INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 15, Issue 10, (2025) E-ISSN: 2222-6990

Unplug to Recharge: The Mediating Role of Work Engagement in Digital Well-Being among ODDE Academicians

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DOI Link: http://dx.doi.org/10.6007/IJARBSS/v15-i10/26568

Published Date: 18 October 2025

Abstract

This study investigates the critical yet underexplored issue of academicians' digital well-being within Open, Distance, and Digital Education (ODDE) higher institutions. Anchored in the integrated Job Demands-Resources (JD-R) theory and Technology Acceptance Model (TAM), it examines how perceived usefulness, self-efficacy, and social support influence digital well-being, with work engagement as a mediator. Data were collected via an online survey distributed to academic staff using purposive sampling. From 497 questionnaires distributed, 377 clean responses were obtained and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. Results revealed that work engagement is the strongest direct predictor of digital well-being. While perceived usefulness significantly increased work engagement, it had no direct effect on well-being. Both self-efficacy and social support exhibited significant direct effects on the outcome. Work engagement also mediated all indirect relationships effectively. The findings underscore that digital well-being is less about the perceived utility of technology itself and more about the psychological and organizational resources that foster engaged and resilient academicians. The study provides ODDE institutions with actionable insights, emphasizing the need to implement competency development, strengthen support systems, and prioritize engagement initiatives to sustainably enhance digital wellness. Future research should adopt longitudinal designs to

observe these relationships over time and explore additional contextual factors influencing well-being in digital academic environments.
Keywords: Perceived Usefulness, Self-Efficacy, Social Support, Work Engagement, Digital Well-Being

Introduction

Academicians' digital well-being is a critical yet often overlooked pillar of a sustainable and high-quality Open, Distance, and Digital Education (ODDE) ecosystem (Bahar et al., 2024; Hayama & Desai, 2025). It refers to their state of physical, mental, and emotional health resulting from a balanced and controlled relationship with the digital technologies that mediate their work (Filep et al., 2024; Mazumdar, 2025). Its importance cannot be overstated; when academicians thrive digitally, they are better equipped to design engaging courses, provide meaningful student support, conduct innovative research, and contribute positively to their institution's mission (Mohanty et al., 2025). Conversely, poor digital well-being directly corrodes teaching quality, stifles innovation, and leads to burnout and attrition, jeopardizing the entire ODDE enterprise (Islambouli et al., 2024). Globally, current issues and trends reveal a workforce under significant digital strain. The pervasive issue is technostress, exacerbated by the "always-on" culture, the pressure to continuously adapt to new platforms, and the blurring of work-life boundaries (Maskun et al., 2025; Meng et al., 2025). This is coupled with digital overload from incessant notifications, overwhelming online communication, and the immense workload of creating and curating digital content (Ceccarini et al., 2024). A rising trend is the sense of professional isolation and digital fatigue, as screen-mediated interaction replaces the organic collegiality of a physical campus, diminishing job satisfaction and a sense of belonging (Weber et al., 2025). Critical research gaps persist. While student digital well-being is studied (Bahar et al., 2024), the focus on academicians is nascent. There is a lack of large-scale, cross-cultural studies identifying the most salient ODDE-specific demands and resources. Furthermore, research is needed to understand the protective mechanisms and institutional policies that most effectively mitigate digital burnout and promote sustainable digital engagement (Filep et al., 2024; Mohanty et al., 2025). The core problem is that the very technologies designed to enable flexible education have become a significant source of chronic stress and disengagement for academicians (Mazumdar, 2025). Without structured support, the ODDE environment risks normalizing these negative experiences, leading to a decline in both individual health and institutional performance (Islambouli et al., 2024). The significance of addressing this is profound. For policymakers, it provides evidence to craft supportive digital labour policies for the higher education sector (Weber et al., 2025). For ODDE institutions, insights are crucial for investing in the right support systems, such as digital literacy training, IT support, and well-being programmes, to foster a healthy digital workforce (Mohanty et al., 2025). For academicians, this research validates their challenges and advocates for a healthier digital work culture (Hayama & Desai, 2025). For students, it is an indirect investment in their success, as their learning experience is profoundly enhanced by interacting with digitally well, motivated, and effective educators (Meng et al., 2025). This study aims to assess the influence of perceived usefulness, self-efficacy, and social support on digital well-being, with work engagement as a mediator among academicians in open, distance, and digital education higher institutions.

Literature Review

Underpinning Theory

The Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2017) provides a robust framework for understanding occupational well-being by categorizing work characteristics into demands and resources. Job demands (e.g., technostress) require sustained effort and can lead to exhaustion, impairing digital well-being. Conversely, job resources (e.g., social support) facilitate goal achievement, stimulate growth, and enhance motivation. The Technology Acceptance Model (TAM) (Davis, 1989) complements this by explaining how technology perceptions influence its adoption. A key resource, Perceived Usefulness, is central to TAM, positing that users embrace technology if they believe it enhances their performance. In the integrated model, JD-R's demands are represented by Technostress, which directly and negatively impacts Digital Well-being. JD-R and TAM's resource aspects are captured by Perceived Usefulness (a technological resource) and Social Support (a psychosocial resource), which are hypothesized to positively influence well-being. Crucially, Work Engagement (Schaufeli et al., 2006), a positive work-related state from JD-R, acts as the mediating mechanism. This mediation is core to JD-R's motivational process, wherein resources foster a motivational state that leads to positive outcomes. Resources boost engagement, which then fosters well-being, while demands deplete engagement, thereby diminishing it. This synthesis explains not only which factors matter but also how they mechanistically influence academicians' digital well-being by illustrating the psychological pathway through which technology-related perceptions and social environments ultimately impact their holistic digital wellness.

Relationship between Perceived Usefulness, Work Engagement & Digital Well-being

The relationship between Perceived Usefulness and digital well-being among academicians is positively mediated by the critical psychological state of Work Engagement (Kahpi et al., 2024). When academicians perceive their digital tools as useful, believing these technologies enhance their effectiveness in teaching, research, and administration (Rezai et al., 2024), this perception functions as a key resource (Mohamad & Osman, 2025). This resource fuels a motivational process whereby valuable tools reduce the psychological costs of job demands and stimulate a positive, fulfilling state of work-related well-being (Pothuganti et al., 2025). Specifically, perceiving technology as useful boosts Work Engagement, characterized by high levels of vigor, dedication, and absorption in one's work (Chaudhry et al., 2024). An engaged academician is more energetic, enthusiastic, and immersed in their digitally-mediated tasks (Dong et al., 2025). It is this heightened engagement that serves as the essential mechanism, translating the utility of a digital tool into enhanced digital well-being (Kahpi et al., 2024; Osman et al., 2025). Consequently, the positive effect of perceiving technology as useful on well-being is not merely direct; it is significantly channeled through the mediator (Pothuganti et al., 2025). An academician who finds technology useful becomes more engaged in their work, and this profound sense of engagement is what ultimately cultivates a sustainable and positive state of digital well-being (Dong et al., 2025; Rezai et al., 2024). *Therefore, the following hypotheses were proposed for this study:*

H1: There is a relationship between perceived usefulness and digital well-being among academicians in open, distance, and digital education higher institutions.

H2: There is a relationship between perceived usefulness and work engagement towards digital well-being among academicians in open, distance, and digital

education higher institutions.

H3: There is a mediating effect of work engagement on the relationship between perceived usefulness and digital well-being among academicians in open, distance, and digital education higher institutions.

Relationship between Self-Efficacy, Work Engagement & Digital Well-being

The relationship between Self-Efficacy and digital well-being among academicians is significantly enhanced through the mediating role of Work Engagement (Hameli et al., 2025; Ilin, 2025). When academicians possess strong beliefs in their capability to effectively use digital tools and navigate technological challenges (Yang & Du, 2024), this personal resource directly contributes to their psychological resilience and reduces digital anxiety (Arbulú Pérez Vargas et al., 2024). This confidence functions as a critical motivational driver that fuels their work engagement, characterized by heightened vigor, dedication, and absorption in their professional activities (Aminuddin et al., 2025). As academicians experience greater confidence in their digital competencies, they become more energetically and enthusiastically immersed in their technology-mediated tasks (Ilin, 2025; Osman et al., 2025), which transforms their relationship with digital tools from potential stressors to empowering resources (Yang & Du, 2024). This elevated engagement serves as the crucial mechanism through which digital self-efficacy translates into improved digital well-being (Hameli et al., 2025). The mediated pathway demonstrates that self-efficacy does not merely influence well-being directly, but operates substantially through fostering a state of profound work engagement (Arbulú Pérez Vargas et al., 2024). Consequently, academicians with strong digital self-efficacy develop greater engagement with their work (Aminuddin et al., 2025), and this enhanced psychological connection to their professional role ultimately cultivates a more sustainable and positive state of digital well-being, characterized by control, satisfaction, and minimal stress in their technology-enabled academic environment (Yang & Du, 2024; Ilin, 2025). *Hence, the following hypotheses were proposed for this study:*

H4: There is a relationship between self-efficacy and digital well-being among academicians in open, distance, and digital education higher institutions.

H5: There is a relationship between self-efficacy and work engagement towards digital well-being among academicians in open, distance, and digital education higher institutions.

H6: There is a mediating effect of work engagement on the relationship between self-efficacy and digital well-being among academicians in open, distance, and digital education higher institutions.

Relationship between Social Support, Work Engagement & Digital Well-being

The relationship between Social Support and digital well-being among academicians is fundamentally strengthened through the mediating influence of Work Engagement (Kozhakhmet et al., 2025; Nuutinen & Bordi, 2025). When academicians receive robust support from colleagues, institutional leadership, and technical staff (Aris & Othman, 2024), this collective resource provides essential psychological and practical buffers against digital stressors (Ruihua et al., 2025). Such support enhances their sense of belonging, reduces feelings of professional isolation, and fosters confidence in navigating technological challenges (Tang & Zhu, 2024). This supportive environment directly fuels Work Engagement by generating greater levels of vigor, dedication, and absorption in their professional roles

(Kozhakhmet et al., 2025). As academicians feel more supported, they engage more deeply and enthusiastically with their technology-mediated tasks (Nuutinen & Bordi, 2025), transforming potential digital obstacles into manageable challenges (Aris & Othman, 2024). This heightened engagement serves as the critical mechanism through which social support translates into enhanced digital well-being (Ruihua et al., 2025; Osman et al., 2025). The relationship demonstrates that support systems do not merely improve well-being directly but operate significantly by cultivating a state of profound professional connection and motivation (Tang & Zhu, 2024). Consequently, well-supported academicians experience stronger work engagement (Kozhakhmet et al., 2025), and this energized psychological state ultimately fosters a sustainable and positive digital well-being, characterized by greater control, satisfaction, and resilience within their technology-enabled academic environment (Nuutinen & Bordi, 2025; Ruihua et al., 2025). *Thus, the following hypotheses were proposed for this study:*

H7: There is a relationship between social support and digital well-being among academicians in open, distance, and digital education higher institutions.

H8: There is a relationship between social support and work engagement towards digital well-being among academicians in open, distance, and digital education higher institutions.

H9: There is a relationship between work engagement and digital well-being among academicians in open, distance, and digital education higher institutions.

H10: There is a mediating effect of work engagement on the relationship between social support and digital well-being among academicians in open, distance, and digital education higher institutions.

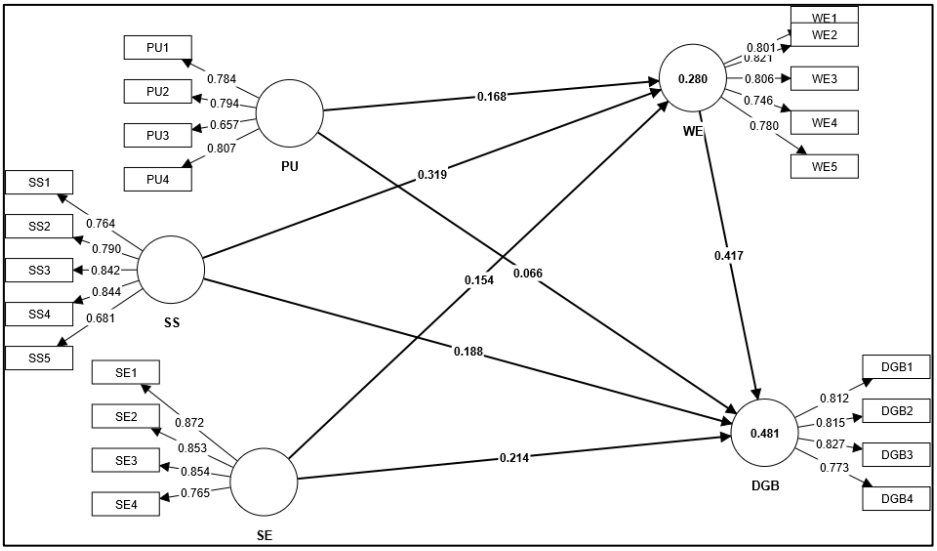

Figure 1: Research Model

Notes: PU=Perceived Usefulness SS=Social Support SE=Self-Efficacy WE=Work Engagement DGB=Digital Well-Being

Methodology

This study investigated the direct relationships between perceived usefulness, self-efficacy, social support, and digital well-being, with work engagement serving as a mediator among academic staff in open, distance, and digital education institutions. Data were collected using

survey questionnaires developed to measure these constructs, with items adapted from established scales to ensure reliability. In the absence of a complete sampling frame, a purposive sampling technique was employed, and surveys were distributed electronically via email. The analysis incorporated 22 observed variables: perceived usefulness (4 items, Davis, 1989), self-efficacy (4 items, Compeau & Higgins, 1995), social support (5 items, Karasek et al., 1998), work engagement (5 items, Schaufeli et al., 2006), and digital well-being (4 items, Büchi et al., 2022). All constructs were measured using a 5-point Likert scale ranging from strongly disagree to strongly agree. From 497 distributed questionnaires, 391 responses were received, resulting in a 78.7% response rate, considered adequate for structural equation modeling (SEM). After excluding incomplete submissions, 377 responses were retained for analysis. Data were analyzed using SmartPLS 4 (Ringle et al., 2022), which enabled a thorough assessment of both the measurement and structural models, supporting robust hypothesis testing within a multivariate framework.

Data Analysis

Respondents' Profiles

This analysis of the respondent demographic profile for the 377 participating academicians reveals a predominantly male sample (225 individuals, 59.7%) compared to female respondents (152, 40.3%), with the age distribution heavily skewed toward mid-career professionals, as the largest group was aged 41-50 years old (154, 40.8%), followed by those aged 31-40 (86, 22.8%) and 51-60 (77, 20.4%), while younger (<30 years, 28, 7.4%) and older (>60 years, 32, 8.5%) respondents were less represented. This experience is further reflected in the years of service, where the majority of respondents had substantial experience, with the largest segments having 11-15 years (115, 30.5%) and 16-20 years (110, 29.2%) of service, while those with fewer than 5 years (21, 5.6%) or more than 30 years (18, 4.8%) were minorities. In terms of academic position, the sample was overwhelmingly composed of Senior Lecturers (291, 77.2%), followed by Associate Professors (73, 19.4%), with Professors (9, 2.4%) and Lecturers (4, 1.1%) constituting only a very small fraction, indicating that the findings are most representative of mid-level to senior-level faculty perspectives.

Common Method Bias

Based on the full collinearity variance inflation factor (VIF) values presented in Table 1, the data demonstrate no significant evidence of common method bias (CMB), as recommended by Kock (2015) and Kock & Lynn (2012). All calculated VIF values are substantially below the conservative threshold of 3.3, with the highest value being 1.888 for Digital Well-Being (DGB) when regressed on other constructs. The values for Perceived Usefulness (PU), Social Support (SS), Self-Efficacy (SE), and Work Engagement (WE) similarly remain low, ranging from 1.285 to 1.824. Since none of the VIFs exceed the recommended limit, it can be concluded that common method variance does not pose a significant threat to the validity of the study's findings. This supports the robustness of the measured constructs and the structural model tested.

Table 1
Full Collinearity (VIF)

	DGB	PU	SS	SE	WE
DGB		1.888	1.351	1.782	1.527
PU	1.692		1.669	1.667	1.688
SS	1.798	1.488		1.824	1.801
SE	1.285	1.341	1.351		1.369
WE	1.376	1.698	1.669	1.713	

Construct Reliability & Validity and Item Loadings

Based on the results presented in Table 2, the measurement model demonstrates strong evidence of construct reliability and convergent validity, in accordance with the criteria established by Hair et al. (2019). All constructs exhibit good internal consistency, as indicated by Cronbach's Alpha (CA) and Composite Reliability (CR) values exceeding the recommended threshold of 0.7. Specifically, Cronbach's Alpha values range from 0.757 (Perceived Usefulness) to 0.857 (Self-Efficacy), while Composite Reliability values range from 0.761 (Perceived Usefulness) to 0.866 (Social Support), confirming that all scales are reliable. Furthermore, convergent validity is well-supported, as the Average Variance Extracted (AVE) for each construct exceeds the minimum requirement of 0.5, with values ranging from 0.582 (Perceived Usefulness) to 0.701 (Self-Efficacy). This indicates that the constructs explain more than half of the variance in their respective indicators on average. Additionally, all item loadings are above the acceptable level of 0.6, with the majority exceeding 0.7, further reinforcing the strength and unidimensionality of the constructs. The lowest loading observed is 0.657 for item PU3 (Perceived Usefulness), which remains acceptable, while all other loadings are well above this value. In summary, the results confirm that the measurement model is both reliable and valid, providing a solid foundation for evaluating the structural relationships in the study. The Heterotrait-Monotrait (HTMT) ratios, as presented in Table 3, all fall well below the conservative threshold of 0.85, as recommended by Henseler et al. (2015). This provides strong evidence of discriminant validity, confirming that each construct in the model is distinct and empirically unrelated.

Table 2
Construct Reliability & Validity and Item Loadings

Constructs	Items	Loadings	CA	CR	AVE
Digital Well-Being	DGB1	0.812	0.822	0.826	0.651
	DGB2	0.815			
	DGB3	0.827			
	DGB4	0.773			
Perceived Usefulness	PU1	0.784	0.757	0.761	0.582
	PU2	0.794			
	PU3	0.657			
	PU4	0.807			
Self-Efficacy	SE1	0.872	0.857	0.860	0.701
	SE2	0.853			
	SE3	0.854			
	SE4	0.765			
	SS1	0.764			

Social Support	SS2	0.790	0.846	0.866	0.619
	SS3	0.842			
	SS4	0.844			
	SS5	0.681			
Work Engagement	WE1	0.801	0.851	0.853	0.626
	WE2	0.821			
	WE3	0.806			
	WE4	0.746			
	WE5	0.780			

Notes: CA=Cronbach Alpha CR=Composite Reliability AVE=Average Variance Extracted

Table 3
Heterotrait-Monotrait (HTMT) Ratios

	DGB	PU	SE	SS
PU	0.556			
SE	0.548	0.488		
SS	0.602	0.764	0.470	
WE	0.726	0.527	0.410	0.561

Hypothesis Testing Results

Employing the methodological framework established by Hair et al. (2017), this study evaluated the structural model through a simultaneous assessment of pathway coefficients (β) and R-squared (R^2) values. The analysis utilized the Partial Least Squares (PLS) approach, applying a bootstrap resampling procedure with 5,000 iterations to determine the statistical significance of the path coefficients. As comprehensively summarized in Table 4, the hypothesis testing outcomes, including beta values, t-statistics, p-values, and corresponding confidence intervals, provide robust evidence regarding the magnitude, direction, and statistical reliability of the proposed relationships. This rigorous analytical process not only confirms the substantive connections between constructs but also underscores the overall validity and explanatory power of the research model. The hypothesis testing results demonstrate a clear pattern of relationships: *H1* (PU -> DGB) was rejected due to statistical insignificance (β = 0.066, t = 1.132, p = 0.258, CI: -0.049 to 0.181), indicating no direct effect of Perceived Usefulness on Digital Well-Being, whereas *H2* (PU -> WE) was accepted with a significant positive effect (β = 0.168, t = 2.927, p = 0.003, CI: 0.050 to 0.273), confirming Perceived Usefulness enhances Work Engagement, and *H3* (PU -> WE -> DGB) was accepted, showing a significant indirect effect (β = 0.070, t = 2.648, p = 0.008, CI: 0.020 to 0.124), establishing Work Engagement as a full mediator. *H4* (SE -> DGB) was accepted with a strong direct effect (β = 0.214, t = 4.097, p < 0.001, CI: 0.108 to 0.313), demonstrating Self-Efficacy directly enhances Digital Well-Being, and *H5* (SE -> WE) was accepted (β = 0.154, t = 2.941, p = 0.003, CI: 0.046 to 0.254), confirming it boosts Work Engagement, leading to the accepted mediation in *H6* (SE -> WE -> DGB; β = 0.064, t = 2.754, p = 0.006, CI: 0.021 to 0.113). *H7* (SS -> DGB) was accepted (β = 0.188, t = 3.617, p < 0.001, CI: 0.085 to 0.288), confirming Social Support's direct positive effect on Digital Well-Being, and *H8* (SS -> WE) was accepted with the strongest effect on the mediator (β = 0.319, t = 5.403, p < 0.001, CI: 0.198 to 0.430), establishing Social Support as a key driver of Work Engagement. *H9* (WE -> DGB) was accepted with the model's strongest direct effect (β = 0.417, t = 8.346, p < 0.001, CI: 0.315 to 0.510), solidifying Work Engagement as the paramount predictor of Digital Well-Being, and *H10* (SS -

> WE -> DGB) was accepted (β = 0.133, t = 4.514, p < 0.001, CI: 0.080 to 0.194), demonstrating Work Engagement's partial mediation between Social Support and Digital Well-Being. All accepted hypotheses were validated by p-values < 0.05 and confidence intervals excluding zero.

Table 4
Hypothesis Testing Results

Hypotheses	Beta	T-statistics	P-values	2.50%	97.50%	Decision
H1: PU -> DGB	0.066	1.132	0.258	-0.049	0.181	*Rejected*
H2: PU -> WE	0.168	2.927	0.003	0.050	0.273	*Accepted*
H3: PU -> WE -> DGB	0.070	2.648	0.008	0.020	0.124	*Accepted*
H4: SE -> DGB	0.214	4.097	0.000	0.108	0.313	*Accepted*
H5: SE -> WE	0.154	2.941	0.003	0.046	0.254	*Accepted*
H6: SE -> WE -> DGB	0.064	2.754	0.006	0.021	0.113	*Accepted*
H7: SS -> DGB	0.188	3.617	0.000	0.085	0.288	*Accepted*
H8: SS -> WE	0.319	5.403	0.000	0.198	0.430	*Accepted*
H9: WE -> DGB	0.417	8.346	0.000	0.315	0.510	*Accepted*
H10: SS -> WE -> DGB	0.133	4.514	0.000	0.080	0.194	*Accepted*

Note: Significance <0.05

Effect Sizes (f^2)

The effect sizes (f^2) presented in Table 5, interpreted using Cohen's (1992) guidelines, reveal varying magnitudes of influence among the constructs. Perceived Usefulness (PU) demonstrates negligible effects on both Digital Well-Being (DGB, $f^2 = 0.005$) and Work Engagement (WE, $f^2 = 0.023$). Self-Efficacy (SE) shows small effects on DGB ($f^2 = 0.069$) and WE ($f^2 = 0.026$). Social Support (SS) exerts a small effect on DGB ($f^2 = 0.037$) and a medium effect on WE ($f^2 = 0.083$). Most notably, Work Engagement (WE) has a large effect on Digital Well-Being ($f^2 = 0.241$), underscoring its substantial predictive power in the model.

Table 5
Effect Sizes (f^2)

	DGB	WE
PU	0.005	0.023
SE	0.069	0.026
SS	0.037	0.083
WE	0.241	

PLSpredicts

Following the PLSpredict procedure recommended by Shmueli et al. (2016, 2019), the predictive power of the model was assessed. The analysis reveals that all PLS-RMSE values are lower than their corresponding LM-RMSE benchmarks, as all values in the "PLS-LM" column are negative. Specifically, all nine out of nine PLS-RMSE values are smaller than the LM-RMSE values, demonstrating the model's superior predictive performance. This consistent result across all indicators (DGB1-4, WE1-5) provides strong evidence that the PLS model possesses high predictive relevance and out-of-sample applicability, confirming its robustness for explaining the endogenous constructs.

Table 6
PLSpredicts

	Q^2predict	PLS-RMSE	LM-RMSE	PLS-LM
DGB1	0.293	0.636	0.637	-0.001
DGB2	0.226	0.620	0.628	-0.008
DGB3	0.225	0.684	0.697	-0.013
DGB4	0.127	0.738	0.745	-0.007
WE1	0.205	0.624	0.630	-0.006
WE2	0.167	0.628	0.640	-0.012
WE3	0.138	0.674	0.680	-0.006
WE4	0.140	0.686	0.701	-0.015
WE5	0.166	0.624	0.635	-0.011

Cross-Validated Predictive Ability Test (CVPAT)

The Cross-Validated Predictive Ability Test (CVPAT) results, following the guidelines of Hair et al. (2022) and Liengaard et al. (2021), confirm the model's strong out-of-sample predictive power. For both Digital Well-Being (DGB) and Work Engagement (WE), the average loss differences are negative (-0.124 and -0.081, respectively) and statistically significant ($p < 0.001$), with t-values well above the critical threshold (5.576 and 4.474). The overall result (-0.100, $t = 6.005$, $p = 0.000$) definitively indicates that the PLS-SEM model significantly outperforms the linear benchmark model, establishing its superior predictive accuracy.

Table 7
Cross-Validated Predictive Ability Test (CVPAT)

	Average loss difference	t-value	p-value
DGB	-0.124	5.576	0.000
WE	-0.081	4.474	0.000
Overall	-0.100	6.005	0.000

Importance-Performance Map Analysis (IPMA)

The Importance-Performance Map Analysis (IPMA) (Table 8), following the guidelines of Ringle and Sarstedt (2016) and Hair et al. (2018), reveals critical insights for enhancing academicians' digital well-being. Work Engagement (WE) is the most important construct (0.417) in driving Digital Well-Being but exhibits the lowest performance (60.629), indicating a significant opportunity for improvement. In contrast, Perceived Usefulness (PU) shows the lowest importance (0.136) and moderate performance (66.690), suggesting it is less influential in the model. Social Support (SS) and Self-Efficacy (SE) demonstrate relatively high importance (0.320 and 0.278, respectively) and moderate performance levels (66.521 and 66.939). To improve Work Engagement, the construct with the highest importance but lowest performance, ODDE institutions should prioritize targeted interventions. Strategies may include implementing structured digital wellness programs to reduce burnout, fostering a supportive institutional culture that recognizes and rewards digital efforts, providing resources for skill development to enhance confidence in digital teaching environments, and promoting autonomy and meaningful tasks to increase intrinsic motivation. By focusing on these areas, institutions can leverage WE's high importance to achieve a substantially greater impact on academicians' digital well-being, ensuring sustainable engagement and effectiveness in digital education contexts.

Table 8
Importance-Performance Map Analysis (IPMA)

	Importance	Performance
PU	0.136	66.690
SE	0.278	66.939
SS	0.320	66.521
WE	0.417	60.629

Discussion & Conclusion

Discussion

Based on the empirical findings of this study, open, distance, and digital education (ODDE) higher institutions must adopt a comprehensive and multi-faceted strategy to enhance academicians' digital well-being by strategically leveraging the significant mediating role of work engagement, which demonstrated the strongest direct effect on digital well-being (β = 0.417). This indicates that interventions targeting engagement will yield the most substantial improvements in overall well-being. To achieve this, institutions should prioritize competency-building interventions that enhance self-efficacy, which showed notable direct impacts on both work engagement (β = 0.154) and digital well-being (β = 0.214). This can be implemented through structured continuous professional development programs specifically designed to enhance digital pedagogies, including hands-on training for advanced educational technology tools, pedagogical workshops for effective online course design and delivery, and certification courses in digital instruction methodologies (Mohanty et al., 2025). These initiatives should be complemented by just-in-time support systems that provide immediate assistance when academicians encounter technological challenges (Hayama & Desai, 2025). Concurrently, institutions must establish robust, supportive organizational frameworks that amplify social support, which evidenced the strongest direct effect on work engagement (β = 0.319) alongside a significant direct effect on digital well-being (β = 0.188). Practical implementations should include creating formal and informal mentoring networks where technologically proficient academicians can guide their colleagues, forming digital teaching communities of practice to encourage resource sharing, collaborative problem-solving, and emotional support, and ensuring responsive, multi-channel IT support services to reduce frustration and prevent technostress (Kahpi et al., 2024). Furthermore, although perceived usefulness did not directly influence digital well-being (β = 0.066), it significantly boosted work engagement (β = 0.168), which subsequently enhanced well-being through mediation. Therefore, institutions should systematically demonstrate the value and utility of digital tools through evidence-based showcases of successful implementations, clear documentation of how specific tools reduce administrative workload through automation, and incentive structures that reward innovative digital teaching practices that save time or improve educational outcomes (Rezai et al., 2024). The absence of a direct relationship between perceived usefulness and digital well-being may be attributed to the complex nature of digital tools in academic environments, where even tools recognized as useful for task performance may simultaneously contribute to cognitive overload, constant connectivity expectations, and extended working hours, thereby counterbalancing potential well-being benefits. This suggests that perceived usefulness alone is insufficient if digital tools are not intentionally designed and implemented with well-being principles integrated into their adoption and use. Therefore, institutional strategies must not only promote tool utility but also advocate for and implement well-being by design principles, incorporating features that encourage digital

detachment, streamline complex workflows, minimize cognitive load, and respect boundaries between professional and personal time (Hameli et al., 2025). By systematically strengthening self-efficacy through targeted training, enhancing social support through collaborative structures, and demonstrating the strategic value of digital tools while simultaneously addressing their unintended burdens, ODDE institutions can foster a more engaged, resilient, and digitally healthy academic workforce. This holistic approach will ensure that technological adoption translates into sustainable professional fulfillment rather than exacerbated stress, ultimately creating a more productive, positive, and humane digital educational environment for all stakeholders.

Theoretical Implications

This study offers significant theoretical implications by successfully integrating the Job Demands-Resources (JD-R) theory with the Technology Acceptance Model (TAM) (Davis, 1989) to create a more nuanced understanding of digital well-being in academic settings. While both theories have been applied independently, their synthesis provides novel insights into how technology perceptions function within broader occupational health frameworks. The findings demonstrate that constructs from TAM, specifically perceived usefulness, operate as critical job resources within the JD-R framework (Bakker & Demerouti, 2017), influencing outcomes through motivational pathways rather than through direct effects. This integration addresses an important theoretical gap by showing how technology acceptance factors function as psychological resources that work through engagement mechanisms rather than directly impacting well-being. The study further advances theoretical understanding by identifying work engagement (Schaufeli et al., 2006) as the central mediating mechanism through which both personal resources (self-efficacy) and organizational resources (social support) enhance digital well-being. The non-significant direct relationship between perceived usefulness and digital well-being introduces the concept of paradoxical technology effects, suggesting that even when technologies are perceived as useful according to TAM principles, they may simultaneously introduce hidden cognitive demands that mitigate potential well-being benefits. This insight challenges simplistic technology-wellbeing relationships and encourages more complex, mediated theoretical models. Additionally, the strong influence of social support underscores the importance of relational aspects in digital environments, expanding JD-R's resource classification to include digital social resources as critical components in technology-mediated work settings. These theoretical advancements provide a more sophisticated framework for understanding how technological, personal, and social factors interact to influence professional well-being in digital education contexts, offering valuable directions for future theoretical development.

Practical Implications

Practical implications from the study provide clear guidance for ODDE institutions seeking to improve academicians' digital well-being. First, institutions should implement continuous professional development programs focused on building digital self-efficacy, as this construct significantly enhances both work engagement and well-being. These programs should include hands-on training for educational technology tools, pedagogical workshops for online course design, and certification courses in digital instruction methods. Second, establishing structured social support systems is essential, given the strong direct impact of social support on engagement. This can be achieved through formal mentoring networks, communities of

practice for resource sharing, and responsive IT support services to reduce technostress. Third, while perceived usefulness alone does not directly improve well-being, institutions should demonstrate the tangible benefits of digital tools through showcasing success stories, providing evidence of workload reduction through automation, and creating incentives for innovative digital teaching practices. Fourth, wellbeing principles must be integrated into digital tool adoption processes, with emphasis on features that minimize cognitive load, streamline workflows, and encourage healthy digital detachment. Finally, prioritizing work engagement initiatives through recognizing digital efforts, promoting professional autonomy, and reducing unnecessary administrative burdens will yield the most substantial direct improvements in well-being. These evidence-based approaches enable institutions to transform technological adoption from a potential stressor into a sustainable driver of academic excellence and professional fulfillment.

Suggestions for Future Studies

Based on this study, several avenues emerge for future research. First, longitudinal designs should track how digital well-being and its predictors evolve, particularly during technological transitions or policy changes. Second, qualitative investigations are needed to deeply explore the paradoxical finding that useful technologies sometimes fail to enhance well-being, uncovering the specific contextual factors and hidden demands involved. Third, research should examine potential moderating variables, such as institutional culture, leadership styles, or individual traits like resilience, which may strengthen or weaken the relationships identified. Fourth, future studies could expand the model to include additional outcomes, such as student performance or institutional reputation, to capture wider organizational impact. Finally, comparative studies across different countries or educational systems would help determine the cross-cultural validity of these findings and identify context-specific interventions for improving digital well-being in academic communities.

Conclusion

This study successfully establishes that academicians' digital well-being in ODDE institutions is not directly determined by technology perceptions alone but is profoundly shaped by psychological and organizational resources. The integration of JD-R theory and TAM provides a robust framework revealing work engagement as the critical mediator through which self-efficacy and social support enhance well-being. While perceived usefulness boosts engagement, its lack of direct effect on well-being underscores the complex, often paradoxical, nature of technology adoption. These findings emphasize that sustainable digital well-being requires institutional strategies that simultaneously build digital competence, foster supportive environments, and design technologies with well-being in mind. Ultimately, prioritizing academicians' holistic digital wellness is not merely an ethical imperative but a strategic investment in the quality, innovation, and sustainability of digital education itself.

References

Aminuddin, A. S., Amran, A., Suhaimin, M. F., Pauzi, N. M., & Kozako, I. N. A. M. F. (2025). Effects of Motivation, Self-Efficacy, Efficiency, and Qualities on Academician's Job Performance during Work from Home (WFH). *Environment-Behaviour Proceedings Journal*, *10*(SI26), 105-111.

Arbulú Pérez Vargas, C. G., Moreno Muro, J. P., Pérez Delgado, J. W., Espino Carrasco, D. K., Fernández Cueva, A., & Acosta-Enriquez, B. G. (2024). Mediating role of digital skills and mobile self-efficacy in the stress and academic engagement of Peruvian university students in postpandemic virtual environments. *BMC psychology*, *12*(1), 481.

Aris, A. Z. Z., & Othman, S. Z. (2024). Nurturing Mental Well-being: exploring the impact of Job Insecurity and Perceived Organizational support on help-seeking among Malaysian academics. *Review of Integrative Business and Economics Research*, *13*(2), 142-157.

Bahar, F. H. M., Roslan, N. S., Pang, N. T. P., & Yusoff, M. S. B. (2024). Digital well-being among learners in higher education: A scoping review protocol. *Educ. Med. J*, *16*, 181-186.

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285.

Büchi, M., Festic, N., & Latzer, M. (2022). The Digital Well-Being Scale: Conceptualization, Instrument Development and Validation. SSRN Electronic Journal. https://ssrn.com/abstract=4061204

Ceccarini, C., Prandi, C., Monge Roffarello, A., & De Russis, L. (2024, June). Digital Wellbeing for Teens: Designing Educational Systems (DIGI-Teens 2024). In *Proceedings of the 2024 International Conference on Advanced Visual Interfaces* (pp. 1-3).

Chaudhry, S., Tandon, A., Shinde, S., & Bhattacharya, A. (2024). Student psychological well-being in higher education: The role of internal team environment, institutional, friends and family support and academic engagement. *Plos one*, *19*(1), e0297508.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357. https://doi.org/10.1037/0033-2909.98.2.310

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. MIS Quarterly, 19(2), 189–211.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.

Dong, J. J., Tan, Z. D., Zhang, Y. L., Sun, Y. J., & Huang, Y. K. (2025). Work from home and employee well-being: a double-edged sword. *BMC psychology*, *13*(1), 748.

Filep, S., Kondja, A., Wong, C. C. K., Weber, K., Moyle, B. D., & Skavronskaya, L. (2024). The role of technology in users' wellbeing: Conceptualizing digital wellbeing in hospitality and future research directions. *Journal of Hospitality Marketing & Management*, *33*(5), 583-601.

Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2019). *Multivariate data analysis (8th ed.)*. Cengage Learning.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Thousand Oaks, CA: SAGE.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (3 ed.).* Thousand Oaks, CA: Sage.

Hair, J.F., M. Sarstedt, C.M. Ringle, and S.P. Gudergan. (2018). *Advanced issues in partial least squares structural equation modeling.* Thousand Oakes, CA: Sage Publications

Hameli, K., Ukaj, L., & Çollaku, L. (2025). The role of self-efficacy and psychological empowerment in explaining the relationship between emotional intelligence and work engagement. *EuroMed Journal of Business*, *20*(2), 378-398.

Hayama, Y., & Desai, H. (2025). Digital Wellbeing. In *Digital Futures in Human-Computer Interaction* (pp. 224-242). CRC Press.

Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling**,** *Journal of the Academy of Marketing Science*, 43(1): 115-135.

Ilin, D. M. (2025). Empowering Tomorrow's Tech Workforce: The Interplay of Professional Self-Efficacy and Work Engagement among IT Specialists. *Available at SSRN 5129793*.

Islambouli, R., Ingram, S., & Gillet, D. (2024, June). Understanding digital well-being through smartphone usage intentions and regrettable patterns. In *2024 IEEE 12th International Conference on Healthcare Informatics (ICHI)* (pp. 426-435). IEEE.

Kahpi, H. S., Wandi, D., Kusuma, H. W., & Dadi Priadi, M. (2024). Determinants of Work life Balance on Lecturer Performance mediated by Work Engagement. *International Journal of Current Science Research and Review*, *7*(02), 921-929.

Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998). The Job Content Questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. Journal of Occupational Health Psychology, 3(4), 322–355.

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10.

Kock, N., & Lynn, G.S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13(7), 546-580.

Kozhakhmet, S., Moghavvemi, S., & Mazhiyeva, G. (2025). Enhancing Faculty Well-Being and Performance Through University Support: The Role of Resiliency and Proactive Personality in Remote Work. *Higher Education Quarterly*, *79*(1), e12592.

Liengaard, B. D., Sharma, P. N., Hult, G. T. M., Jensen, M. B., Sarstedt, M., Hair, J. F., & Ringle, C. M. (2021). Prediction: Coveted, Yet Forsaken? Introducing a Cross-validated Predictive Ability Test in Partial Least Squares Path Modeling. *Decision Sciences*, 52(2), 362-392.

Maskun, R., Khairi, S. M. M., Sulaiman, M. N. A., Aris, N. M., Omar, M. M., & Mohamed, M. N. (2025). Digital Wellbeing Among Generation Y in Malaysia: Implications, Challenges, and the Path Forward. *Asia Pacific Journal of Business, Humanities and Education*, *10*(1), 44-57.

Mazumdar, A. (2025). EXAMINING THE HEALTH IMPACTS OF SMARTPHONE OVERUSE: A PATH TO ACHIEVING DIGITAL WELLBEING-A SYSTEMATIC REVIEW. *International Journal of Medicine & Public Health*, *15*(2).

Meng, Q., Yan, Z., Abbas, J., Shankar, A., & Subramanian, M. (2025). Human–computer interaction and digital literacy promote educational learning in pre-school children: mediating role of psychological resilience for kids' mental well-being and school readiness. *International Journal of Human–Computer Interaction*, *41*(1), 16-30.

Mohamad, L., & Osman, Z. (2025). INTENTION TO ADOPT INNOVATION CULTURE AMONG EMPLOYEES IN ONLINE DISTANCE LEARNING HIGHER EDUCATION INSTITUTIONS. Turkish Online Journal of Distance Education, 26(1), 122-133. ISSN: 1302-6488

Mohanty, S., Satpathy, I., Patnaik, B. C. M., & Chakravarty, D. (2025). Enhancing University-Workforce Collaboration Through Digital Literacy, Technology Integration, and Mental Well-Being Support. In *Institutes of Higher Education (IHE) and Workforce Collaboration for Digital Literacy* (pp. 125-152). IGI Global Scientific Publishing.

Nuutinen, S., & Bordi, L. (2025). Technology use and employee well-being among teachers during Covid-19: moderating effects of school support and detachment from work. *International Journal of Educational Management*, *39*(8), 57-76.

Osman, Z., Alwi, N. H., Husin, S. A., & Razak, N. S. A. (2025). Embrace, Evolve, & Excel: Artificial Intelligence-Driven Transformational Acceptance in the Commercial Banking Sector. International Journal of Academic Research in Business and Social Sciences, 15(8), 814-831. ISSN: 2222-6990 http://dx.doi.org/10.6007/IJARBSS/v15-i8/25830

Osman, Z., Nguyen, H.-A. T., Intaratat, K., Suhandoko, A. D. J., & Serrano, J. (2025). Endure, Learn, Inspire, Persist: Academician Job Resilience in Open, Distance, and Digital Education of Higher Institutions. International Journal of Academic Research in Business and Social Sciences, 15(6), 1540–1554. ISSN: 2222-6990 http://dx.doi.org/10.6007/IJARBSS/v15-i6/25564

Osman, Z., Nguyen, H.-A. T., Serrano, J., Intaratat, K., & Suhandoko, A. D. J. (2025). Resilience Transforms Challenges: Fostering Academicians' Job Resilience in Open, Distance, and Digital Education Higher Institutions. International Journal of Academic Research in Progressive Education and Development, 14(3), 880–897. ISSN: 2226-6348 http://dx.doi.org/10.6007/IJARPED/v14-i3/25833

Pothuganti, S. K., P Ramachandra, G., & V, R. D. (2025). The impact of technostress on employee engagement and well-being. *Human Systems Management*, *44*(5), 819-835.

Rezai, A., Soyoof, A., & Reynolds, B. L. (2024). Disclosing the correlation between using ChatGPT and well-being in EFL learners: Considering the mediating role of emotion regulation. *European Journal of Education*, *59*(4), e12752.

Ringle, C.M., and M. Sarstedt. (2016). Gain more insight from your PLS-SEM results: The importance-performance map analysis. *Industrial Management & Data Systems.* 116: 1865–1886.

Ringle, Christian M., Wende, Sven, & Becker, Jan-Michael. (2022). SmartPLS 4. *Oststeinbek*: SmartPLS. Retrieved from https://www.smartpls.com

Ruihua, L., Hassan, N. C., Qiuxia, Z., Sha, O., & Jingyi, D. (2025). A systematic review on the impact of social support on college students' well-being and mental health. *PLoS One*, *20*(7), e0325212.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire. *Educational and Psychological Measurement*, 66(4), 701–716.

Shmueli, G., M. Sarstedt, J.F. Hair, J.-H. Cheah, H. Ting, S. Vaithilingam, and C.M. Ringle. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing*. 53: 2322–2347.

Shmueli, G., S. Ray, J.M. Velasquez Estrada, and S.B. Chatla. (2016). The elephant in the room: predictive performance of PLS models. *Journal of Business Research*, 69: 4552–4564.

Tang, L., & Zhu, X. (2024). Academic self-efficacy, grit, and teacher support as predictors of psychological well-being of Chinese EFL students. *Frontiers in Psychology*, *14*, 1332909.

Weber, P. M., Kammerl, R., & Schiefner-Rohs, M. (2025). What Does Digital Well-Being Mean for School Development? A Theoretical Review with Perspectives on Digital Inequality. *Education Sciences*, *15*(8), 948.

Yang, X., & Du, J. (2024). The effect of teacher self-efficacy, online pedagogical and content knowledge, and emotion regulation on teacher digital burnout: a mediation model. *BMC psychology*, *12*(1), 51.