

Reducing Digital Resistance through Digital Competence: Evidence from Administrative Staff at Universitas Padjadjaran

Nina Susanti¹, Dina Sartika², Wa Ode Zusnita Muizu³

¹⁻³ Universitas Padjadjaran, Indonesia

Article Info

Article history:

Received Aug, 2026

Revised Aug, 2026

Accepted Aug, 2026

Keywords:

Digital Competence

Digital Workload

Technostress

Digital Resistance

PLS-SEM

ABSTRACT

Administrative work at Universitas Padjadjaran changed considerably as the university expanded its use of integrated digital systems for academic and administrative services, a shift that raised concerns about digital resistance because technology adoption in higher education does not always proceed smoothly when staff readiness is uneven. Positioning digital competence as a central factor, this study investigated its role in reducing digital resistance among administrative staff, alongside the contributions of digital workload and technostress, with technostress modeled as a mediator. A causal explanatory, cross-sectional, quantitative design was used. Structured questionnaires using a five-point Likert scale were distributed to administrative staff, yielding 215 initial responses; after a data quality screening process removed 13 unsuitable responses, 202 valid responses were retained for analysis. Partial Least Squares Structural Equation Modeling, applying a second-order reflective-reflective construct model in SmartPLS, was used to analyze the data. Findings revealed that digital competence exerted a negative, significant effect on technostress and constituted the strongest path within the model, whereas digital workload showed no significant effect on technostress. Neither digital competence nor digital workload directly and significantly predicted digital resistance; instead, technostress significantly and positively predicted digital resistance and fully mediated the pathway from digital competence to digital resistance. Digital competence therefore appeared to lower digital resistance indirectly, by reducing technostress rather than through a direct effect. Universitas Padjadjaran was encouraged to strengthen digital competence development and improve communication during system changes to manage technostress and digital resistance among its administrative staff.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Name: Nina Susanti

Institution Address: Universitas Padjadjaran, Indonesia

e-mail: nina.susanti@unpad.ac.id

1. INTRODUCTION

Digital transformation has become a strategic agenda in modern higher education management, changing how administrative

processes are designed, executed, and monitored [1]–[4]. Universities increasingly depend on integrated information systems to manage academic services, data

administration, and reporting, replacing manual procedures with standardized, system-based workflows [5]. While digitalization improves efficiency, transparency, and accountability, it simultaneously increases organizational dependence on technology, so that any system disruption, feature update, or procedural change can directly affect daily operations.

Within this context, the use of digital systems among administrative staff in higher education institutions has expanded substantially. Administrative staff are now expected to operate multiple digital platforms, ensure accuracy in data entry, and respond promptly to system-based service demands [6]. This intensifying reliance on digital systems does not automatically translate into smooth adoption; the introduction of new systems or procedures can be met with hesitance, delay, or avoidance, a phenomenon commonly referred to as digital resistance [7]. Digital resistance can manifest actively, through open objection to system use, or passively, through postponing the use of new features or reverting to manual work-arounds.

Among the resources available to employees navigating a digitalized workplace, digital competence stands out as particularly consequential [8] [9]. When employees can manage information effectively, communicate through digital platforms, produce digital content, protect digital security, and resolve technical problems, they generally approach system changes with greater confidence; those lacking such competence, by contrast, often find it difficult to keep up as digital procedures continue to evolve [10], [11]. Alongside this resource, employees face a rising digital workload more tasks, tighter deadlines, and heavier cognitive demands generated by the growing number of digital applications used at work [12], [1]. When this workload accumulates faster than employees can adapt, it can develop into technostress, a state in which technological demands outpace an individual's coping capacity [11], [13]. If digital competence remains insufficient and

digital workload goes unmanaged, both factors may jointly fuel technostress, which can then influence how employees respond to digital systems, including whether they become resistant to them [14], [15].

At Universitas Padjadjaran, a preliminary survey among administrative staff indicated that digital competence was not evenly distributed, that digital workload tended to increase alongside system updates, that technostress symptoms such as anxiety about input errors were reasonably common, and that passive forms of digital resistance, such as delaying the use of new features, were also present. These preliminary indications suggested that the relationships among digital competence, digital workload, technostress, and digital resistance in this setting warranted closer empirical examination, particularly regarding the mechanism through which digital competence and digital workload might be associated with digital resistance.

Prior studies have established links between digital competence and reduced strain among technology users, and between technostress and resistance to organizational or technological change, largely within general organizational or teaching-staff contexts [16] [6]. However, empirical evidence that integrates digital competence, digital workload, and technostress within a single structural model to explain digital resistance among higher education administrative staff, as distinct from academic or teaching staff, remains limited, particularly in the Indonesian public higher education context, where digital skills development among public-sector employees is still an emerging area of study [17]. Moreover, prior studies have not consistently examined whether technostress operates as a mediating mechanism linking these two contrasting antecedents, digital competence and digital workload, to digital resistance.

This study addressed that gap by examining digital competence, digital workload, technostress, and digital resistance among administrative staff at Universitas Padjadjaran, using a second-order Partial Least Squares Structural Equation Modeling

(PLS-SEM) approach grounded in the Job Demands-Resources framework [18]–[20]. The novelty of this study lies in positioning technostress as a mediating mechanism between a personal resource (digital competence) and a job demand (digital workload) in explaining digital resistance among administrative staff in an Indonesian public university, a context that has received limited empirical attention relative to studies conducted among faculty or private-sector employees. Theoretically, this study contributes to the Job Demands-Resources literature by clarifying how personal resources and job demands relate differently to strain and behavioral outcomes in a digitalized higher education workplace. Practically, the findings are intended to inform Universitas Padjadjaran's efforts to design digital competence development programs, manage digital workload, and reduce digital resistance among its administrative staff.

Based on this background, this study aimed to: (1) describe the condition of digital competence, digital workload, technostress, and digital resistance among administrative staff at Universitas Padjadjaran; (2) examine the effect of digital competence on technostress; (3) examine the effect of digital workload on technostress; (4) examine the effect of digital competence and digital workload on digital resistance; (5) examine the effect of technostress on digital resistance; and (6) examine the mediating role of technostress in the relationships between digital competence and digital workload with digital resistance.

2. LITERATURE REVIEW

The Job Demands-Resources (JD-R) theory served as the foundation of this study, offering an account of employee well-being and behavior built on the interplay between two categories of workplace conditions: demands, which draw on sustained physical or psychological effort, and resources, which support employees in reaching work goals, buffer demanding conditions, and foster growth ([18]–[20]). Applying this framework

to a digitalized workplace, the present study treated digital workload as a job demand, given that it captures rising task volume, faster work pace, and greater cognitive load tied to digital systems, while digital competence was treated as a personal resource, representing employees' capacity to meet these digital demands. Technostress, in turn, was framed as the strain that channels the influence of these two antecedents into employees' behavioral response digital resistance functioning as the mediating link between them.

Digital competence refers to an individual's ability to understand, use, and adapt to digital technology, encompassing information and data literacy, digital communication and collaboration, digital content creation, digital security, and problem solving [8]. As a personal resource, digital competence was expected to help administrative staff manage digital job demands with greater confidence, thereby reducing the psychological strain associated with technology use [11].

Digital workload refers to the level of job demands generated by digital work, including the quantity of tasks, the pace at which tasks must be completed, and the cognitive effort required to operate digital systems [12]. As a job demand, digital workload was expected to increase technostress when it exceeded employees' coping capacity.

Technostress refers to a form of psychological strain that arises when the demands associated with information and communication technology exceed an individual's ability to cope [13], [14]. In this study, technostress was examined through indicators reflecting techno-overload, techno-complexity, and techno uncertainty, and was positioned as a mediating variable linking digital competence and digital workload to digital resistance.

Digital resistance refers to employees' tendency to reject, delay, or avoid the use of digital systems, expressed through active resistance, such as openly objecting to a system, or passive resistance, such as postponing the use of new features [7], [21].

Based on the JD-R framework and the relationships described above, technostress was expected to translate job demands and personal resources into behavioral resistance toward digital systems.

Based on this framework, the following hypotheses, consistent with those tested in the source thesis, were examined:

H1: Digital workload has a positive effect on technostress.

H2: Digital competence has a negative effect on technostress.

H3: Technostress has a positive effect on digital resistance.

H4: Technostress mediates the effect of digital workload on digital resistance.

H5: Technostress mediates the effect of digital competence on digital resistance.

H6: Digital competence and digital workload simultaneously affect digital resistance through technostress.

3. METHODS

This study used a quantitative approach with a causal explanatory design, intended to test the relationships among variables based on hypotheses derived from theory and prior research, rather than merely describing conditions. Based on the time dimension, this study applied a cross-sectional design, since data were collected at a single point in time rather than through repeated observation of the same respondents.

The study was conducted at Universitas Padjadjaran, Bandung, Indonesia. The population consisted of administrative staff across the university's faculties, directorates, and central units, chosen because they are the primary users of the university's integrated digital systems, such as the academic information system and e-office platform, and therefore interact directly and intensively with digital technology in their daily work.

Respondents were selected through a combination of stratified and purposive sampling. Respondents were required to (1) hold an active status as administrative staff at Universitas Padjadjaran, (2) use the

university's digital systems with a relatively high frequency, since technostress and digital resistance can only be accurately assessed among individuals who actively interact with the relevant technology, and (3) have a minimum of six months of work experience, to ensure that respondents had passed through an initial adaptation period and could provide a relatively stable assessment.

An initial total of 215 questionnaires were collected, comprising 117 male and 98 female respondents. Following a data quality screening process, 13 responses (10 from male respondents and 3 from female respondents) were identified as unsuitable for further analysis and were removed, leaving 202 valid responses for the subsequent analysis. This screening was carried out to protect the accuracy of the structural model estimation and reflected standard data-cleaning practice in PLS-SEM research [22], rather than being intended to selectively improve the statistical outcome.

Data were collected through a structured questionnaire distributed to respondents, using a five-point Likert scale ranging from strongly disagree to strongly agree. The questionnaire covered four main variables: digital competence and digital workload as exogenous variables, technostress as a mediating variable, and digital resistance as an endogenous variable. Digital competence was measured through five dimensions: information and data literacy, digital communication and collaboration, digital content creation, digital security, and problem-solving. Digital workload was measured through three dimensions: quantitative demands, work pace/temporal pressure, and cognitive demands. Technostress was measured through three dimensions: techno-overload, techno-complexity, and techno-uncertainty. Digital resistance was measured through two dimensions: active resistance and passive resistance. Each dimension included both positively and negatively worded (reverse-coded) items; reverse-coded items were re-scored prior to analysis so that higher scores consistently reflected a higher level of the underlying construct.

Given that each main variable was formed by several dimensions, this study applied a second-order, reflective-reflective hierarchical component model, in which questionnaire indicators formed first-order dimension constructs, which in turn formed the second order main constructs [23]. This modeling approach allowed the relationships between indicators and dimensions, between dimensions and main constructs, and among the main constructs themselves to be examined within a single structural framework.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software (version 4.1.1.8), following a two-stage approach for second-order constructs. PLS-SEM was selected because it is suitable for testing structural relationships among latent variables, does not require a multivariate normal data distribution, and can accommodate relatively complex models involving multiple first-order and second-order constructs [22]

The structural model was evaluated through the coefficient of determination (R^2), model fit using the standardized root mean square residual (SRMR), path coefficients, and

predictive relevance (Q^2_{predict}), following the criteria proposed by [22], [24]. Hypothesis testing was carried out through a bootstrapping procedure; a path was considered statistically significant if the t-statistic exceeded 1.96 and the p-value was below 0.05. Mediation was assessed by comparing the direct effect of digital competence and digital workload on digital resistance with their indirect effect through technostress; a relationship was classified as full mediation when the indirect effect was significant while the corresponding direct effect was not significant, and as no mediation when neither the relevant direct nor indirect effect reached significance.

4. RESULTS AND DISCUSSION

4.1 Respondent Characteristics

An initial 215 questionnaires were collected from administrative staff at Universitas Padjadjaran. During data screening, 13 responses were excluded because they did not meet the minimum quality requirements for further analysis, leaving 202 valid responses used in this study. Table 1 summarizes the demographic profile of the 202 valid respondents.

Table 1. Characteristics of Respondents (n=202)

Characteristic	Category	n	%
Gender	Male	107	53.0
	Female	95	47.0
Age	18–24 years	2	1.0
	25–34 years	12	5.9
	35–44 years	47	23.3
	45–54 years	111	55.0
	≥ 55 years	30	14.9
Education	Senior high school	40	19.8
	Diploma	26	12.9
	Bachelor's degree	101	50.0
	Master's/Doctoral degree	35	17.3
Tenure at Unpad	< 5 years	13	6.4
	5–10 years	7	3.5

Characteristic	Category	n	%
	10–15 years	30	14.9
	> 15 years	152	75.2
Digital system use	< 5 years	21	10.4
	5–10 years	53	26.2
	10–15 years	65	32.2
	> 15 years	63	31.2
Employment status	Civil servant	125	61.9
	Permanent non-civil-servant	73	36.1
	Contract	4	2.0

Source: Primary Data Processed, 2026

As shown in Table 1, respondents were fairly evenly distributed by gender, with a slightly higher proportion of male respondents (53.0%) than female respondents (47.0%). Most respondents were between 45 and 54 years old (55.0%), and respondents aged 45 years and above accounted for 69.8% of the sample, indicating that the study was dominated by relatively senior administrative staff. In terms of education, half of the respondents (50.0%) held a bachelor's degree, and 80.2% held a diploma degree or higher, suggesting that most respondents had an

adequate educational background to understand the questionnaire and to evaluate the use of institutional digital systems. Regarding tenure, most respondents (75.2%) had worked at Universitas Padjadjaran for more than 15 years, and a majority (63.4%) had used the institution's digital systems for more than 10 years, reflecting a sample with substantial organizational and digital-system experience. By employment status, most respondents were civil servants (61.9%), followed by permanent non-civil-servant staff (36.1%) and contract staff (2.0%).

4.2 Descriptive Analysis

Table 2. Descriptive Analysis of Research Variables

Variable	TCR (%)	Category	Highest dimension	Lowest dimension
Digital competence	80.17	High	Digital security (84.06%)	Information & data literacy (77.03%)
Digital workload	76.42	High	Quantitative demands (81.22%)	Work pace/temporal pressure (70.17%)
Technostress	49.69	Low	Techno-uncertainty (53.04%)	Techno-overload (45.30%)
Digital resistance	52.10	Moderate	Passive resistance (56.21%)	Active resistance (48.00%)

Source: Primary Data Processed, 2026. TCR = Total Continuum Ratin

As presented in Table 2, digital competence obtained the highest total continuum rating (TCR) among the four variables (80.17%, high category), followed by digital workload (76.42%, high category). Within digital competence, digital security

was the most prominent dimension (84.06%), while information and data literacy were the lowest, although still relatively high (77.03%). Within digital workload, quantitative demands were the most dominant dimension (81.22%), reflecting a high volume of tasks,

particularly during peak periods such as the beginning of the semester or accreditation processes.

Technostress obtained a TCR of 49.69%, placing it in the low category, indicating that administrative staff generally did not experience severe psychological strain from digital technology use. Among the technostress dimensions, techno-uncertainty was the highest (53.04%), driven largely by unclear communication during system updates, while techno-overload was the lowest (45.30%).

Digital resistance obtained a TCR of 52.10%, in the moderate category. Passive resistance (56.21%) was more dominant than active resistance (48.00%), suggesting that when resistance occurred, it tended to take the form of quiet avoidance, such as delaying the use of new features, rather than open objection.

Overall, these descriptive results suggested that although administrative staff faced a fairly high digital workload, their relatively strong digital competence appeared to correspond with a comparatively low level of technostress and a moderate level of digital resistance, dominated by passive rather than active forms.

4.3 Measurement Assessment

Model

Convergent validity was assessed through outer loading and average variance extracted (AVE). Of 51 first-order indicators initially tested, 15 indicators were removed iteratively because their outer loading fell below 0.70, leaving 36 indicators that met the threshold, with loadings ranging from 0.700 to 0.925. All 13 first-order constructs achieved an AVE above 0.50, ranging from 0.551 (cognitive demands) to 0.814 (techno-overload), confirming adequate convergent validity at the dimension level.

At the second order level, 12 of 13 dimensions loaded above 0.70 onto their respective main constructs, with the highest loading of 0.914 (passive resistance) and the lowest acceptable loading of 0.700 (digital security). One dimension, techno-overload, loaded below the threshold at 0.638; it was retained because it represents a core, theoretically established component of technostress, and its removal did not meaningfully improve the composite reliability or AVE of the technostress construct. All four second-order constructs achieved an AVE above 0.50 (Table 3), confirming convergent validity at the main-construct level.

Table 3. Convergent Validity and Reliability of Second – Order Constructs

Construct	AVE	Cronbach's alpha	rho_A	Composite reliability
Digital workload	0.633	0.723	0.768	0.838
Digital competence	0.626	0.850	0.857	0.893
Digital resistance	0.732	0.646	0.719	0.845
Technostress	0.597	0.667	0.716	0.814

Source: SmartPLS Output, Primary Data Processed, 2026.

Internal consistency reliability was assessed through Cronbach's alpha, rho_A, and composite reliability. As shown in Table 3, all four second-order constructs achieved a composite reliability above 0.70, ranging from 0.814 (technostress) to 0.893 (digital competence). Although the Cronbach's alpha values for digital resistance (0.646) and technostress (0.667) fell slightly below the

conventional 0.70 threshold, likely because both constructs were formed by only two to three dimensions, their composite reliability values exceeded 0.70; consistent with recommendations for PLS-SEM, composite reliability was used as the primary criterion for concluding reliability [22].

Table 4. Discriminant Validity of Second-Order Constructs (Fornell-Lacker Criterion)

Construct	Digital workload	Digital competence	Digital resistance	Technostress
Digital workload	0.796			
Digital competence	0.674	0.791		
Digital resistance	-0.284	-0.380	0.856	
Technostress	-0.389	-0.593	0.524	0.773

Source: Smartpls Output, Primary Data Processed, 2026. Diagonal values (bold in the original output) represent the square root of AVE.

Discriminant validity was assessed through the Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT). As presented in Table 4, the square root of the AVE for each second-order construct exceeded its correlation with any other construct, satisfying the Fornell-Larcker criterion. All HTMT values among the second-order constructs were also below the 0.90 threshold. Taken together, these results indicated that the measurement model achieved adequate validity and reliability.

4.4 Structural Model Assessment

The structural model was evaluated through the coefficient of determination (R^2)

and model fit. As shown in Table 5, digital workload and digital competence jointly explained 35.2% of the variance in technostress (moderate category), while digital competence, digital workload, and technostress jointly explained 28.4% of the variance in digital resistance (weak-to-moderate category). The model's SRMR value was 0.088 for both the saturated and estimated models; although this slightly exceeded the strict threshold of 0.08, it remained below the more lenient 0.10 threshold commonly applied in PLS-SEM, indicating an acceptable model fit.

Table 5. Coefficient of Determination (R-Square)

Endogenous variable	R-Square	R-Square adjusted	Category
Technostress	0.352	0.345	Moderate
Digital resistance	0.284	0.273	Weak-to-moderate

Source: SmartPLS Output, Primary Data Processed, 2026.

Table 6. Path Coefficients of Direct Effects

Relationship	Original sample (β)	t-statistic	p-value	Result
Digital workload $\rightarrow$ Technostress	0.020	0.287	0.774	Not significant
Digital competence $\rightarrow$ Technostress	-0.606	8.459	0.000	Significant
Technostress $\rightarrow$ Digital resistance	0.461	5.855	0.000	Significant
Digital competence $\rightarrow$ Digital resistance	-0.066	0.685	0.493	Not significant
Digital workload $\rightarrow$ Digital resistance	-0.060	0.680	0.496	Not significant

Source: SmartPLS Bootstrapping Output, Primary Data Processed, 2026.

Path coefficients for the direct effects are presented in Table 6. Of the five direct paths tested, two were statistically significant. Digital competence had a negative and significant effect on technostress ($\beta = -0.606$; $t = 8.459$; $p = 0.000$), the strongest path in the

model. Technostress had a positive and significant effect on digital resistance ($\beta = 0.461$; $t = 5.855$; $p = 0.000$). The remaining three direct paths were not statistically significant: digital workload on technostress ($\beta = 0.020$; $p = 0.774$), digital competence on digital

resistance ($\beta = -0.066$; $p = 0.493$), and digital workload on digital resistance ($\beta = -0.060$; $p = 0.496$).

4.6 Hypothesis Testing

Table 7. Summary of Hypothesis Testing Results

Hypothesis	Relationship	β / Indirect effect	t-statistic	p-value	Decision
H1	Digital workload $\rightarrow$ Technostress	0.020	0.287	0.774	Not supported
H2	Digital competence $\rightarrow$ Technostress	-0.606	8.459	0.000	Supported
H3	Technostress $\rightarrow$ Digital resistance	0.461	5.855	0.000	Supported
H4	Technostress mediates Digital workload $\rightarrow$ Digital resistance	0.009	0.282	0.778	Not supported
H5	Technostress mediates Digital competence $\rightarrow$ Digital resistance	-0.279	5.585	0.000	Supported
H6	Digital competence and Digital workload jointly affect Digital resistance through Technostress	$R^2 = 0.284$	–	–	Partially supported

Source: SmartPLS Bootstrapping Output, Primary Data Processed, 2026.

Table 7 summarizes the results of hypothesis testing. H1 (digital workload $\rightarrow$ technostress) was not supported, since the coefficient, although positive as hypothesized, was not statistically significant. H2 (digital competence $\rightarrow$ technostress) was supported, with a significant negative effect, the strongest relationship in the model. H3 (technostress $\rightarrow$ digital resistance) was supported, with a significant positive effect. H4 (technostress mediates digital workload $\rightarrow$ digital resistance) was not supported, consistent with the non-significant direct

effect of digital workload on technostress. H5 (technostress mediates digital competence $\rightarrow$ digital resistance) was supported, indicating full mediation. H6 (digital competence and digital workload jointly affect digital resistance through technostress) was partially supported, since the joint contribution to explaining digital resistance ($R^2 = 0.284$) was driven almost entirely by the digital competence–technostress–digital resistance path, while digital workload did not contribute significantly.

4.7 Mediation Analysis

Table 8. Indirect Effects (Mediation Analysis)

Indirect path	Original sample (β)	t-statistic	p-value	Result
Digital workload $\rightarrow$ Technostress $\rightarrow$ Digital resistance	0.009	0.282	0.778	Not significant
Digital competence $\rightarrow$ Technostress $\rightarrow$ Digital resistance	-0.279	5.585	0.000	Significant

Source: SmartPLS Bootstrapping Output, Primary Data Processed, 2026.

The indirect effect of digital competence on digital resistance through technostress was significant ($\beta = -0.279$; $t = 5.585$; $p = 0.000$). Because the direct effect of digital competence on digital resistance was not significant ($p = 0.493$) while the indirect effect was significant, technostress was identified as a full mediator of this relationship: digital competence appeared to affect digital resistance entirely through its effect on technostress, rather than directly. In contrast, the indirect effect of digital workload on digital resistance through technostress was not significant ($\beta = 0.009$; $t = 0.282$; $p = 0.778$), consistent with the non-significant direct effect of digital workload on technostress; no mediation occurred along this path.

4.8 Discussion

4.8.1 The Role of Digital Competence in Reducing Digital Resistance

Digital competence showed no significant direct path to digital resistance, yet its indirect path through technostress was negative and significant, confirming full mediation. Rather than reducing digital resistance simply because staff were skilled at operating digital systems, digital competence appeared to work indirectly, by easing the psychological burden that more capable employees experienced when confronted with digital demands. A plausible interpretation is that staff with stronger digital competence felt more assured and less strained when adapting to new systems, and this reduced strain, rather than competence itself, corresponded with less delay, avoidance, or objection toward digital system use. Such a pattern fits the JD-R framework's premise that personal resources cushion the strain generated by job demands, and echoes prior framing of digital competence as protective against technology-driven strain (Vuorikari et al., 2022; Ličen & Prosen, 2024). This should not, however, be read as proof that raising digital competence will automatically or directly curb digital resistance the cross sectional design of this study cannot support such a claim. What the data support is narrower: the observed association ran specifically through reduced

technostress, which addresses the study's second and fourth research questions concerning the role of digital competence.

4.8.2 Digital Workload and Technostress

H1 was not supported: digital workload showed no significant effect on technostress, an unexpected result that also answers the study's third research question. Administrative staff at Universitas Padjadjaran did report a fairly heavy digital workload, especially during peak periods when task volume spikes, yet this workload did not translate statistically into higher technostress. One explanation lies in the sample's profile: respondents were dominated by long-tenured staff, most of whom had spent over fifteen years at Universitas Padjadjaran and had used its digital systems for more than a decade, conditions under which a high volume of digital tasks may have settled into routine rather than remaining a source of strain. Digital competence may also have played a buffering role here because the sample's competence level was already high, it may have absorbed much of the strain that workload would otherwise generate, in line with the JD-R proposition that adequate resources can offset the impact of demands [25]. This departs from studies reporting a tighter link between job intensification, digital demands, and technostress in other settings [16], suggesting that the workload-technostress relationship may hinge more on context, particularly staff experience and competence levels, than on a uniformly positive association.

4.8.3 Technostress and Digital Resistance

The second core pathway in the model, technostress predicting digital resistance, was positive and significant (H3 supported), answering the study's fifth research question. In practical terms, administrative staff who experienced greater technostress were more inclined toward digital resistance, whether that took a passive form, such as postponing use of a new feature,

or an active one, such as voicing objections outright. Beyond simply echoing prior literature linking technostress to negative outcomes among technology users [13]–[15], this result invites a more specific reading within the present sample: digital resistance functioned, at least partly, as a coping response to psychological strain rather than a straightforward unwillingness to change. Notably, passive resistance outweighed active resistance among respondents, implying that staff experiencing technostress more often withdrew quietly than confronted the issue directly, a tendency that may be reinforced by the hierarchical norms typical of public-sector institutions.

4.9 The Mediating Role of Technostress

The full mediation of technostress in the digital competence digital resistance relationship, together with the absence of mediation in the digital workload digital resistance relationship, indicates that these two antecedents played distinctly different roles within the JD-R framework applied in this study, directly answering the study's sixth research question. Digital competence, as a personal resource, appeared to operate exclusively through its capacity to reduce strain, whereas digital workload, as a job demand, did not translate into strain or resistance in this particular sample. This asymmetry suggests that, in the context studied, resource-based interventions, such as developing digital competence, may carry more relevance for managing digital resistance than demand-based interventions, such as reducing workload, at least through the mechanism captured in this model.

4.10 Non-Significant Direct Paths

Three direct paths were not statistically significant: digital workload on technostress, digital competence on digital resistance, and digital workload on digital resistance. Rather than indicating that digital competence and digital workload were irrelevant to the model, these non-significant direct paths, combined with the significant indirect and total paths for digital competence, reinforced the conclusion that

technostress functioned as the primary mechanism connecting employees' digital capacity to their behavioral response toward digital systems. This pattern is consistent with the view that resistance to digitalization is rarely a direct reaction to competence or workload alone, but is instead shaped by the psychological strain that these factors may or may not generate. Collectively, these findings suggest that managing digital resistance among administrative staff in higher education requires attention to psychological strain, not competence-building or workload adjustment alone, particularly given that techno-uncertainty, linked to unclear communication during system changes, emerged as the most prominent technostress dimension in this study.

4.11 Managerial Implications

Based on these findings, several managerial implications are proposed for Universitas Padjadjaran, derived directly from the results rather than general assumptions.

First, since digital competence exhibited the strongest association with reduced technostress, and technostress fully mediated its effect on digital resistance, Universitas Padjadjaran should prioritize structured digital competence development for administrative staff. Because information and data literacy and problem-solving were the relatively lower - scoring dimensions of digital competence in this study, training programs could specifically target these two areas. Such programs could be coordinated by the university's human resource development unit, targeted at staff across faculties and directorates, ideally scheduled ahead of peak periods such as the beginning of each semester or accreditation cycles, with improved competence scores or a reduction in reported input errors used as indicators of success.

Second, because techno-uncertainty was the most prominent technostress dimension, driven largely by unclear communication when systems were updated, Universitas Padjadjaran should strengthen communication practices surrounding system

changes. This could include structured socialization sessions, written user guides, and dedicated technical assistance during the transition period following a system update, coordinated by the relevant information systems or academic administration unit, targeted at all administrative staff affected by the change, and evaluated through staff feedback or a reduction in reported confusion during subsequent updates.

Third, although digital workload did not show a statistically significant effect on technostress in this study, the descriptive results indicated that digital workload remained relatively high, particularly during peak administrative periods. Universitas Padjadjaran should therefore continue to monitor and, where feasible, redistribute digital workload during high - demand periods, such as the start of the semester or institutional accreditation, coordinated by unit or faculty supervisors, as a precautionary measure even though this pathway was not statistically confirmed in the present sample.

Fourth, given that passive resistance was more prevalent than active resistance, Universitas Padjadjaran could benefit from mechanisms that make employees' hesitations about digital systems more visible and actionable, such as periodic system - acceptance evaluations or feedback channels through which administrative staff can report difficulties in using digital systems without needing to resort to passive avoidance. Involving administrative staff in the planning and piloting stages of new system implementations, with supervisor support, may also help surface concerns earlier and reduce the likelihood of passive resistance, with participation rates in feedback mechanisms serving as an indicator of success.

Finally, since digital competence operated through technostress rather than directly affecting digital resistance, competence-building initiatives should be explicitly linked with strain - reduction efforts, for example by pairing digital skills training with peer mentoring or on - the - job technical support, coordinated by unit supervisors together with the human resource

development unit, so that increased competence translates into a genuine reduction in psychological strain rather than remaining a standalone skill-development activity.

5. CONCLUSION

Examining how digital competence, digital workload, and technostress shape digital resistance among administrative staff at Universitas Padjadjaran, this study found both digital competence and digital workload at a high level among respondents, technostress comparatively low, and digital resistance at a moderate level dominated by passive rather than active forms. Within the structural model, digital competence emerged as the strongest relationship overall, exerting a significant negative effect on technostress, while digital workload showed no significant effect on technostress. Direct paths from digital competence and digital workload to digital resistance were both non-significant; what mattered instead was technostress, which significantly and positively predicted digital resistance and fully carried the effect of digital competence toward that outcome, whereas no such mediating pathway existed for digital workload.

These findings indicate that digital competence was associated with lower digital resistance primarily through its role in reducing technostress, rather than through a direct pathway, while digital workload showed no significant association with either technostress or digital resistance in this sample. The model explained 35.2% of the variance in technostress and 28.4% of the variance in digital resistance, suggesting that other factors outside this model may also contribute to these outcomes.

Theoretically, this study contributes to the Job Demands Resources literature by demonstrating that a personal resource (digital competence) and a job demand (digital workload) can play asymmetric roles in relation to strain and behavioral resistance within a digitalized higher education workplace, with technostress serving as the operative mechanism for the resource

pathway but not the demand pathway in this context. Practically, the findings suggest that Universitas Padjadjaran can address digital resistance among administrative staff more effectively by strengthening digital competence and managing sources of uncertainty during system changes, rather than relying solely on workload adjustment.

This study has several limitations. The R^2 value for digital resistance remained in the weak – to – moderate category, indicating that a substantial portion of its variance remained unexplained by the current model. One digital workload indicator, a reverse-coded item, produced a notably divergent score compared with other items in the same dimension, suggesting a need for refinement in future instruments. The techno-overload dimension also showed an outer loading slightly below the ideal threshold at the second-order level. In addition, the cross-sectional design limits the ability to establish

the direction or stability of these relationships over time, and the single-institution sample limits the generalizability of the findings beyond Universitas Padjadjaran.

Future research is encouraged to incorporate additional variables, such as organizational support or digital leadership, to better explain technostress and digital resistance; to refine the digital workload instrument, particularly its reverse coded items; to adopt a longitudinal or time-lag design to observe how these relationships develop over time; to extend data collection to administrative staff at other higher education institutions to improve generalizability; and to complement the quantitative approach with qualitative methods, such as interviews, to gain a deeper understanding of the reasons underlying passive digital resistance, which was found to be the most dominant form in this study

REFERENCES

- [1] A. Carvalho, J. Leitão, and H. Alves, "Digital transformation, state Hei performance and the moderating role of leadership," *Int. J. Leadersh. Educ.*, pp. 1–33, 2023.
- [2] B. Deacon, M. Laufer, and L. O. Schäfer, "Infusing educational technologies in the heart of the university – A systematic literature review from an organisational perspective," *Br. J. Educ. Technol.*, vol. 54, no. 2, pp. 441–466, 2023.
- [3] P. A. P. Mabotha and B. S. Ngcamu, "Digital transformation in the higher education sector: A systematic literature review," *Adm. Sci.*, vol. 16, no. 1, p. 1, 2025.
- [4] R. Ramadania, Y. Hartijasti, B. B. Purmono, N. Haris, D. Muhammad, and M. Z. Afifi, "A Systematic Review on Digital Transformation and Organizational Performance in Higher Education.," *Int. J. Sustain. Dev. Plan.*, vol. 19, no. 4, p. 1239, 2024.
- [5] A. T. On and W. Terms, "Technology in education ;," 2023.
- [6] D. Wiyono, N. Parwitasari, E. Ambiapuri, H. Setiadi, and K. Khusna, "Digital Empowerment for Administrative Staff in Private Higher Education Institutions," *WSEAS Trans. Comput. Res.*, vol. 12, pp. 475–493, 2024.
- [7] M. L. Markus, "Power, politics, and MIS implementation," *Commun. ACM*, vol. 26, no. 6, pp. 430–444, 1983.
- [8] R. Vuorikari, S. Kluzer, Y. Punie, and S. Carretero, "DigComp 2.2: The digital competence framework for citizens. Publications Office of the European Union." Joint Research Center. <https://doi.org/10.2760/115376>, 2022.
- [9] S. Connectivity, *OECD Digital Economy Outlook 2024 (Volume 2)*, vol. 2, no. Volume 2, 2024.
- [10] J. S. Moreira-Choez *et al.*, "Influence of gender and academic level on the development of digital competencies in university teachers: A multidisciplinary comparative analysis," in *Frontiers in Education*, Frontiers Media SA, 2024, p. 1436368.
- [11] S. Ličen and M. Prosen, "Strengthening sustainable higher education with digital technologies: development and validation of a digital competence scale for university teachers (DCS-UT)," *Sustainability*, vol. 16, no. 22, p. 9937, 2024.
- [12] M. Molino *et al.*, "Wellbeing costs of technology use during Covid-19 remote working: An investigation using the Italian translation of the technostress creators scale," *Sustainability*, vol. 12, no. 15, p. 5911, 2020.
- [13] M. Tarafdar, C. L. Cooper, and J. Stich, "The technostress trifecta-techno eustress, techno distress and design: Theoretical directions and an agenda for research," *Inf. Syst. J.*, vol. 29, no. 1, pp. 6–42, 2019.

- [14] C. Califf and S. Brooks, "An empirical study of techno-stressors, literacy facilitation, burnout, and turnover intention as experienced by K-12 teachers," *Comput. Educ.*, vol. 157, Nov. 2020, doi: 10.1016/j.compedu.2020.103971.
- [15] G. La Torre, A. Esposito, I. Sciarra, and M. Chiappetta, "Definition, symptoms and risk of techno-stress: a systematic review," *Int. Arch. Occup. Environ. Health*, vol. 92, no. 1, pp. 13–35, 2019, doi: 10.1007/s00420-018-1352-1.
- [16] M. Nedeljko, Y. Gu, and C. M. Bostan, "The dual impact of technological tools on health and technostress among older workers: an integrative literature review," *Cogn. Technol. Work*, vol. 26, no. 1, pp. 47–61, 2024.
- [17] "ANALYSIS OF DIGITAL SKILLS DEVELOPMENT IN THE PUBLIC SECTOR," no. 5, 2024.
- [18] A. B. Bakker, E. Demerouti, and A. Sanz-Vergel, "Job demands–resources theory: Ten years later," *Annu. Rev. Organ. Psychol. Organ. Behav.*, vol. 10, no. 1, pp. 25–53, 2023.
- [19] A. B. Bakker and E. Demerouti, "Job demands–resources theory: Taking stock and looking forward.," *J. Occup. Health Psychol.*, vol. 22, no. 3, p. 273, 2017.
- [20] E. Demerouti, A. B. Bakker, F. Nachreiner, and W. B. Schaufeli, "The job demands-resources model of burnout.," *J. Appl. Psychol.*, vol. 86, no. 3, p. 499, 2001.
- [21] V. Cieslak and C. Valor, "Moving beyond conventional resistance and resistors: an integrative review of employee resistance to digital transformation," *Cogent Bus. Manag.*, vol. 12, no. 1, p. 2442550, Dec. 2025, doi: 10.1080/23311975.2024.2442550.
- [22] J. F. Hair, "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 3/E.," 2021.
- [23] M. Sarstedt, J. F. Hair Jr, J.-H. Cheah, J.-M. Becker, and C. M. Ringle, "How to specify, estimate, and validate higher-order constructs in PLS-SEM," *Australas. Mark. J.*, vol. 27, no. 3, pp. 197–211, 2019.
- [24] G. Shmueli *et al.*, "Predictive model assessment in PLS-SEM: guidelines for using PLSpredict," *Eur. J. Mark.*, vol. 53, no. 11, pp. 2322–2347, 2019.
- [25] P. Spagnoli, M. Molino, D. Molinaro, M. L. Giancaspro, A. Manuti, and C. Ghislieri, "Workaholism and technostress during the COVID-19 emergency: The crucial role of the leaders on remote working," *Front. Psychol.*, vol. 11, p. 620310, 2020.