

Evaluating Digital Workplace Practices and their Effects on Employee Engagement and Productivity Outcomes

OPEN ACCESS

Manuscript ID:
MGT-2026-140111272

Volume: 14

Issue: 1

Month: July

Year: 2026

P-ISSN: 2321-4643

E-ISSN: 2581-9402

Received: 25.05.2026

Accepted: 22.06.2026

Published Online: 01.07.2026

Citation:

Gokul. "Evaluating Digital Workplace Practices and Their Effects on Employee Engagement and Productivity Outcomes." *Shanlax International Journal of Management*, vol. 14, no. 1, 2026, pp. 40–53.

DOI:

<https://doi.org/10.34293/management.v14i1.11272>



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Gokul

*Research Scholar, Department of Management
Christhuraj College (Affiliated to Bharathidasan University)
Tiruchirappalli, Tamil Nadu, India*

Abstract

In our increasingly digital world, digital workplace practices are an integral part of work today. Digital communication platforms, collaboration technologies, flexible working schedules, digital leadership, continuous learning systems, and technology support are becoming increasingly prevalent in organizations that seek to improve employee performance and remain competitive. While considerable investment has been made in digital transformation programs, the true measure of their impact is largely whether they can increase employee engagement and boost productivity results. This study aims to assess how digital workplace practices affect employee engagement and, in turn, affect productivity. A quantitative research design was adopted, using structured questionnaires administered to a sample of 400 employees working with digital workplace technologies across organizations in India. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) and Structural Equation Modeling (SEM) software AMOS to examine the direct relationships among the study variables and the mediating role of employee engagement. The conceptual framework considered digital communication, digital collaboration technologies, flexible working practices, digital leadership, digital learning and development, and technology support as factors affecting employee engagement, which in turn, affects employee productivity. The results show that digital workplace practices have a significant positive impact on employee engagement, which in turn leads to better productivity and organizational performance, with employee engagement partially mediating the relationship. These findings can help organizational leaders, HR professionals, and policymakers develop HR-focused strategies for the digital workplace to foster innovation, operational excellence, and sustainable business growth in the digital business world.

Keywords: Digital Work Practices, Employee Engagement, Employee Productivity, Digital Transformation, Digital Leadership, Flexible Work Practices, Structural Equation Modeling (SEM), Human Resource Management.

Introduction

Digital technologies have rapidly evolved and revolutionized how organizations operate, creating a digitally connected environment where collaboration, flexibility, and innovation are key characteristics of the workplace. Cloud, Artificial Intelligence (AI), enterprise collaboration platforms, workflow automation and digital communication systems have helped businesses streamline business processes, improving employee experience as they are adopted. As these technologies are adopted, organisations are improving employee experience and streamlining business processes. The digital workplace has not remained a simple technological enigma but has grown into a strategic organizational competence essential for sustainable competitiveness, innovation, and sustained business performance in today's knowledge economy (Marsh, Perez Vallejos and Spence, 2024; Mohanty et al., 2024).

After the COVID-19 pandemic, the shift to digital workplaces has ramped up considerably as organizations globally have shifted to hybrid and remote working models. This means that workers today increasingly rely on digital tools to communicate, collaborate, share knowledge, learn, and manage their performance. This has changed the focus for organizations from simply digitizing work processes to building a Digital Ecosystem that improves employee engagement, productivity, and well-being. Industry-level evidence lends weight to this shift: Gallup (2024) reports that business units with highly engaged employees outperform their peers by 17-18% on productivity and 23% on profitability, underlining why engagement is treated as a strategic outcome rather than a soft HR metric. With ongoing digital transformation investments, the impact of digital workplace practices on employee behavior and organizational outcomes is an important area of study.

Digital workplace practices use the right digital technology, processes, and HR strategies to enable effective communication, collaboration, flexibility, and ongoing learning. Digital communication systems, collaboration technologies, flexible work, digital leadership, technology support, and digital learning and development initiatives are examples of such practices. Doing so can help people use organizational resources efficiently, interact across units and distances, build their digital skills, and work autonomously and flexibly. These features play a crucial role in the agility, knowledge sharing, innovation, and employee experience of an organization (Bangura & Lourens, 2024; Mohanty et al., 2024).

In digitally driven workplaces, employee engagement is one of the most powerful factors of success. It represents the emotional, psychological, and action-based dedication of employees to their work and organizational objectives. Highly engaged employees exhibit higher levels of motivation, job satisfaction, innovativeness, organizational commitment, discretionary effort, and, ultimately, organizational performance. Adopting digital workplace practices can enhance employee engagement by enabling effective communication, fostering collaboration, providing learning

opportunities, enabling leadership support, and increasing work flexibility. If employees believe that digital technologies are reliable and helpful, they will acquire a positive attitude toward work and actively participate to ensure the success of the organization.

Organizations that operate in a highly competitive digital setting have also turned employee productivity into a top strategic concern. Digital technologies enhance productivity by automating repetitive tasks, supporting collaborative work in real time, helping to make decisions based on data, and providing employees with instant access to organizational information. Digital flexibility is also beneficial for employees who can better manage their professional and personal responsibilities, leading to more efficient and effective work and better overall job performance. However, organizations need to understand that with technology alone, productivity is not guaranteed unless supported by employee-centered leadership, ongoing digital skills development, and good technological support.

While there have been significant investments in digital transformation, many organizations still struggle to realize the benefits of digital workplace efforts. Poor digital leadership, insufficient technology support, digital fatigue, information overload, cyber security, and techno-stress can all negatively impact employee engagement and thus productivity. In recent years, studies have indicated that over-connectivity and growing digital job requirements could negatively impact employees' psychological health if organizations neglect to develop suitable digital workplace policies and work environments. Thus, a two-way relationship between technological innovation and employee well-being must be established to obtain sustainable organizational performance.

While empirical studies on digital transformation and organizational performance have been previously studied in great detail, there has been very little empirical research that has explored the joint impact of several digital workplace practices (digital communication, collaborative technologies, flexible working, digital leadership, digital learning and development, and technology support) on employee engagement and productivity within a single integrated framework. Additionally, there is

a lack of research examining the mediating effects of employee engagement on digital workplace practices and productivity outcomes. Therefore, this research aims to assess the impact of digital workplace practices on employee engagement and understand the role of employee engagement in improving productivity outcomes. The results will be useful for organizational leaders, human resource managers, and policymakers to understand how to create effective digital workplace strategies that boost employee engagement, productivity, and long-term organizational performance in a digital world.

Statement of the Problem

Digital transformation programs have seen a massive boost in investments from organizations worldwide to improve operational efficiency, team collaboration, and business competitiveness. Digital workplace practices are now a part of modern organizational strategies, such as digital communication platforms, collaboration technologies, flexible working arrangements, digital leadership, digital learning systems, and digital technology support. Even with these significant investments, most organizations still have to deal with poor employee engagement and productivity. The adoption of digital workplace practices relies on more than just the presence of sophisticated technologies, including the acceptance of workers, organizational support, management quality, and the capacity to incorporate digital tools into the daily workflow (Marsh, Perez Vallejos and Spence, 2024).

The literature available has primarily concerned digital transformation from the technological, operational, or organizational performance perspective, with limited research on understanding the global impact of comprehensive digital workplace practices on employee engagement and the resulting productivity. Furthermore, prior research has usually focused on a single dimension of these work arrangements (e.g., remote work, digital communication, technology adoption), leading to disarticulated empirical evidence. This has led to a lack of comprehensive understanding of the interplay and impact of various digital workplace practices under a single conceptual umbrella.

In addition, while employee engagement has been established as an important factor in organizational performance, there is sparse empirical evidence on how digital workplace practices affect employee productivity through their mediation of employee engagement, especially in rapidly changing digital workplace environments. As companies grow and scale their digital transformation efforts, there is a growing demand for research to support the approach that they should be taking based on evidence that shows that digital workplace practices have the most impact on employee engagement and productivity. To address this research gap, this study considers the impact of the digital workplace on employee engagement and the mediating role of employee engagement in improving employee productivity outcomes, presenting important implications for organizational leaders, practitioners, and policymakers for the effective implementation of digital workplace strategies.

Objectives of the Study

The main goal of this research is to understand the impact of digital workplace practices on employee engagement and productivity in today's workplaces. The specific targets were as follows:

- To investigate how digital workplace practices impact employee engagement.
- To measure the effect of employee engagement on employee productivity outcomes,
- To examine the mediating effect of employee engagement between digital workplace practices and employee productivity.
- To determine which aspects of digital workplace practice are important for employee engagement.
- To assess the direct and indirect impact of digital workplace practices on employee productivity using Structural Equation Modeling (SEM).

This study aims to make managerial and policy recommendations to improve employee engagement and productivity via good digital workplace practices.

Research Questions

This study aims to answer the following research question:

- RQ1: What is the impact of digital workplace practices on employee engagement in modern organizations?

- RQ2: How is employee engagement related to employee productivity?
- RQ3: Does employee engagement mediate the relationship between digital workplace practices and employee productivity?
- RQ4: What are the key factors of digital workplace practices that significantly influence worker engagement?
- RQ5: What are the ways in which organizations can use the DWP practices to foster increased employee engagement and better productivity results?

Reviews of Related Literatures

Empirical research over the last few years has consistently shown the increasing significance of digital workplace practices in improving the engagement and productivity of employees, although the evidence base remains fragmented across disciplines, methods, and single-country settings, which limits the extent to which individual findings can be generalized. Marsh, Perez Vallejos, and Spence (2024) conducted a qualitative study to investigate the impact of digital workplace technology intensity on employee well-being. The findings showed that digital technologies have a positive impact on communication, collaboration, and flexibility in working processes, but the negative aspects of digital connectivity, information overload, and technostress may have negative effects on the psychological well-being and involvement of employees. The study highlighted the need for organizations to adopt a human-centered approach to digital workplace strategies and prioritize the well-being of employees alongside technological progress to ensure sustainable organizational performance. However, because the study relied on a small qualitative sample, its findings describe patterns of employee experience rather than the size or statistical significance of the relationship, which is precisely the gap that quantitative, SEM-based studies such as the present one are positioned to address.

Consistent with this, de Moraes, da Cunha, and Ramos (2024) proposed a four-phase iterative model for designing digital workplaces that explicitly accounts for virtuality and enterprise integration, arguing that digital workplace design

is an ongoing organizational process rather than a one-off technology rollout. While the framework is conceptually rich, it was developed through design-science reasoning rather than tested against employee-level outcome data; therefore, its practical claims about engagement and performance remain to be empirically validated, a gap that the present quantitative study helps to close. Bangura and Lourens (2024), in an integrative review of workplace digitalization, similarly concluded that the enablers and constraints of digital adoption are highly context-dependent, cautioning against treating digital workplace practices as a uniform bundle that produces the same outcomes, irrespective of organizational readiness or sector.

In another study, Rick et al. (2024) investigated the effect of applying AI-based technologies from a human-centered design perspective on employees' work engagement. The results showed that artificial intelligence has the potential to positively impact employee engagement by streamlining repetitive tasks, aiding decision-making, and improving teamwork. The authors acknowledged, however, that AI technologies should not supplant human-to-human interaction and that organizations should strive to create digital work environments that allow employees to be autonomous, competent, and meaningfully included. This optimistic reading is tempered by Nadeem, Ahmed, and colleagues (2024), whose review of AI's impact on employee performance found that the direction and size of the effect depend heavily on how AI is implemented and communicated to staff, with poorly managed rollouts triggering the very disengagement that well-managed ones are meant to prevent. Marimon, Mas-Machuca, and Akhmedova (2024) add a further qualification, showing that trust in generative AI systems, rather than exposure to the technology itself, is the variable that consistently predicts employee engagement and performance gains. This suggests that the positive engagement effects reported for digital communication, collaboration, and AI-enabled tools in the present study's framework are likely conditional on the level of trust employees place in those systems, a boundary condition that future research should test explicitly.

Likewise, Liao, Li, and Liu (2024) explored the link between telework and job performance in the context of digital leadership as a moderator. The research found that telework has a positive effect on employee performance, provided it is supported by effective digital leadership and organizational support. Digital leadership was identified as a crucial element in increasing employee engagement, ensuring communication, and improving collaboration in virtual work settings. The results also indicate that the effectiveness of digital workplace use in enhancing employee productivity is driven by leadership capabilities. Li, Yang, Yang, and Zhao (2024) reached a comparable conclusion using a sample of middle managers, finding that digital leadership strengthens work engagement primarily through its effect on employees' sense of psychological safety rather than through any direct technological mechanism. This implies that the leadership dimension of the digital workplace construct is doing more explanatory work than the technology dimension. This is broadly corroborated by more recent evidence: Namatovu and Kyambade (2025), studying public sector organizations in a developing-economy context, found that digital leadership improves organizational performance mainly by accelerating digital transformation rather than acting directly on outcomes, while Agbeyinka (2025), using SEM on a large multi-industry sample, reported that the effect of digital leadership on productivity and retention is substantially mediated by employee engagement, a mediation pathway that closely mirrors the one proposed in the conceptual framework of the present study. In a healthcare-specific setting, Khan, Wang, Khan, and Ahmad (2025) similarly found, via SEM, that digital leadership raises employee empowerment and techno-work engagement, although the pathway they identified runs through psychological empowerment rather than engagement directly, suggesting that the mediating mechanism between digital leadership and productivity outcomes may not be a single uniform construct across occupational contexts.

Stachová et al. (2024) studied the effects of electronic human resource management (E-HRM) tools on employee engagement. The research revealed that digital HR practices positively

impact employee engagement, particularly in terms of enhanced transparency, accessibility, and involvement in the organization's processes through digital communication platforms, performance management systems, and employee self-service technologies. The authors' findings indicate that companies that incorporate digital HRM solutions into employee-centered management practices have a higher chance of fostering greater organizational engagement and overall performance. Handayani et al. (2025), in a systematic literature review of work motivation and engagement in digital environments, reached a similar conclusion but flagged that most of the underlying primary studies used cross-sectional survey designs, which cannot rule out reverse causality between engagement and the perceived quality of digital HR practices. The present study inherits the same limitation and should be interpreted with this caveat in mind.

On the collaboration-technology dimension of the framework, Lane, Leonardi, Contractor, and De Church (2024) offer a theoretical account of how the specific affordances of digital collaboration tools, rather than their mere presence, shape team communication and coordination processes. This implies that treating "collaboration technologies" as a single measured construct, as this study and most quantitative literature do, may obscure meaningful differences between tools with different affordance profiles. Razali, Nor, and Bashirun (2024), in a broader review of the future digital workplace, likewise note that most existing studies bundle heterogeneous technologies together for ease of measurement, which risks understating the influence of any specific practice. Ravhudzulo and Eresia-Eke (2024) add a cautionary note from the flexible-work literature: their study of telecommuting propensity and performance found that the benefits of remote and flexible arrangements are not uniform across employees and that those with low telecommuting propensity can experience engagement declines under enforced flexible-work policies, a nuance the aggregate, organization-level framing of flexible work practices in the present study is not designed to capture.

Not all evidence on digital workplace practices is unambiguously positive, and a critical review of the

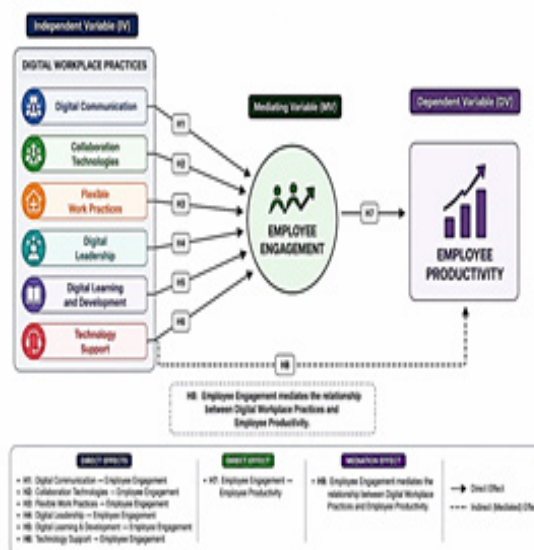
literature must give this weight rather than treating digital adoption as inherently beneficial. Ye, Xu, Wei, Zheng, and Wu (2024), using a configurational (fsQCA) approach rather than the variance-based SEM logic adopted in most studies, including this one, found that technostress creators can inhibit work engagement even where digital tools are otherwise well-implemented, and that personality traits such as openness and self-efficacy determine whether an employee experiences a given digital practice as enabling or draining. Supriyadi, Sulistiasih, Rahmi, Fahrudin and Pramono (2025) reinforce this point in a scoping review of digital fatigue, concluding that cognitive overload, tool redundancy and the blurring of work-life boundaries can erode the productivity gains that digital workplace practices are assumed to generate, particularly under intensive collaboration-technology use. Taken together with Marsh, Perez Vallejos and Spence's (2024) findings on technostress, this body of evidence indicates that the positive relationships hypothesized in the present study's conceptual framework are more likely to hold under conditions of adequate technology support and a manageable digital workload than under conditions of digital overload, a boundary condition that the direct, linear-effects framing of the hypotheses does not explicitly test.

Finally, on the learning and development dimension, Dao, Sisavath, Bui, Bui, and Le (2025) found that digital workforce training raises employee performance mainly by improving job satisfaction and reinforcing positive digital behavior rather than through skill acquisition alone, which suggests that digital learning and development initiatives function as much as an engagement lever as a competence-building one. This is consistent with McCrowre and Adivar's (2024) finding that variation in digital upskilling outcomes is driven as much by demographic and contextual factors as by the training content itself, reinforcing the point that digital learning and development cannot be treated as a uniformly effective intervention across all employee groups. Taken as a whole, this literature is broadly consistent in showing a positive association between digital workplace practices and employee engagement and productivity, but it is also consistent in showing that the relationship is conditional on leadership quality, technology support, employee

trust, and the risk of digital overload; is drawn overwhelmingly from single-dimension or single-country studies; and rarely tests employee engagement as a formal mediator within a single integrated SEM framework. This combination of gaps is precisely what the present study is designed to address, and it is the basis on which the study's conceptual framework and hypotheses are built.

Conceptual Framework

This conceptual framework proposes that Digital Workplace Practices impacts Employee Productivity, which is mediated by Employee Engagement. Digital Work Practices are conceptualized as a multidimensional construct consisting of six dimensions of digital: Digital Communication, Digital Leadership, Flexible Work Practices, Collaborative Technologies, and Technology Support. These practices are expected to increase employees' cognitive, emotional, and behavioral engagement, leading to better productivity outcomes. The framework is based on the premise that good digital workplace practices have a direct impact on employee engagement and a positive indirect effect on employee productivity via increased levels of employee engagement. Therefore, employee engagement is an important link between digital workplace practices and organizational performance.



Research Methodology

The study's design is quantitative, descriptive, and explanatory, and aims to analyze the impact of digital workplace practices on employee engagement and productivity. Data were collected using a cross-sectional survey technique, with the respondents being employees in digitally enabled organizations.

The target population was employees of public and private sector organizations who used digital workplace technologies. Stratified random sampling was used to achieve adequate representation of all industries. The number of respondents sampled (n=400) was deemed adequate for Structural Equation Modeling (SEM) analysis.

Data Collection: Data were collected using a structured questionnaire comprising demographic items and measurement items of the study constructs. The responses were measured on a 5 point Likert Scale, with 1 representing Strongly Disagree and 5 representing Strongly Agree.

Measurement of Variables: Digital Work Practices consists of six variables: Digital Communication, Collaboration Technologies, Flexible Work Practices, Digital Leadership, Digital Learning and Development, and Technology Support. Employee Engagement is the mediating variable, and Employee Productivity is the dependent variable.

Data Analysis: The collected data were analyzed using IBM SPSS Statistics and AMOS Software. To test the proposed hypotheses, the statistical techniques used consisted of descriptive statistics, reliability analysis (Cronbach's alpha), exploratory factor analysis (EFA), confirmatory factor analysis (CFA), Structural Equation Modeling (SEM), and analysis of mediation.

Reliability and Validity: Cronbach's alpha and Composite Reliability (CR) were used to check the reliability of the measurement instrument, and Average Variance Extracted (AVE) and Heterotrait-Monotrait (HTMT) ratio were used to determine convergent and discriminant validity.

Ethical Considerations: Respondents were informed that they were participating in the study, and their anonymity and confidentiality were respected throughout the study. The data collected were processed solely for research purposes in accordance with the ethical principles of research.

Analysis Part of the Study

This section outlines the statistical analysis conducted to identify the relationships between digital workplace practices, employee engagement, and employee productivity. Data were analyzed using AMOS and IBM SPSS Statistics. The analysis included respondents' demographic profiles, descriptive statistics, reliability analysis, exploratory and confirmatory factor analyses, Structural Equation Modeling (SEM), mediation analysis, and hypothesis testing to evaluate the proposed conceptual framework and achieve the study objectives.

Table 1 Demographic Profile of the Respondents (N=400)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	228	57.0
	Female	172	43.0
	Total	400	100.0
Age (years)	21 – 30	128	32.0
	31 – 40	146	36.5
	41 – 50	82	20.5
	Above 50	44	11.0
	Total	400	100.0
Educational Qualification	UG	94	23.5
	Qualification	186	46.5
	Professional degree	86	21.5
	Doctorate	34	8.5
	Total	400	100.0
Work Experience	Below 5 years	118	29.5
	5 – 10 years	144	36.0
	11 – 15 years	82	20.5
	Above 15 years	56	14.0
	Total	400	100.0
Industry	Information Technology	118	29.5
	Banking & Financial Services	76	19.0
	Manufacturing	62	15.5
	Healthcare	54	13.5
	Education	46	11.5
	Others	44	11.0
	Total	400	100.0

Source: Computed Primary Data

As can be seen from Table 1, most of the respondents were male (57.0%), aged between 31 and 40 years (36.5%), and had a postgraduate qualification (46.5%). The majority of respondents had 5-10 years of experience (36.0%), and the Information Technology sector (29.5%) was the largest group in the sample, suggesting a cross-section of the workforce with a digital focus.

Table 2 Descriptive Statistics of the Study Variables (N = 400)

Constructs	No. of Items	Mean	Standard Deviation
Digital Communication	5	4.08	0.63
Collaboration Technologies	5	4.15	0.59
Flexible Work Practices	5	4.01	0.68
Digital Leadership	5	4.12	0.61
Digital Learning & Development	5	4.06	0.64
Technology Support	5	4.10	0.60
Employee Engagement	5	4.18	0.57
Employee Productivity	5	4.21	0.55

Source: Computed Primary Data

The results in Table 2 reveal that the mean scores of all the constructs of the study were above 4.00, meaning that the respondents rated the digital workplace practices positively. The highest mean score was for Employee Productivity ($M = 4.21$, $SD = 0.55$), followed by Employee Engagement ($M = 4.18$, $SD = 0.57$). The standard deviation values relative to each construct were relatively low, suggesting that the perceptions of respondents related to all constructs were consistent.

Reliability Analysis

All measurement scales were tested for internal consistency of items by performing a reliability analysis using Cronbach's alpha. Nunnally and Bernstein (1994) suggested that Cronbach's alpha scores greater than 0.70 are acceptable, and scores higher than 0.80 are good for internal consistency.

Table 3 Reliability Analysis of the Study Constructs

Constructs	No. of Items	Cronbach's Alpha	Interpretation
Digital Communication	5	0.889	Good
Collaboration Technologies	5	0.901	Excellent
Flexible Work Practices	5	0.876	Good
Digital Leadership	5	0.894	Good
Digital Learning & Development	5	0.881	Good
Technology Support	5	0.887	Good
Employee Engagement	5	0.912	Excellent
Employee Productivity	5	0.905	Excellent

Source: Computed Primary Data

The Cronbach's alpha values ranged between 0.876 and 0.912, which is higher than the recommended value of 0.70. The results indicated good internal consistency and reliability of all constructs for further statistical analyses.

Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) was conducted to determine the factor structure of the measurement items. The validity of the data for analysis to be undertaken with the technique of factor analysis was checked by the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (Kaiser, 1974), and Bartlett's Test of Sphericity.

Table 4(a) KMO and Bartlett's Test

Measure	Value
Kaiser-Meyer-Olkin (KMO) Measure	0.921
Bartlett's Test of Sphericity (Approx. Chi-Square)	8643.528
Degrees of Freedom (df)	780
Significance (p-value)	0.000

The KMO sampling adequacy coefficient of KMO is 0.921, which is higher than the recommended value of 0.70, thus showing very good

sampling adequacy. Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 8643.528$, $p < 0.001$) which means that the data were suitable for factor analysis.

Table 4(b) Total Variance Explained

Component	Eigenvalue	% of Variance	Cumulative %
1	12.846	32.12	32.12
2	4.358	10.89	43.01
3	3.274	8.19	51.20
4	2.785	6.96	58.16
5	2.138	5.35	63.51
6	1.864	4.66	68.17
7	1.572	3.93	72.10
8	1.324	3.31	75.41

Source: Computed Primary data

Eight components with eigenvalues greater than one were extracted, explaining 75.41% of the total variance, indicating a satisfactory factor structure.

Table 4(c) Summary of Factor Loadings

Construct	Factor Loading Range
Digital Communication	0.744 – 0.891
Collaboration Technologies	0.768 – 0.903
Flexible Work Practices	0.729 – 0.884
Digital Leadership	0.751 – 0.897
Digital Learning & Development	0.742 – 0.886
Technology Support	0.758 – 0.892
Employee Engagement	0.781 – 0.914
Employee Productivity	0.773 – 0.907

Source: Computed Primary Data

All measurement items had factor loadings greater than the recommended value of 0.70, which means that there was good construct validity;

hence, all the measurement items were retained for Confirmatory Factor Analysis.

Confirmatory Factor Analysis (CFA): Confirmatory Factor Analysis (CFA) was used to assess the reliability and validity of the measurement model. To demonstrate convergent validity, standardized factor loadings (SL), Composite Reliability (CR), and Average Variance Extracted (AVE) were analyzed following the criteria set out by Fornell and Larcker (1981).

Table 5 Convergent Validity of the Measurement Model

Construct	Standardized Loadings	CR	AVE
Digital Communication	0.744 – 0.891	0.914	0.681
Collaboration Technologies	0.768 – 0.903	0.926	0.714
Flexible Work Practices	0.729 – 0.884	0.905	0.657
Digital Leadership	0.751 – 0.897	0.919	0.694
Digital Learning & Development	0.742 – 0.886	0.911	0.673
Technology Support	0.758 – 0.892	0.917	0.689
Employee Engagement	0.781 – 0.914	0.932	0.734

Source: Computed Primary Data

The factor loadings of all study constructs were > 0.70 , the Composite Reliability (CR) values were > 0.70 , and the Average Variance Extracted (AVE) values were > 0.50 , indicating that the constructs had satisfactory convergent validity.

Discriminant Validity: Heterotrait–monotrait ratio (HTMT) was used to check discriminant validity. Using Henseler et al.'s (2015) criteria, all constructs had acceptable discriminant validity, as indicated by values of less than 0.85.

Table 6 HTMT Discriminant Validity Matrix

Constructs	DC	CT	FWP	DL	DLD	TS	EE	EP
Digital Communication (DC)	-							
Collaboration Technologies (CT)	0.671	-						
Flexible Work Practices (FWP)	0.648	0.694	-					

Digital Leadership (DL)	0.702	0.731	0.688	-				
Digital Learning & Development (DLD)	0.665	0.683	0.654	0.714	-			
Technology Support (TS)	0.689	0.724	0.671	0.748	0.692	-		
Employee Engagement (EE)	0.741	0.773	0.726	0.801	0.759	0.782	-	
Employee Productivity (EP)	0.684	0.721	0.698	0.756	0.719	0.738	0.812	-

Source: Computed Primary Data

All the HTMT values were less than the recommended value of 0.85, which shows that the constructs are empirically different from one another and have satisfactory discriminant validity.

Structural Model Fit Assessment

Several goodness-of-fit indices were used to assess the overall fitness of the proposed Structural Equation Model (SEM). The values obtained were compared with the recommended threshold value mentioned in the literature.

AGFI	≥ 0.90	0.907	Good Fit
CFI	≥ 0.90	0.951	Excellent Fit
RMSEA	≤ 0.08	0.054	Good Fit
SRMR	≤ 0.08	0.047	Good Fit

Source: Computed Primary Data

The structural model showed a moderate fit, with all model fit indices satisfying the recommended values. The outcome of this analysis corroborates that the proposed conceptual framework can represent the observed data and is appropriate for hypothesis testing.

Table 7 Model Fit Indices

Model Fit Index	Recommended Value	Obtained Value	Interpretation
Chi-square/df (CMIN/DF)	<3.00	2.184	Good Fit
GFI	≥ 0.90	0.924	Good Fit

Hypotheses Testing

The method used in this research is the method of Structural Equation Modeling (SEM) which is used to examine the direct relationship between the study variables. The standardized path coefficients, Critical Ratio (CR), and significance values were used to test the proposed hypotheses.

Table 8 Results of Hypotheses Testing

Hypothesis	Relationship	β	CR	p-value	Decision
H1	Digital Communication $\rightarrow$ Employee Engagement	0.271	4.683	<0.001	Supported
H2	Collaboration Technologies $\rightarrow$ Employee Engagement	0.248	4.291	<0.001	Supported
H3	Flexible Work Practices $\rightarrow$ Employee Engagement	0.193	3.827	<0.001	Supported
H4	Digital Leadership $\rightarrow$ Employee Engagement	0.312	5.446	<0.001	Supported
H5	Digital Learning & Development $\rightarrow$ Employee Engagement	0.221	4.104	<0.001	Supported
H6	Technology Support $\rightarrow$ Employee Engagement	0.236	4.358	<0.001	Supported
H7	Employee Engagement $\rightarrow$ Employee Productivity	0.694	10.847	<0.001	Supported

Source: Computed Primary Data

All six dimensions of digital workplace practice had a significant positive effect on engagement, as shown in the SEM results. Digital Leadership ($\beta = 0.312$), followed by Digital Communication ($\beta = 0.271$) and Collaboration Technologies ($\beta = 0.248$), were the strongest drivers of engagement among those variables. Moreover, Employee Engagement showed a strong positive relationship

with Employee Productivity ($\beta = 0.694$), which supported all direct hypotheses tested in the study.

Mediation Analysis

The interaction of Employee Engagement was analyzed using the bootstrapping method with 5,000 resamples. The indirect effect was deemed statistically significant if the 95% CI did not include the value of zero.

Table 9 Mediation Analysis Results

Relationship	Direct Effect	Indirect Effect	Total Effect	95% CI	p-Value	Mediation
Digital Workplace Practices → Employee Engagement → Employee Productivity	0.284	0.451	0.735	0.348-0.563	<0.001	Partial Mediation

Source: Computed Primary Data

The mediation analysis supported the results that the relationship between Digital Workplace Practices and Employee Productivity was significantly mediated by Employee Engagement. The indirect effect was significant ($\beta = 0.451$, $p < 0.001$), and the direct effect was also significant, suggesting partial mediation. The results indicate that the successful application of a digital workplace has a direct positive effect on employee productivity and indirectly impacts employee productivity through employee engagement.

Summary of Major Findings, Recommendations and Conclusion

Major Findings

The key results of this study are briefly outlined below.

The use of a digital workplace had a clear positive impact on employee engagement.

The most significant predictor of employee engagement was all dimensions of digital workplace practice combined, namely Digital Leadership.

Other factors that showed a strong positive impact on employee engagement were Collaboration Technologies, Digital Communication, Flexible Work Practices, Digital Learning and Development, and Technology Support.

Employee engagement also positively influenced employee productivity, suggesting that engaged employees work more effectively in a digital workplace. The results of the Structural Equation Modeling (SEM) supported all the proposed hypotheses.

Mediation analysis revealed that employee engagement partially mediates the relationship between digital workplace practices and productivity.

The results indicate that companies that successfully adopt the concept of a digital workplace have great potential to increase employee engagement, resulting in greater organizational performance and productivity.

Managerial Implications

The results of this study will help organizational leaders, human resource professionals, and policymakers understand how to improve employee engagement and productivity by implementing e-workplace programs. Investing in digital communications, digital collaboration tools, and ongoing digital training will help companies build a staff-oriented work environment. Hiring the right digital leaders and equipping them with adequate digital technology can further enhance employee engagement and productivity. Furthermore, firms should encourage flexible working approaches while providing training and resources for existing workers to better meet the changing demands of digital work practices. These strategies can help organizations create an extremely engaged employee base, maximize productivity, and establish a sustainable organization for the digital era.

Recommendations

The following recommendations are provided based on the results of this study:

- **Enhancing Digital Leadership:** Digital Leadership skills need to be fostered through frequent training and leadership development programs in organizations so that leaders can lead their employees well on digital transformation initiatives.
- **Improve Digital Communication and Collaboration:** Invest in secure, easy-to-use digital communication and collaboration tools to enable knowledge sharing, collaboration, and effective decision-making.
- **Encourage Continuous Digital Learning:** Allocate regular digital skills training and upskilling programs to enable employees to keep up with new technologies and enhance their performance in the workplace.
- **Ensure Adequate Technology Support:** Organizations should have a good, reliable

digital infrastructure, provide timely technology support, and ensure cyber security to make it easier for employees to work.

- **Support Flexible Work Practices:** Flexible and hybrid work arrangements should be encouraged by implementing proper digital tools and organizational policies to increase employees' well-being, engagement, and productivity.
- **Create Regular Employee Feedback Processes:** Regularly collect employee feedback on digital workplace practices and use the information to enhance digital initiatives, employee experience, and organizational performance.

Limitations

This study has some limitations that need to be considered when interpreting its findings. The first methodology is the cross-sectional research design used in this study, which is not suitable for establishing causal relationships between the study variables. Second, the results rely on self-reported answers, which can have response bias. Third, the study examines employees in digitally enabled organizations; therefore, the results might not be applicable to employees in other organizations or industries. Longitudinal studies and wider industry and sample coverage could overcome the problems faced by the current study.

Future Research Directions

Researchers could explore how new technologies, such as artificial intelligence, machine learning, and intelligent automation, affect employee engagement and productivity in the future. This can also involve the examination of moderating factors in digital workplace environments, such as organizational culture, readiness for digital, and employee resilience. Comparative studies across industries and countries and longitudinal study designs might provide deeper insights into the long-term effects of digital workplace practices on organizational performance.

Conclusion

In today's digital age, the adoption of digital workplace practices is essential for organizations to sustain growth and remain competitive. This study

aimed to explore how the use of a digital workplace affects employee engagement and productivity, with employee engagement identified as one of the key mediating factors. The results suggest that digital communication, digital collaboration technologies, flexible workforce, digital leadership, digital learning and development, and technology support are all significant factors in employee engagement, which then improves employee productivity. Of these factors, digital leadership was the most powerful driver of employee engagement improvement. The study also shows the potential to boost employees' motivation, operational efficiency, and overall organizational performance in companies that adopt a digital workplace approach that centers on the employee. The conceptual framework and empirical results add to the current body of knowledge on digital transformation and HRM and provide useful insights for managers and policymakers. In conclusion, creating a successful digital workplace is crucial for building an engaged, productive, and resilient workforce that can meet the changing demands of the modern workplace.

References

- Agbeyinka, Y. I. "Role of Digital Leadership in Enhancing Engagement, Productivity, and Retention: A Post-Pandemic Analysis." *International Journal of Applied Research in Business and Management*, vol. 6, no. 5, 2025.
- Bangura, S., and M. Lourens. "Constraints and Enablement of Workplace Digitalisation: An Integrative Review." *International Journal of Business & Management Studies*, vol. 5, no. 5, 2024.
- Dao, T. H. A., et al. "Digital Workforce Training, Employee Motivation, Job Satisfaction, Digital Behavior as Determinants of Employee Performance: Empirical Research From Vietnam." *SAGE Open*, vol. 15, no. 4, 2025.
- De Moraes, C. R., P. R. da Cunha, and I. Ramos. "Designing Digital Workplaces: A Four-Phase Iterative Approach with Guidelines Concerning Virtuality and Enterprise Integration." *Pacific Asia Journal of the*

- Association for Information Systems*, vol. 16, no. 1, 2024, pp. 74–98.
- Fornell, C., and D. F. Larcker. “Evaluating Structural Equation Models with Unobservable Variables and Measurement Error.” *Journal of Marketing Research*, vol. 18, no. 1, 1981, pp. 39–50.
- Gallup. *State of the Global Workplace: 2024 Report*. Gallup, Inc., 2024.
- Handayani, N., S. Febriyanti, and M. S. Pradana. “Work Motivation and Employee Engagement in Digital Work Environments: A Systematic Literature Review.” *Jurnal Ilmiah Manajemen Kesatuan*, vol. 14, no. 1, 2025.
- Henseler, J., C. M. Ringle, and M. Sarstedt. “A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling.” *Journal of the Academy of Marketing Science*, vol. 43, no. 1, 2015, pp. 115–135.
- Kaiser, H. F. “An Index of Factorial Simplicity.” *Psychometrika*, vol. 39, no. 1, 1974, pp. 31–36.
- Khan, A. N., et al. “Digital Leadership Enhances Employee Empowerment, Techno-work Engagement, and Sustainability: SEM Analysis in Public Healthcare.” *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, vol. 62, no. 5, 2025.
- Lane, J. N., et al. “Teams in the Digital Workplace: Technology’s Role for Communication, Collaboration, and Performance.” *Small Group Research*, vol. 55, no. 1, 2024, pp. 139–183.
- Li, Z., C. Yang, Z. Yang, and Y. Zhao. “The Impact of Middle Managers’ Digital Leadership on Employee Work Engagement.” *Frontiers in Psychology*, vol. 15, 2024, article 1368442.
- Liao, M., S. Li, and H. Liu. “The Impact Mechanism of Telework on Job Performance: A Cross-Level Moderation Model of Digital Leadership.” *Scientific Reports*, vol. 14, no. 1, 2024, article 12520.
- Marimon, F., M. Mas-Machuca, and A. Akhmedova. “Trusting in Generative AI: Catalyst for Employee Performance and Engagement in the Workplace.” *International Journal of Human-Computer Interaction*, vol. 41, no. 11, 2024, pp. 7076–7091.
- Marsh, E., E. Perez Vallejos, and A. Spence. “Digital Workplace Technology Intensity: Qualitative Insights on Employee Wellbeing Impacts of Digital Workplace Job Demands.” *Frontiers in Organizational Psychology*, vol. 2, 2024, Article 1392997.
- McCrowre, R., and B. Adivar. “Exploring Underlying Factors for Variations in Digital Upskilling.” *Industry and Higher Education*, vol. 38, no. 6, 2024, pp. 515–533.
- Mohanty, A. K., et al. “Digital Transformation in Organizational Management: Impacts on Productivity, Employee Engagement, and Innovation.” *Library Progress International*, vol. 44, no. 3, 2024.
- Nadeem, M., et al. “Examining the Impact of Artificial Intelligence on Employee Performance in the Digital Era: An Analysis and Future Research Direction.” *Journal of High Technology Management Research*, vol. 35, no. 2, 2024, article 100520.
- Namatovu, A., and M. Kyambade. “Assessing the Impact of Digital Leadership on Public Sector Performance: The Mediation Role of Digital Transformation in Developing Economies.” *SAGE Open*, vol. 15, no. 3, 2025.
- Nunnally, J. C., and I. H. Bernstein. *Psychometric Theory*. 3rd ed., McGraw-Hill, 1994.
- Ravhudzulo, H., and C. Eresia-Eke. “Employee Engagement, Telecommuting Propensity, and Employee Performance in the Virtual Workplace.” *Cogent Business & Management*, vol. 11, no. 1, 2024, article 2422559.
- Razali, M. M., K. M. Nor, and S. N. Bashirun. “The Future Digital Workplace: A Review.” *Gading Journal for the Social Sciences*, vol. 27, no. 1, 2024, pp. 42–52.
- Rick, V. B., et al. “Effects of AI-Based Technologies on Employees’ Work Engagement: Implications for the Human-Centered Design of Digital Work.” *Zeitschrift für Arbeitswissenschaft*, vol. 78, no. 3, 2024, pp. 323–334.
- Stachová, K., Z. Stacho, P. Šamalík, and F. Sekan. “The Impact of E-HRM Tools on Employee

- Engagement.” *Administrative Sciences*, vol. 14, no. 11, 2024, article 303.
- Supriyadi, T., et al. “The Impact of Digital Fatigue on Employee Productivity and Well-Being: A Scoping Literature Review.” *Environment and Social Psychology*, vol. 10, no. 2, 2025.
- Ye, D., et al. “Employee Work Engagement in the Digital Transformation of Enterprises: A Fuzzy-Set Qualitative Comparative Analysis.” *Humanities and Social Sciences Communications*, vol. 11, no. 1, 2024, article 35.

Author Details

Gokul, Research Scholar, Department of Management, Christhuraj College (Affiliated to Bharathidasan University), Tiruchirappalli, Tamil Nadu, India, **Email ID:** gokulakaviarasan@gmail.com.