

A Comparative Study on Employees' Mental Health in Enterprises in the Context of Digitalization

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Abstract

This study aims to investigate the current status and influencing factors of employees' mental health in enterprises within the context of digitalization, and to analyze the mechanisms through which digital work environments affect employees' psychological stress, anxiety, depression, and job satisfaction. Using a combination of questionnaire surveys and semi-structured interviews, data were collected from 300 employees and in-depth interviews with 10 managers and employees. The study examines the impact of factors such as intensity of digital tool usage, frequency of remote work, information overload, and technological adaptability on mental health. The results indicate that high-intensity digital work environments significantly increase employees' psychological stress and anxiety levels, whereas proper information management, technology training, and adequate work resources can effectively alleviate digital stress and enhance job satisfaction. This research provides empirical evidence for enterprises to formulate mental health management strategies during digital transformation and offers reference for policymakers, managers, and mental health interventions.

Keywords

Digital Work Environment, Employee Mental Health, Psychological Stress, Anxiety

1. Introduction

With the rapid development of global information technology and the continuous advancement of enterprise digital transformation, digital work environments have become a defining feature of modern organizational operations. Digital tools and platforms are increasingly integrated into employees' daily work, ranging from office automation and remote collaboration platforms to instant messaging and internal social networks. These digital means have significantly improved work efficiency and organizational flexibility. However, this deep integration also brings unprecedented psychological stress and health challenges. While employees benefit from the convenience of digitalization, they also face issues such as information overload, blurred boundaries between work and life, continuous online pressure, and social isolation, leading to increased mental health risks [1].

Research indicates that although work patterns in digital environments offer greater flexibility and autonomy, they may simultaneously exacerbate anxiety, depression, burnout, and mental fatigue, thereby significantly impacting employees' physical and mental well-being and work performance. In large enterprises and multinational corporations, the widespread adoption of remote work, geographically dispersed collaboration, and online performance monitoring has led to multidimensional and complex psychological pressures. On one hand, remote work allows employees to flexibly schedule their tasks but may blur work-life boundaries, increasing mental burden; on the other hand, real-time communication tools and task reminders, while enhancing efficiency, may induce "always-on" stress and information interference. Moreover, digital performance assessments and data-driven management systems can create a sense of surveillance, potentially causing anxiety, burnout, and decreased job satisfaction. Mental health issues in digital work environments not only affect individuals but also directly influence organizational performance, innovation capacity, and employee retention. Employees with poor mental health are more prone to reduced attention, poor decision-making, impaired teamwork, and interpersonal conflicts, thereby affecting overall productivity and competitiveness. Therefore, addressing employees' mental health in digital environments is not only an important human resource management concern but also a core element of enterprise sustainable development strategies [2].

Both domestic and international scholars have conducted research on employees' mental health in digital contexts, yet differences exist in perspectives and methodologies. International studies primarily focus on the impact of information technology on work load, work-life conflict, and psychological stress, emphasizing the direct psychological effects of technology, such as "technostress," on job satisfaction, performance, and mental health. Domestic research, by contrast, pays more attention to organizational support, corporate culture, and employees' coping strategies as moderators of mental health outcomes. For example, some scholars have noted that organizational psychological support, work autonomy, and training resources can effectively alleviate psychological stress caused by digital environments, whereas employees lacking support are more prone to anxiety and burnout. Despite these findings, systematic and integrative studies remain limited, particularly research that simultaneously considers digital tool usage, sources of psychological

stress, perceived organizational support, and individual coping strategies in a multi-level framework [3]. A comprehensive theoretical and practical framework has yet to be established. Therefore, empirical research is necessary to uncover the current state, influencing factors, and underlying mechanisms of employees' mental health, providing theoretical support for evidence-based mental health management strategies during digital transformation [4].

In terms of research methodology, this study adopts a combination of questionnaire surveys and semi-structured interviews. Questionnaire surveys enable the systematic collection of data on employees' work conditions, psychological stress levels, mental health status, and patterns of digital tool usage, providing quantitative support for analyzing general trends and key influencing factors. Interviews offer in-depth insights into employees' personal experiences, subjective perceptions, and coping strategies, supplementing the micro-level psychological processes and contextual factors that questionnaires may fail to capture. The combination of these methods not only provides broad data support but also facilitates a deep understanding of the complexity and multidimensional nature of mental health issues in digital contexts, ensuring both scientific rigor and practical relevance. Furthermore, integrating data from surveys and interviews allows exploration of the interaction between individual psychological experiences and organizational environments, offering multi-level empirical evidence for theoretical development.

The study of employees' mental health in digital work environments holds significant theoretical and practical implications. Theoretically, this research contributes to the literature in organizational psychology and occupational health by providing a systematic framework and empirical support for understanding the impact of digital transformation on employees' mental health. It also extends existing mental health measurement methods and research models by integrating digital work environments, organizational support, and individual coping strategies, offering new perspectives for academia. Practically, the findings can guide enterprise managers and human resource departments in developing scientifically informed and effective mental health interventions. For instance, based on research results, enterprises can optimize digital workflows, reasonably allocate work time, enhance organizational support, and provide mental health training and counseling services to alleviate employee stress, improve job satisfaction, and enhance performance. Moreover, the study can promote the establishment of long-term mental health management mechanisms, creating supportive digital work environments that advance both sustainable enterprise development and employee well-being.

In conclusion, employees' mental health in digital work environments is characterized by multidimensionality, complexity, and practical urgency. By employing a combined approach of questionnaires and interviews, this study aims to systematically analyze the current state, primary influencing factors, and coping mechanisms of employees' mental health from individual, organizational, and digital environment perspectives, providing empirical support for theory and scientific guidance for management practice. The research seeks to uncover regularities in mental health issues under digitalization, explore the interaction between digital transformation and employee well-being, and offer theoretical and practical guidance for sustainable management in the digital era [5].

2. Theoretical Framework

The widespread application of digital technologies is profoundly reshaping modern enterprise operations and transforming employees' work experiences and psychological states. With the proliferation of remote work, mobile office solutions, enterprise digital management systems, and intelligent office tools, employees enjoy greater flexibility and convenience but also face new sources of psychological stress, including information overload, blurred boundaries between work and life, constant online work demands, and anxiety arising from technological failures. These stressors have significant implications for employees' mental health, and understanding their effects and underlying mechanisms requires the support of multiple theoretical frameworks.

First, this study is grounded in the Job Demands-Resources (JD-R) model. The JD-R model posits that employees' work stress and mental health are influenced by two categories of factors: job demands and job resources. Job demands refer to aspects of work requiring physical, cognitive, or emotional effort, such as information processing load, task complexity, and technological adaptation requirements. Job resources include work autonomy, technical support, organizational support, and social support. In digital work environments, job demands often increase—for example, employees must constantly monitor emails, use various software tools, and coordinate multiple tasks in remote meetings—while corresponding job resources may be insufficient, such as lacking technical training or mental health interventions. This “high demand-low resource” combination can lead to psychological problems, including anxiety, depression, emotional exhaustion, and burnout. The JD-R model provides a systematic analytical tool to study employees' mental health in digital contexts, revealing how the balance between job demands and resources affects psychological outcomes.

Second, this study incorporates Technostress theory as a key framework for understanding mental health in digital contexts. Technostress refers to the psychological strain and discomfort experienced by individuals due to technology use, encompassing techno-anxiety, information overload, techno-insecurity, and feelings of incompetence induced by technological complexity. As proposed by Ragu-Nathan et al. while digital tools can enhance work efficiency, they may also act as sources of psychological stress. Frequent use of enterprise collaboration software, data analysis tools, or remote work platforms, without adequate training and support, can increase cognitive load, destabilize emotions, reduce job satisfaction, and even trigger mental health issues. Technostress theory not only explains the direct impact of digital

technologies on employees' psychological states but also complements the JD-R model by analyzing how technology use adds to job demands and depletes resources, thereby elucidating the relationship between digital work environments and mental health.

Third, the study draws on the Multidimensional Model of Employee Mental Health to inform survey design and interview analysis. Mental health is not merely the absence of mental disorders but a comprehensive state encompassing emotional, cognitive, behavioral, and social functioning. Common dimensions include emotional well-being, psychological resilience, stress coping, job satisfaction, and organizational adaptation. In digital contexts, these dimensions may be differentially affected. For example, remote work may increase job autonomy but reduce social interaction frequency, thereby impacting social support and emotional well-being; technostress may weaken resilience, increasing anxiety and burnout. Conceptualizing mental health as a multidimensional construct allows for a comprehensive assessment of the complex effects of digital work on employees' psychological states and guides the design of both quantitative and qualitative measures [6].

Additionally, Social Support Theory is introduced as a moderating framework. Social support refers to the emotional, informational, and instrumental assistance an individual receives when facing stress. Sources include colleagues, supervisors, and organizational mental health services. Research indicates that social support can buffer the adverse effects of technostress and high job demands on mental health. In digital environments, remote work and geographically dispersed collaboration may reduce opportunities for immediate social support, increasing loneliness and psychological burden. Incorporating social support into the theoretical framework helps explain why employees in similar digital work environments may exhibit differing mental health outcomes.

Finally, the study employs the Mixed Methods Research Framework to guide data collection and analysis. Questionnaire surveys allow for the collection of large-scale quantitative data, measuring employees' general mental health status and its relationship with features of the digital work environment. Semi-structured interviews provide qualitative insights, revealing employees' subjective experiences, coping strategies, and the supportive or obstructive role of organizational environments. Integrating these methods balances research breadth and depth, ensuring that findings are both statistically robust and reflective of authentic psychological experiences, thus offering actionable insights for improving employee mental health in digital contexts.

In summary, the theoretical framework of this study is supported by four main theories: the JD-R model offers a macro perspective on the balance between digital job demands and resources; technostress theory explains the direct psychological impacts of digital tool usage; the multidimensional model of mental health ensures comprehensive measurement of employees' psychological states across quantitative and qualitative dimensions; and social support theory elucidates individual differences and moderating effects. The mixed methods framework guides the data collection and analysis strategy. Together, these theoretical underpinnings enable a systematic and in-depth exploration of the mechanisms shaping employee mental health in digital work environments, providing a solid academic foundation for subsequent survey design, interview analysis, and discussion of results.

3. Research Methodology

This study adopts a mixed-methods design, combining questionnaire surveys and semi-structured interviews to systematically examine the current state, influencing factors, and underlying mechanisms of employees' mental health in digital work environments. In digital contexts, employee mental health is affected not only by objective work conditions but also by subjective experiences and social support. Therefore, this study emphasizes both the breadth of quantitative analysis and the depth of qualitative analysis to comprehensively capture employees' psychological well-being during enterprise digital transformation [7].

Research Participants. The study sample comprises employees from industries including information technology, finance, manufacturing, and education. These industries were selected due to their representativeness in enterprise digital transformation and the high reliance of employees on digital tools in daily work. To ensure data representativeness, a stratified random sampling method was employed, stratifying participants by enterprise size, department type, and job function, and randomly selecting employees from each stratum to capture diverse positions and career stages.

Quantitative Study. Questionnaire design was based on the multidimensional model of mental health, the Job Demands-Resources (JD-R) model, and Technostress theory. The questionnaire consists of five main modules: (1) employee demographics, (2) job demands (e.g., task complexity, information load, intensity of digital tool usage), (3) job resources (e.g., technical training, organizational support, social support), (4) technostress experiences (e.g., information overload, techno-anxiety, technological complexity), and (5) mental health status (including emotional well-being, psychological resilience, perceived stress, and job satisfaction). Validated instruments such as the General Health Questionnaire (GHQ-12), the Maslach Burnout Inventory (MBI), and the Perceived Stress Scale (PSS) were employed. Items were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) to facilitate statistical analysis.

To ensure reliability and validity, a pilot survey with 50 participants was conducted prior to formal data collection. Cronbach's alpha coefficients were used to assess internal consistency, and expert reviews verified content validity. The

formal survey aimed to collect at least 500 valid responses to ensure statistical reliability. Quantitative data were analyzed using descriptive statistics, correlation analysis, regression analysis, and structural equation modeling (SEM) to explore the direct and indirect effects of digital work environment factors on employee mental health.

Qualitative Study. Semi-structured interviews complemented the survey by capturing employees' subjective experiences and psychological mechanisms that questionnaires cannot fully reveal. Interview participants were selected from the survey sample, ensuring diversity in job type, gender, age, and tenure. Interviews focused on topics such as work experiences in digital environments, information processing stress, technology-related challenges, self-perceived mental health, organizational support, and coping strategies. Interviews were conducted face-to-face or via online video, lasting approximately 45-60 minutes, audio-recorded, and transcribed verbatim. To ensure reliability, the interview guide was reviewed by experts and pre-tested to confirm clarity and comparability of questions.

Data Analysis. Quantitative data were processed using SPSS and AMOS. Descriptive statistics depicted the overall mental health status of employees and the characteristics of digital work environments. Correlation and regression analyses examined the effects of job demands, job resources, and technostress on mental health. SEM was employed to explore variable pathways and potential mediating effects. Qualitative data were analyzed using content and thematic analysis, with coding, categorization, and pattern identification to reveal factors influencing mental health, coping strategies, and organizational support mechanisms. Findings from qualitative analysis were triangulated with quantitative results to enhance reliability and interpretive power.

Ethical Considerations. The study adhered to ethical guidelines. All participants provided informed consent, with clear explanations of the research purpose, data usage, and anonymity measures. Confidentiality of participant information was maintained, and research data were used solely for academic purposes. Interview content was anonymized before citation. Additionally, information on mental health support resources was provided to prevent potential distress from discussing sensitive psychological topics.

In summary, this chapter details the research participants, data collection methods, questionnaire and interview design, data analysis procedures, and ethical considerations. By employing a mixed-methods design, quantitative data reveal the overall status and influencing factors of employee mental health in digital environments, while qualitative data provide an in-depth understanding of subjective experiences and coping strategies. The combination of surveys and interviews ensures both the breadth and depth of the study, yielding results that are statistically robust and practically relevant, offering a solid foundation for enterprises to develop interventions for employee mental health during digital transformation [8].

4. Empirical Analysis

This chapter presents an analysis of employees' mental health in digital work environments based on questionnaire survey data ($n = 350$) and interview findings. By measuring dimensions such as stress, anxiety, and depression, and examining two core influencing factors-job demands and technostress-the study aims to uncover the mechanisms through which digital work environments affect mental health. Descriptive statistics and multiple regression analyses were conducted using SPSS, and interview results were integrated to provide deeper interpretation, ensuring both the validity and rigor of the analysis.

Descriptive statistics were calculated for 350 employees across key mental health indicators, including perceived stress, anxiety, and depressive tendencies. All items were rated on a five-point Likert scale (1 = very low, 5 = very high). Results are presented in Table 1.

Table 1. Overall Mental Health Status ($n = 350$)

Indicator	Mean	SD	Min	Max
Perceived Stress	3.42	0.78	1	5
Anxiety	3.18	0.81	1	5
Depressive Tendency	2.95	0.74	1	5
Mental Fatigue	3.36	0.80	1	5

As shown in Table 1, employees exhibit moderately high levels of perceived stress, anxiety, and mental fatigue. Depressive tendencies are slightly lower but still near the medium range. Interview data indicate that heavy workloads, frequent digital tool notifications, and remote collaboration pressures are the primary sources of psychological burden. These findings suggest that employees' mental health is under considerable challenge in digital work environments, highlighting the need for targeted interventions addressing core stressors.

To further examine the main factors affecting employee mental health in digital contexts, the study focused on two core variables: job demands and technostress. Multiple regression analyses were conducted to assess their impact on perceived stress, anxiety, and mental fatigue, complemented by interview insights. Results are summarized in Table 2.

Table 2. Factors Affecting Mental Health in Digital Work Environments (Regression Coefficients)

Depent Variable	Indepent Variable	β	SE	t	P
Perceived Stress	Job Demands	0.48	0.06	8.00	<0.001
Perceived Stress	Technostress	0.35	0.05	7.00	<0.001
Anxiety	Job Demands	0.42	0.07	6.00	<0.001
Anxiety	Technostress	0.37	0.06	6.17	<0.001
Mental Faigue	Job Demands	0.39	0.06	6.50	<0.001
Mental Fatigue	Technostress	0.33	0.05	6.60	<0.001

Table 2 indicates that both job demands and technostress have significant positive effects on employees' mental health indicators, with regression coefficients ranging from 0.33 to 0.48 (all $p < 0.001$). Specifically, job demands—including task volume, urgency, and multitasking pressure—emerge as the most important factors affecting perceived stress and anxiety. Several interviewees noted, "Handling multiple system tasks and remote meetings every day leads to mental exhaustion." Technostress, primarily resulting from frequent digital notifications, learning new software, and online collaboration, has a particularly strong impact on mental fatigue. Interview data revealed, "Constant system messages interrupt workflow, causing tension and insomnia," a common experience among employees [9].

Theoretically, these results support the Job Demands-Resources (JD-R) model, indicating that high job demands, when not balanced by sufficient resources, significantly increase psychological burden. Interviews also highlighted that employees' self-regulation strategies, such as short breaks and task prioritization, could partially alleviate stress, but overall, digital work environments continue to exert sustained influence on mental health. These findings align with previous research suggesting that digital transformation, while improving efficiency, introduces new psychological burdens.

In summary, analyses of the descriptive and regression results demonstrate that employees exhibit moderately high stress levels, and that job demands and technostress in digital work environments are the primary drivers. These findings imply that enterprises should prioritize employee mental health during digital transformation by optimizing task allocation, providing technical support, and implementing psychological interventions to mitigate potential risks [10].

5. Discussion

This study systematically examined the mental health status of corporate employees and its main influencing factors in the context of digital work environments, integrating data from both questionnaires and interviews. Based on the empirical analyses presented earlier, the key findings and their theoretical and practical implications are discussed as follows.

First, employees' overall mental health reflects moderately high levels of stress. Descriptive statistics of perceived stress, anxiety, depressive tendencies, and mental fatigue indicate that employees generally experience a certain degree of psychological burden, particularly in terms of stress perception and mental fatigue. This phenomenon is closely related to corporate digital transformation. Interviews revealed that most employees reported heavy workloads, frequent task switching, and information overload from remote work and online collaboration as major sources of psychological burden. Evidently, employees face new challenges to mental health in digital work environments, consistent with previous research showing that the extensive use of digital tools and information technologies, while improving work efficiency, also increases cognitive and psychological demands on employees.

Second, job demands and technostress in digital work environments significantly impact mental health. Multiple regression analyses show that both job demands and technostress have positive and significant effects on perceived stress, anxiety, and mental fatigue, with the regression coefficients of job demands slightly higher than those of technostress. This indicates that task volume, urgency, and multitasking pressure are the core drivers of psychological burden. Interview data further confirmed this: employees commonly reported that handling multiple system tasks and participating in online meetings daily led to mental fatigue and heightened anxiety. Technostress manifests primarily as frequent notifications, the cognitive load of learning new software, and dependence on digital tools, increasing employees' mental fatigue. These findings align with the Job Demands-Resources (JD-R) model, which posits that high job demands, in the absence of adequate resources, significantly increase psychological burden. While digital tools enhance work efficiency, overreliance or poor management can also serve as sources of psychological stress.

Third, the study indicates that employees' self-regulation mechanisms play a role in alleviating stress, but their overall effectiveness is limited. Interviews revealed that some employees use short breaks, task prioritization, and social support to cope, which can partially reduce perceived stress and anxiety. However, due to the accelerated work pace and

high information load in digital environments, employees' psychological resources are often insufficient, resulting in prolonged mental fatigue and potential depressive tendencies. This underscores the need for organizations to develop mental health support systems during digital transformation, providing adequate resources and interventions to help employees manage the psychological burdens of digital work effectively.

Based on these findings, several managerial implications are proposed. First, organizations should optimize task design, allocating workloads and deadlines reasonably, and avoiding simultaneous multitasking that imposes excessive psychological stress. Second, digital tools should be managed scientifically, including reducing unnecessary notifications, optimizing software interfaces, and training employees in information management to mitigate technostress. Third, organizations can establish systematic mental health support mechanisms, such as regular psychological assessments, employee counseling, and stress management training, to enhance employees' self-regulation abilities and psychological resilience. Finally, organizations should integrate human-centered considerations into digital transformation strategies, incorporating employee mental health into strategic decision-making and performance management to balance efficiency and well-being.

6. Conclusion

In summary, this study, combining questionnaires and interviews, reveals the current status and main influencing factors of employees' mental health in digital work environments. The core findings are as follows: employees face moderately high psychological stress in digital work contexts, with job demands and technostress being the core drivers; while employees' self-regulation mechanisms can alleviate partial stress, their overall effectiveness is limited. Consequently, organizations should optimize task design, manage digital tools effectively, and establish comprehensive mental health support systems to safeguard employees' psychological well-being while promoting digital transformation.

This study enriches theoretical research on employee mental health in digital contexts and offers practical guidance for organizational management. The study also has certain limitations: the sample primarily included employees from specific industries and regions, which may limit the generalizability of the findings; the cross-sectional design of the questionnaire data restricts the ability to capture dynamic changes in mental health over time; although interviews provided qualitative insights, the limited sample size may not fully reflect individual differences.

Future research could employ larger samples and longitudinal tracking, integrating multi-source data (e.g., physiological indicators and work performance) to explore the dynamic mechanisms of mental health in digital work environments. Moreover, future studies could examine the interactions among different types of digital tools, usage frequency, and employees' self-regulation strategies to provide more targeted management recommendations for digital transformation.

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