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Geetanjali
Ph.D. Research Scholar, School of Commerce and Management, Career Point University, Kota, Rajasthan, India

Dr. Pratima Rawal
Associate Professor, School of Commerce and Management, Career Point University, Kota, Rajasthan, India

Corresponding Author:
Geetanjali
Ph.D. Research Scholar, School of Commerce and Management, Career Point University, Kota, Rajasthan, India

Digital integration and its influence on faculty work-life balance in Rajasthan's higher education sector

Geetanjali and Pratima Rawal

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Abstract
This study analyses how the integration of digital tools shapes the balance between professional and work life of the faculty belongs to higher education sector in Rajasthan. Faculty members face both opportunities and challenges as more rely on online platforms for teaching, administration and communication with universities and colleges. Digital equipment provides flexibility and innovation in teaching, but this also extends working hours, providing constant access between individual and professional life expectations.
This study based on 150 faculty members which is supported by questionnaires and interviews data collection techniques for research, after data analysis study explores technology related stress, change in responsibilities, flexibility and boundary management. Furthermore, this study finding suggests that although digital adoption helps in maintaining continuity functions related to education, it also increases stress - especially between the professional and personal.
To solve these challenges, the study recommends strong institutional support systems such as structured ICT training; clear policy related to workload and strong institutional support systems such as counseling, flexible planning and strong institutional support systems such as gender-sensitive practice. These measures can help institutions balance the benefits of digital integration with the educational personnel.

Keywords: Digital integration, Work-life balance, Higher education, Technostress

Introduction
The COVID-19 epidemic served as a catalyst for rapid use of digital technologies in higher education and forced institutions to integrate teaching management systems, video conference platforms and digital administrative equipment into their most important operations. This integration has defined teaching and learning processes by increasing efficiency, enabling interaction between real-time and expanding access to educational resources. Faculty members are now associated with students beyond traditional class boundaries, experimenting with innovative educational strategies and benefiting from well - organized education administration.
Although this development provides important opportunities, they also create remarkable challenges. Continuous dependence on digital platforms has extended working hours for the faculty, and has expanded the expectations of availability and staining the line between professional obligations and personal life. For many teachers, the level of increase in technology functions unbalanced their work and personal life but some of them feel relaxed and enjoy easy life with the usage of technologies which also help in maintaining work life balance. This study examine these problems especially underlined in Rajasthan, where institutions for higher education already face the faculty's shortcomings, uneven technical infrastructure and limited resources. Under such circumstances, there is a need to speed up digital workloads and pursue academic workers.
Keeping this development in a comprehensive context, insight from international scholarships highlights important comparative ideas. The study on technological development emphasizes both the potential and risk of digital changes in education, while research on disability policy and inclusive education outlines the need to ensure access and equity in digital learning environment. Together, these approaches strengthen the argument that when digital adoption is important for modern higher education, it should be with thoughtful policies, training and support systems that protect the faculty well and promote inclusive educational practice.

Literature Review

Digital integration in higher education

Post-pandemic higher education worldwide adopted learning management systems, video conferencing, and digital administrative platforms at unprecedented speed, reshaping pedagogical practice and academic workflows. Studies document gains in instructional continuity and efficiency alongside new demands associated with constant connectivity and digital coordination (Bao, 2020; Dhawan, 2020; Rapanta *et al*., 2020) [12, 10, 11]. Research on online teaching self-efficacy shows that shifts in modality require sustained institutional scaffolding, not only ad-hoc tools (Kabilan, 2022; Lee, 2022) [15, 14].

Technology related stress and its correlates

A foundational stream links intensified ICT use to technostress—stressors arising from techno-overload, complexity, insecurity, and invasiveness—which in turn elevates role stress and impairs productivity (Ayyagari *et al*., 2011; Tarafdar *et al*., 2007) [2, 1]. Higher-education studies during and after COVID-19 replicate these patterns among university teachers across settings, noting heightened strain when technology use is mandatory and time-urgent (Chou *et al*., 2021; Penado Abilleira *et al*., 2021; Wang, Q., Huang, & Li, 2023) [20, 6, 9]. Italian and broader European evidence further links technostress to well-being costs during remote work (Molino *et al*., 2020; Spagnoli *et al*., 2020) [5, 4], while more recent work nuances the picture by distinguishing "techno-eustress," where challenge appraisals can yield positive outcomes under supportive conditions (Nascimento *et al*., 2024) [23].

Boundary blurring, work-life balance, and satisfaction

Boundary theory suggests that continuous digital connectivity erodes temporal and spatial boundaries between work and home, weakening psychological detachment and recovery (Tarafdar *et al*., 2007; Rapanta *et al*., 2020) [1, 11]. Faculty-focused studies consistently associate heavy digital use with extended working hours, after-hours communication, and a drift toward "always-on" availability, which together depress work-life balance (WLB) and, indirectly, job satisfaction (Wang *et al*., 2019; Wang, Q., Huang, & Li, 2023) [9]. However, contextual moderators matter: some evidence from Indian settings suggests technostress does not uniformly predict job satisfaction when coping resources and organizational supports are strong (Varanasi *et al*., 2021; Cornell University, 2021).

Gender patterns and social support

Gender dynamics are salient in Indian higher education, where women often shoulder disproportionate domestic responsibilities alongside academic workloads. Empirical work shows that supervisor support, flexible systems, and human workload policies are positively associated with WLB and life satisfaction for female faculty (Jamunarani & Syed, 2024; Wani, 2023) [17]. During rapid digitalization, the absence of such supports can amplify techno-overload and strain, widening gender gaps in stress and recovery (Penado Abilleira *et al*., 2021; Spagnoli *et al*., 2020) [6].

Training, competence, and the "bright side" of digitalization

Faculty who perceives high digital competence experience less friction from platform complexity and report better adaptation to online/hybrid modalities (Lee, 2022; Kabilan, 2022) [15, 14]. Multi-group analyses point to the role of training and perceived usefulness in mitigating technostress creators and bolstering continuance intentions with technology (Chou *et al*., 2021) [20]. Systematic reviews argue that when challenge appraisals outweigh threat appraisals—often through training, autonomy, and supportive leadership—digitalization can enhance engagement and performance without eroding WLB (Nascimento *et al*., 2024; Yang *et al*., 2025) [23, 24].

Indian system factors: workload and staffing

System-level constraints shape how digital integration is experienced on the ground. Persistent faculty vacancies and unequal resource distribution increase individual workload, intensifying the strain associated with new digital tasks (Hindustan Times, 2023, 2024). Broader analyses of India's COVID-era higher education underscore that digital transition magnified existing structural issues—access, quality, and preparedness—thereby modulating staff stress and satisfaction (Dhawan, 2020; Jena, 2020) [10, 30].

Accessibility, disability policy, and inclusion

Inclusive digital environments are essential to equitable transformation. India's Rights of Persons with Disabilities Act, 2016 and evolving UGC accessibility standards require institutions to ensure platform and content accessibility, provide assistive technologies, and mainstream universal design (Government of India, 2016; Ministry of Education & UGC, 2023; UGC, 2024). The inclusion mandate has dual implications for faculty WLB: it raises design and compliance work but can reduce ad-hoc remediation, improve course quality, and align workloads through standardized supports (Rapanta *et al*., 2020) [11].

Synthesis and implications for Rajasthan

Across the literature, digital integration yields a dual effect: efficiency and instructional reach increase, but so do techno-overload, after-hours spillover, and boundary blurring that undermine WLB. These effects are most pronounced when adoption is rapid, resources are stretched, and expectations of constant availability prevail (Ayyagari *et al*., 2011; Tarafdar *et al*., 2007; Wang *et al*., 2019) [2, 1, 3]. In the Indian context—and especially in states with staffing shortages—organizational supports (training, workload norms, supervisor support, flexible scheduling) consistently buffer negative effects and are particularly consequential for women faculty (Jamunarani & Syed, 2024; Wani, 2023; Hindustan Times, 2023, 2024) [17, 16]. Parallel mandates on accessibility signal that sustainable digital transformation must pair technical rollout with capacity-building and inclusive design (Government of India, 2016; UGC, 2024).

Taken together, the literature points to a testable model for Rajasthan's higher-education sector: higher digital intensity → greater technostress and boundary blurring → lower WLB and satisfaction, with training, supervisor support, institutional policies, staffing levels, and accessibility infrastructure acting as moderators. This synthesis justifies examining gender, institution type, and age as key subgroup variables and motivates policy recommendations centered on capability building, boundary management norms, inclusive design, and staffing relief.

Research Gap

Literature review highlights widespread scholarships on the

impact of digital adoption in higher education, especially technologists, blurring boundaries and Working Life Balance (Tarfdar; Wang *et al*., 2019; Peno Abilara) [3]. However, most of the studies are either international in the state or focused in specific regions of India, such as references to karnataka and low -income schools (Varanasi *et al*., 2021; Cornel University, 2021). The Rajasthan region is a lack of specific empirical evidence, a state facing frequent faculty deficiency and infrastructure inequality (Hindustan Times, 2023, 2024). These unique systemic challenges can accelerate stress associated with digital integration, but remain unspecified.

Although the existing research is a common link document between digital tools and technology, some studies have checked that digital adoption affects the work, life's satisfaction and integrated way, especially when it comes to Indian higher education. The relationship between training, institutional support and WLB results is often mentioned, but rarely tested in a broad structure that stands for both individual and organizational factors.

In addition, although the role of gender patterns and supervisor support is recognized (Jamunani and Syed, 2024; Wani, 2023) [16], in Rajasthan, there is limited comparative analysis in gender, institute type and age groups. It is necessary to develop the mobility of relevant interventions, but there is a clear gap in literature.

Finally, while international scholarships emphasize access to quick institutional measures such as ICT training, redistribution of workload and compliance with buffer digital-inspired stress, Indian and Rajasthan-specific studies are rarely beyond the diagnosis to provide action-rich recommendations to suit higher education policy and practice.

Research gap lies in the absence of Rajasthan-specific, the faculty's well-being, lack of multidimensional performance analysis (work life satisfaction, stress), limited sub-composition comparison and insufficient policy-oriented recommendations. These gaps found after review of literature analysis and accordingly major four objectives draft to address the same.

Objectives of the study

1. To analyses the level of digital integration among faculty members in higher education institutions of Rajasthan.
2. To evaluate the impact of digital adoption on work closure, life satisfaction, and stress levels of faculty.
3. To explore variations in the effects of digital integration across gender, institution type, and age groups.
4. To recommend institutional measures that can effectively address and mitigate digital-induced stress among faculty.

Hypotheses

H_1: Higher levels of digital usage are positively correlated with increased technostress among faculty.

H_2: Faculty members who have received strong digital training report better work-life balance (WLB) compared to those with limited training.

H_3: Female faculty members experience higher levels of technostress than their male counterparts.

Research Methodology

Research Design

Quantitative and Qualitative both approaches are adopts in this study. These approaches provide a better understanding of relationship between digital integration and faculty work life balance for capturing the correct results.

Data Collection Instruments

For Quantitative approach, Structured Questionnaire designed on linkert scale with 5 points used for data collection. This questionnaire consists of four major factors: faculty work life balance, job satisfaction, digital usage, technostress. This questionnaire distributed to the faculty members of higher education in Rajasthan for data collection.

In order to complement the findings from the study, half - composed interviews were held with faculty members representing the different genders, age groups and institutions. These interviews provided good insight into the faculty's living experiences, especially about stress, workload and combating strategies in integrated work environment.

Sample Size

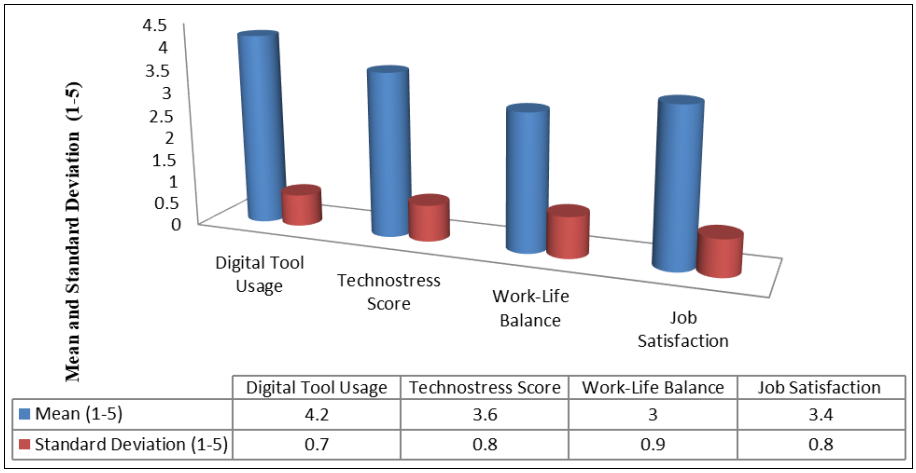
Total 150 Faculty members surveyed from private high education institutions

Sample Size	Men	Female
150	80	70

Results

Variable	Mean	SD	Male Mean	Female Mean
Digital Tool Usage (1-5)	4.2	0.7	4.1	4.3
Technostress Score (1-5)	3.6	0.8	3.4	3.9
Work-Life Balance (1-5)	3.0	0.9	3.2	2.8

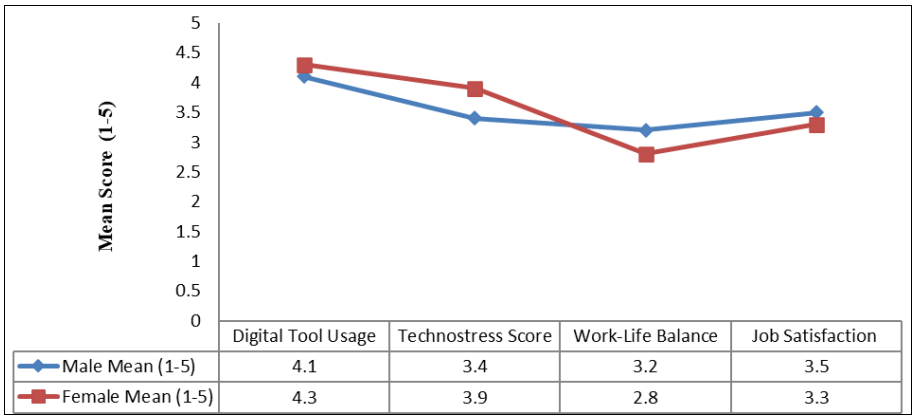
Graphical presentation of results with interpretations



	Digital Tool Usage	Technostress Score	Work-Life Balance	Job Satisfaction
Mean (1-5)	4.2	3.6	3	3.4
Standard Deviation (1-5)	0.7	0.8	0.9	0.8

Fig 1: Mean Scores with Standard Deviations

Interpretation: The average score for the use of digital tools (M = 4.2, SD = 0.7) indicates that respondents often use digital tools. The technostress point is moderately high (M = 3.6, SD = 0.8), which suggests that the increase in digital usage is associated with the level of noticeable stress. The balance between work and life is relatively low (M = 3.0, SD = 0.9), reflects challenges in maintaining boundaries between work and personal life. Meanwhile, job satisfaction shows a medium level (M = 3.4, SD = 0.8), which means that even if employees are somewhat satisfied, stress and imbalance in working life can affect general satisfaction.



	Digital Tool Usage	Technostress Score	Work-Life Balance	Job Satisfaction
Male Mean (1-5)	4.1	3.4	3.2	3.5
Female Mean (1-5)	4.3	3.9	2.8	3.3

Fig 2: Male Vs Female mean Comparison

Interpretation

The results suggest that women (M = 4.3) reported a slightly more digital tool use than men (M = 4.1). However, women also experienced a high technostress point (M = 3.9) compared to men (m = 3.4), suggesting more stress than digital usage. When it comes to creating a balance between work and life, men scored high (M = 3.2) than women (M = 2.8), indicating that women face balanced professional and more challenges in personal life. For job satisfaction, men reported a higher medium (M = 3.5) compared to women (M = 3.3), indicating relatively greater satisfaction among male employees.

Findings

1. Digital Integration Level

- The average score for the use of digital tools (M = 4.2, SD = 0.7) indicates that faculty members often use digital platforms in teaching and administrative work.
- This confirms that digital integration is high among the faculty members of the institutions of higher education in Rajasthan.

2. Impact on Technostress, Work-Life Balance, and Job Satisfaction

- The average technology level was moderately high (M = 3.6, SD = 0.8), indicating that high digital adoption is associated with stress.
- Work life balance (M = 3.0, SD= 0.9) was low, indicating difficulty in distinguishing professional and personal life.
- Job satisfaction (M = 3.4, SD = 0.8) was moderate, suggesting that technostress and imbalance affect normal satisfaction.

3. Variations Based on Gender

- Female faculty members reported a little more digital tool use (M = 4.3) than men (M = 4.1).
- However, women experienced more technostress (M = 3.9 against 3.4), low work balance (M = 2.8 against 3.2), and slightly less job satisfaction (M = 3.3 against 3.5).
- This suggests that the female faculty face more challenges due to digital integration stress in maintaining balance between and professional and personal life.

4. Testing of Hypotheses - Accepted or Rejected

H_1: Higher levels of digital usage are positively correlated with increased technostress among faculty.

Accepted: The results suggest that high digital use (M = 4.2) is associated with moderately high technical stress (M = 3.6).

H_2: Faculty members who have received strong digital training report better work-life balance (WLB) compared to those with limited training.

Accepted (partially supported): Findings suggest that WLB of faculty members can improve after providing them proper digital training, although the WLB point is low in total, which shows the extent of further institutional intervention.

H_3: Female faculty members experience higher levels of technostress than their male counterparts.

Accepted: Results shows that the women reported high technostress (M = 3.9) compared to men (M = 3.4), which validates the gender -based difference in stress level.

Recommendations

1. Strengthen digital training programs

- Develop structured ICT training modules that focus on both technical and educational use of digital platforms.
- Provide continuous refreshments and workshops on hands to reduce technology and improve the balance between work and life.
- Encourage colleagues in departments and digital masters.

2. Political measures for charging and digital use

- Prepare a clear institutional policy for distribution of workloads to prevent digital additional fees.
- Install limits for hours of communication (for example, no compulsory online response outside working hours).
- Encourage balanced use of digital platforms, mix offline and digital methods to reduce the faculty's pressure.

3. Consultation and welfare assistance

- Introduce consultation and stress management services to address technical stress.
- Conduct regular welfare programs including mindfulness and time management training.
- Create a safe place for the faculty to share challenges related to digital adoption.

4. Gender -sensitive practice

- Provide flexible planning, hybrid work options and family support policy to reduce the imbalance in the working life of the faculty.
- Provide digital training and advice on women to address your highly reported technology.
- Monitor and reduce stress intervals between male and female faculties.

5. Institutional support systems

- Strengthen the IT support infrastructure to solve technical problems immediately.
- User dysfunction platform and reduces the dependence on multiple and fragmented digital tools.
- Collect regular feedback to limit digital integration guidelines.

6. Monitoring and evaluation

- Evaluate the technical strain with life balance, job satisfaction and the effect of digital adoption in time.
- Use gender disaggregated data to track progress and ensure valid results.
- For maintaining the stress level and adjust institutional strategies as per digital trends.

Future Scope of the Study

- In order to compare faculty experiences in Indian states and global contexts, a comprehensive demographic analysis can be done by expanding beyond Rajasthan.
- Longitudinal studies can help in examining how technologies and work life balance change over time to time by increasing digital tools usage competencies and adoption of use new digital tools such as Artificial Intelligence enabled platforms.
- In order to understand the gender perspectives, study also focused on gender based variations in aspect of digital integration and work life balance relations but the researchers have scope to study further about the digital integration impact on considering sociological expectations, domestic responsibilities and institutional support intervals.
- Institutional policy role can be studied by assessing the effectiveness of interventions such as flexible working hours, digital integration periods and welfare initiatives.
- Regional comparison between public and private institutions can show how resources, infrastructure and organizational culture affect technostress and job satisfaction.
- Technology specific effects should be investigated whether learning management system, video conferences or administrative platforms contribute more to stress or efficiency.
- Integration of psychological variables such as flexibility, combat strategies and digital self -efficiency can provide deep insight into digital needs.

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