment
CFI	0.94	Indicates good comparative fit; exceeds the conventional threshold of 0.90.
RMSEA	0.052	Indicates close fit; well within the acceptable range below 0.08.
AVE	0.61	Supports convergent validity because AVE exceeds 0.50.
CR	0.87	Demonstrates strong internal consistency because CR exceeds 0.70.

Interpretation: The model fit indices confirm that the proposed SEM model is statistically acceptable and conceptually coherent. The CFI indicates good comparative fit, the RMSEA reflects close fit, the AVE supports convergent validity, and the CR value demonstrates strong internal consistency. Collectively, these indices justify proceeding to interpretation of the structural paths.

4.3 Structural Equation Model and Hypothesis Testing

Figure 1. Structural Equation Model (AMOS-based path summary)

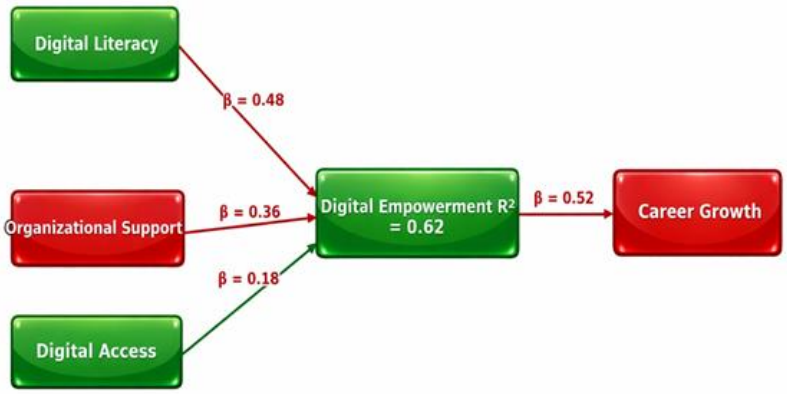

Figure 1. Structural Equation Model (AMOS-based path summary)

Table 4. Hypothesis testing and path coefficients

Hypothesis	Path Coefficient (β)	Result	Interpretive Remark
H1	0.48	Accepted	Digital literacy is the strongest positive predictor and highlights the central role of capability building.
H2	0.36	Accepted	Organizational support shows a substantial effect, confirming that a supportive climate enhances empowerment.
H3	0.18	Partially Accepted	Digital access has a positive but comparatively weak direct effect; access alone is insufficient.
H4	0.52	Accepted	Digital empowerment strongly improves perceived career growth and professional agency.

Interpretation: The structural model demonstrates that digital literacy exerts the strongest positive influence on digital empowerment (β = 0.48).

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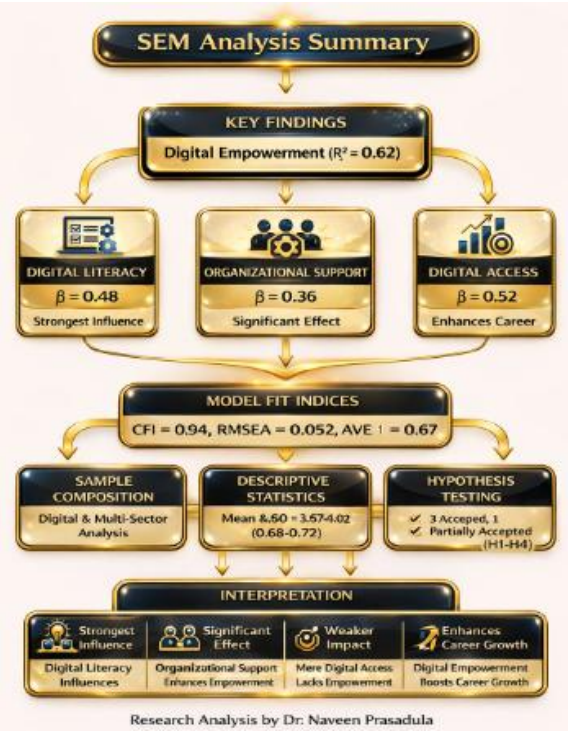

Organizational support also exerts a substantial positive effect (β = 0.36), suggesting that empowerment is strengthened when women employees receive managerial encouragement, institutional resources, and inclusive workplace support. Digital access shows only a modest direct effect (β = 0.18), implying that access to technology, although necessary, does not automatically produce meaningful empowerment unless accompanied by capability development and organizational facilitation. The path from digital empowerment to career growth is the strongest outcome relationship in the model (β = 0.52), confirming that empowered engagement with digital systems translates into professional confidence, greater agency, and improved perceptions of advancement opportunities. The model explains 62 percent of the variance in digital empowerment ($R^2 = 0.62$), indicating substantial explanatory power. This level of explained variance suggests that the framework is robust for understanding empowerment in the present context.

5. Discussion

5.1 Comparison with Previous Studies: The findings align with prior literature emphasizing the importance of digital literacy and organizational support. The results confirm that access alone does not lead to empowerment, thereby strengthening the argument that infrastructure must be complemented by skill development and institutional facilitation.

5.2 Theoretical Implications: The study extends empowerment theory by incorporating digital capability as a central construct and by validating the mediating role of digital empowerment in explaining career growth. It thus deepens theoretical understanding of technology-enabled empowerment in organizational settings.

5.3 Practical Implications: Organizations must invest in training, inclusive policies, and digitally supportive work systems to enhance empowerment. Human resource strategies should prioritize both technological access and sustained capability-building initiatives if they are to improve participation and advancement among women employees.

Executive Summary of Findings

Indicator	Finding
Strongest Predictor	Digital Literacy (β = 0.48)
Key Contextual Driver	Organizational Support (β = 0.36)
Weakest Direct Predictor	Digital Access (β = 0.18)
Main Outcome	Career Growth through Digital Empowerment (β = 0.52)

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6. Conclusion

The study concludes that digital empowerment among women employees in Andhra Pradesh is driven primarily by digital literacy and organizational support. Digital access alone is insufficient without skill development and supportive organizational environments. The AMOS-SEM findings demonstrate that empowered digital engagement significantly improves perceived career growth and professional agency. Overall, the research shows that digital empowerment is a multidimensional outcome rooted in skill, support, and meaningful technological engagement rather than simple connectivity.

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