

The Cointegration Relationship Between Money Supply, Exchange Rate and Economic Growth In Iraq (2004-2020)

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Abstract

Objectives: The phenomenon of employee burnout is increasingly common as universities cope with ever-increasing traditional demands in conjunction with unprecedented digital transformation. This cross-sectional quantitative study explores the extent to which workload predicts burnout among university employees in Jordan while also exploring digital fatigue as a moderating variable within the workload and burnout relationship.

Methods: The study adopted a quantitative approach utilizing a cross-sectional survey to examine the relationships between workload, digital fatigue, and burnout. Data were gathered from 300 employees across three universities in Jordan, and the hypotheses were tested using SPSS and the PROCESS macro to assess the moderating role of digital fatigue.

Results: We found significant relationships between workload and employee burnout levels. Using correlation analysis and hierarchical regression, we found that employee workloads are positively correlated with employee burnout levels, as anticipated by Job Demands-Resources (JD-R) theory. Furthermore, we found that digital fatigue significantly exacerbates the impact of workload on employee burnout, suggesting that as an employee's digital fatigue increases, so does their likelihood of experiencing some strain from working under a highly demanding workload.

Conclusions: Results from this research point toward the value of providing an opportunity for establishing Digital Wellness Programs as a means for providing workforce employees with an opportunity for establishing and sustaining professional boundaries. Finally, our research suggests implications for improving the efficiency and productivity of online and digitally literate workforces while reducing employee burnout.

Keywords: Workload, Burnout, Digital Fatigue, Technostress, Job Demands-Resources Model, Conservation of Resources Theory, Higher Education, University Employees, Jordan.

عبء العمل والاحتراق الوظيفي لدى موظفي الجامعات: الدور المضاعف للإرهاق الرقمي في البيئة الأكاديمية الرقمية

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ملخص

الأهداف: تتفاقم ظاهرة الاحتراق الوظيفي بين الموظفين بشكل متزايد مع سعي الجامعات إلى مواكبة المتطلبات التقليدية المتزايدة باستمرار بالتزامن مع تحول رقمي غير مسبوق. تبحث هذه الدراسة الكمية المقطعية في المدى الذي يتنبأ فيه عبء العمل بالاحتراق الوظيفي لدى موظفي الجامعات في الأردن، مع استكشاف الإرهاق الرقمي كمتغير معدل في العلاقة بين عبء العمل والاحتراق الوظيفي.

المنهجية: اعتمدت الدراسة منهجاً كمياً باستخدام المسح المقطعي لفحص العلاقات بين عبء العمل والإرهاق الرقمي والاحتراق الوظيفي. تم جمع البيانات من 300 موظف موزعين على ثلاث جامعات في الأردن، وتم اختبار الفرضيات باستخدام برنامج SPSS وملحق PROCESS لتقييم الدور المعدل للإرهاق الرقمي.

النتائج: وجود علاقات معنوية بين عبء العمل ومستويات الاحتراق الوظيفي لدى الموظفين. باستخدام تحليل الارتباط والانحدار الهرمي، وجدنا أن أعباء العمل لدى الموظفين ترتبط إيجابياً بمستويات احتراقهم الوظيفي، كما هو متوافق مع نظرية متطلبات وموارد العمل (JD-R). كما وجدنا أن الإرهاق الرقمي يؤدي إلى تفاقم تأثير عبء العمل على الاحتراق الوظيفي بشكل كبير، مما يشير إلى أنه كلما زاد الإرهاق الرقمي لدى الموظف، زاد احتمال معاناته من الضغط النفسي الناتج عن العمل تحت عبء عمل مرتفع.

الاستنتاجات: تشير نتائج هذه الدراسة إلى أهمية توفير برامج متخصصة للعافية الرقمية (Digital Wellness Programs) كآلية مؤسسية تهدف إلى تمكين الموظفين من وضع حدود مهنية فاعلة والحفاظ عليها في بيئة العمل الرقمية. كما تقدم الدراسة مضامين تطبيقية تسهم في تعزيز كفاءة وإنتاجية القوى العاملة المتمكنة رقمياً والعاملة عبر الإنترنت، وذلك من خلال التخفيف من حدة الاحتراق الوظيفي لديهم.

الكلمات المفتاحية: عبء العمل؛ الاحتراق الوظيفي؛ الإرهاق الرقمي؛ الضغط النفسي الناتج عن التكنولوجيا؛ نموذج متطلبات وموارد العمل؛ نظرية الحفاظ على الموارد؛ التعليم العالي؛ موظفو الجامعة؛ الأردن.

1. Introduction

Employee burnout has emerged as one of the main topics of interest in the field of organizational behaviour as well as occupational health. The rapid pace of digitalization is placing more job demands on organizations, thereby necessitating the need to focus on this challenge. The World Health Organization (WHO, 2019) refers to burnout as a syndrome caused by prolonged stress at the workplace. Burnout has been recognized by the WHO (2019) as an occupational phenomenon; it promotes the increased attention to organizational factors contributing to burnout. One of the most strongly recognized organizational predictors of burnout is workload. Previous studies constantly suggest that work demands lead to a cognitive and emotional drain in employees, which, in the long run, will lead to disengagement and emotional fatigue (Bakker et al., 2023).

The topic of burnout has been explored in different professional settings, but the field of higher education is a very challenging workplace. Universities are recognized as a highly stressful workplace environment around the world, due to a heavy workload in teaching and administration, research requirements, and the growing student support pressure (Kinman, 2014). In this regard, both faculty and staff are highly stressed and a scenario, which is also reflected in Jordan. Research in the academic institutions in Jordan has found that there is a high level of burnout among employees. To illustrate this example, Al-Shoqran et al. (2021) found that faculty members at one of the private universities in Jordan had high degrees of overall burnout. Those in the universities are employees who are managing workloads that include but are not confined to, teaching and administrative, research requirements and student support. Combination of these various roles puts the university employees in an exclusive situation in terms of work-related stress, which can further make them more susceptible to burnout.

The emergence of digital work and the growing popularity of digital fatigue, only exacerbate this issue. Digital exhaustion, also known as tech exhaustion or Zoom exhaustion is a state of mental and emotional exhaustion caused by prolonged use of digital content (Beyea et al., 2025; Jaiswal et al., 2019; Sarangal and Nargotra, 2022). There is empirical evidence that excessive exposure to digital devices leads to stress, decreased well-being, and lowered ability to

respond to work demands (Wang and Yao, 2025). More recently, especially after the COVID-19 pandemic, there was a sudden and near-total change in the work of university staff members to online education and collaboration with each other because universities went completely online, switching to fully online communication, teaching and remote work. This is flexible but may erase work-life boundaries and help to develop an always-on work culture, which adds to employee stress (Baurai et al., 2025). Though universities have mostly reverted to face-to-face delivery, the resultant greater dependence on digital tools has remained, which has led to continued digital pressure and burnout.

Expanding on this, there is emerging empirical evidence indicating a direct relationship between digital fatigue with burnout. In the educational field and other remote working environments, those who have been exposed to digital devices over a long period of time show increased emotional exhaustion and disengagement. This amount of digital interaction compounds the effects of cognitive load over time because of the overload of notifications, burnout, and discontinuous workflows (Kurniawan et al., 2024; Romero-Rodriguez et al., 2023). Although the relationship between workload and burnout has been established, past studies have indicated that the phenomenon has been found to have different magnitudes in various settings, implying that other variables might contribute to its magnitude.

Nevertheless, despite the fact that digital fatigue as a stressor has been studied, there is a lack of research that specifically focused on testing the role of digital fatigue as a moderating variable between workload and burnout. This disconnect is more pronounced in the academic work setting where digital demands have become thorough parts of everyday work practices. Theoretically, based on the Job Demands Resources (JD-R) model and Conservation of Resources (COR) theory, it is hypothesized that the interplay of high job demands, and resource depletion increases the negative effects, including burnout.

This paper fills this gap by considering digital fatigue as a moderating factor in the workload-burnout relationship among university employees in Jordan. The study introduces a more detailed and holistic view of the relationship between traditional and digital job demands and burnout by inputting the concept of digital fatigue into the workload burnout model.

2. Literature Review and Theoretical Framework

Workload and employee burnout

The role of employee workload in the emergence of burnout is crucial and well-known as one of the main antecedents of burnout in an organizational context. Burnout is also defined as emotional exhaustion, cynicism, and decreased professional functioning that is due to the imbalance between job demand and an individual ability to cope with it. Among them, emotional exhaustion is viewed as a central element and is especially susceptible to overworking. As an example, cognitive and emotional resources are quickly exhausted when employees are exposed to a chronic time pressure or overwhelming responsibilities (Özdemir and Demir, 2019).

Theoretically, the correlation between workload and burnout may be explained in terms of the Job Demands- Resources (JD-R) model. This model states that job demands are associated with prolonged physical and mental exertion, which drains resources of employees and predisposes them to burnout (Bakker and Demerouti, 2017; Hadjri et al., 2025). According to this theoretical point of view, employees who are subjected to high work levels are continuously at a higher risk of emotional burnout and long-term stress.

This theoretical mechanism has been heavily supported by empirical studies in various occupational situations. As an illustration, faculty members who believe that their workload is high (because of teaching, research, and administration) report much higher rates of emotional exhaustion than faculty members who report lower demands (Bakker et al., 2023; Nicholls et al., 2022).

Equivalent evidence has been also recorded in Middle Eastern settings and this further attests the connection of high workload and high levels of burnout. In a study by Asfahani (2024), job-related demands are a strong predictor of burnout in faculty members of higher education institutions in Saudi Arabia, especially regarding emotional exhaustion. Similarly, a study conducted among the employees of Jordanian hospitals of the general population showed that role overload is closely related to an increased level of burnout (Al'Ararah et al., 2024). Moreover, nurses in Jordan are characterized by high burnout caused by work overload and work-life imbalance (Abuhammad et al., 2025).

Moreover, longitudinal studies indicate the accruing nature of workload over a period of time. Excessive pressure at work has been observed to gradually build up emotional exhaustion, with Zinke et al. (2024) discovering that information and communication technology (ICT)-related workload were a strong predictor of burnout at various points in time.

Digital fatigue: Nature, antecedents, and consequences

As a result of increased use of digital channels for communication amongst colleagues, workers are using more digital channels for group communications, participating in more virtual meetings (via the Internet), and consuming more information via the internet than ever before. Digital fatigue is a term that may be used to describe an individual's state of cognitive and emotional exhaustion due to experiencing prolonged exposure to digital resources (e.g., e-mail, social media, etc.), being constantly available on-line, and spending more time in front of a computer or another display device. The symptoms of digital fatigue include cognitive overload, inability to concentrate, irritability/lower motivation, and an overall feeling of fatigue associated with ongoing demands from digital resources. Digital fatigue comes from multiple sources. Cognitive overload is the first factor that employees experience when processing volumes of digital data (Rahmi et al., 2025; Supriyadi et al., 2025), moving between multiple platforms and multitasking with multiple activities.

Ongoing research demonstrates a relationship between "digital fatigue" and its adverse effects on one's physical and mental health, as well as on their ability to perform tasks in both an educational and occupational setting. Studies conducted within the educational and professional environments as well support this link between digital fatigue with decreased attention, increased feelings of emotional/exhaustion, and low levels of engagement with work/studies (Supriyadi et al., 2025; Zhang & Deng, 2025). Findings from several recent studies suggest a direct correlation between digital fatigue and burnout. For example, Hadjri et al. (2025) found that employees who experienced higher levels of digital fatigue also experienced significantly more burnout than employees who did not report experiencing digital fatigue, while similar patterns were observed by Baurai et al. (2025) among those working

remotely or in a digitally intensive work environment.

The concept of digital fatigue is particularly salient to the world of higher education, as the process of digital transformation has increased the speed at which technology is adopted and used. University employees regularly engage with learning management systems and electronic grading, virtual meetings, and communication across multiple digital platforms, which raises cognitive load and reduces one's opportunity for psychological detachment. We view digital fatigue as a fixture of academic work that can directly impact burnout; digital fatigue may influence traditional job demands to reinforce an employee's experience of burnout even when work demands remain unchanged.

Digital fatigue and its moderating role between workload and burnout

While workload is one of the most consistently recognized predictors of burnout, modern work contexts are increasingly exposing employees to digital demands that may change how workload is experienced. Within the context of the Job Demands-Resources (JD-R) model, some scholars argue that demands for work deplete workers' emotional and cognitive resources over time, leading, in phases, to emotional exhaustion and burnout of particular significance when demands are chronic and prolonged (Bakker & Demerouti, 2017; Bakker et al., 2023). Simultaneously, some research has more recently identified digital fatigue as an alternate form of strain rooted in prolonged periods of intensive digital focus, constant connectivity, and overload of information. Digital fatigue has been shown to independently predict emotional exhaustion, diminished levels of concentration, and lower levels of well-being across sectors (Supriyadi et al., 2025; Zhang & Deng, 2025).

While these two streams of research are developing in parallel, the majority of studies address workload (and digital fatigue) as separate notions, leaving questions to address how digital fatigue may shape the established workload–burnout relationship. As noted, much of the research has considered digital fatigue to be a stand-alone predictor of burnout and well-being impairments (Hadjri et al., 2025; Supriyadi et al., 2025).

Theoretical frameworks indicate that fatigue may be viewed as a "risk amplifier" instead of simply acting as a correlational source of stress. The Conservation of

Resources (COR) perspective indicates that those who experience digital fatigue have a reduced amount of energy, focus, and emotions. The introduction of additional demands due to the depletion of a person's resource pool (energy, focus, and emotion) will mean that these demands will have a greater impact (more taxing) and will therefore accelerate the fatigue process. The JD-R Model acknowledges that job demands interact with one another, and that people will respond to simultaneous demands (regardless of whether they are from direct or digital experiences) with more significant strain than when responding to single stressors.

A number of studies have investigated how increased load on ICTs may exacerbate the interaction between the demands of the job and this state of emotional exhaustion. Studies like those of Zinke and colleagues (2024) have documented the effect of increased workloads from ICTs on emotional exhaustion in the workplace due to the demands of these new digital technologies. With regard to the impact of digital fatigue on employee role overload, Hadjri et al. (2025) have shown that there is a relationship between digital fatigue and increased adverse impact of role overload on the well-being of employees.

Conceptual model and hypotheses development

Based on the literature, the present study provides a conceptual framework relating the workload to employee burnout, and digital fatigue is a moderating factor in a relationship between workload and burnout. The conceptualization of workload is one of the main job demands in Job Demands Resources (JD-R) model and involves the need to work hard over the long-term, which is psychological and emotionally demanding and depletes employees' resources, eventually resulting in exhaustion and burnout. In this context, digital fatigue may be conceptualized as a strain that can be caused by a long-lasting digital interaction, which can contribute to an increase in the employee's response to the work requirements.

The conceptual model (Figure 1) proposed shows the direct correlation between workload and burnout and the moderating effect of digital fatigue on the workload and burnout relationship. Our hypothesis is that workload will be a positive predictor of burnout due to a significant amount of empirical data that indicates its influence on the growth of exhaustion and strain. Above all, the

digital fatigue will likely moderate the workload-burnout association by enhancing the adverse workload impact. In particular, under the conditions of high workload, the employees who have more digital fatigue are more likely to respond to burnout than the employees who have less digital fatigue do.

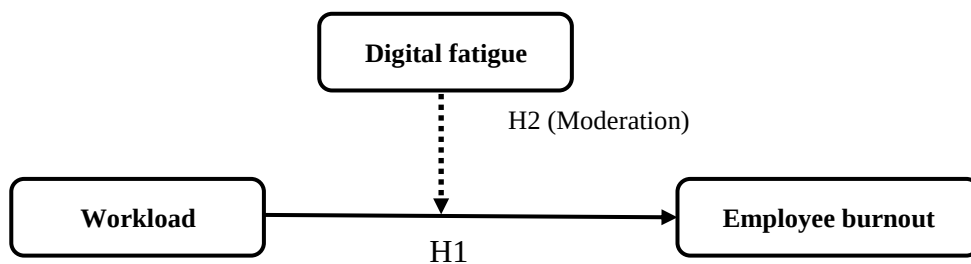


Figure 1. Conceptual Model

Accordingly, the study advances the following hypotheses:

- H1. Workload is positively related to employee burnout.
- H2. Digital fatigue moderates the relationship between workload and burnout in such a way that the relationship will be stronger when Digital fatigue is high than when it is low.

This framework lays the foundation for the empirical examination presented in the methodology section.

3. Methodology

a) Research design

This study adopted a quantitative and cross-sectional survey design to determine the connections between workload, digital fatigue and burnout. A cross-sectional design is characterized by the collection of data at a single point in time about a sample of participants and can be utilized to test a correlation and moderation hypothesis in a reasonably efficient way. Although cross-sectional data is not suitable when trying to make causal conclusions, it is a typical method of measuring relations between variables when conducting preliminary research

(Bryman, 2016). The choice of the survey design was most appropriate due to the researchers' goal of employing self-reported perceptions of workload, fatigue, and burnout among a wide selection of university employees.

b) Sample and data collection

This study includes all the employees of institutions of higher education within Jordan; both academic staff (professors, associate professors, assistant professors, lecturers) and administrative staff. This target group was chosen because the number of work requirements in the higher education industry is on the rise with the digital transformation.

Since the study had practical and logistical limitations, such as the need to reach every university in Jordan, a sample based on three universities was used. The selection of these institutions was done intentionally so as to represent the various types of institutions e.g. one of the institutions was a public university and the other two were private universities. This sampling contributes to the generalizability of the results because it helps to reflect the differences in organizational structure, workload allocation, and digital workplace in various higher education settings.

The involved universities have remained anonymous as per the ethical standards of research and to keep the respondents and institutions confidential. This anonymity is usually a typical part of organizational studies, especially when the research is on sensitive issues like the workload and burnout.

The sampling method was stratified random sampling in each university to make sure that both the academic and administrative staff will be fairly represented. The sampling frame was developed on the list of employees that was thoroughly furnished by the human resource department of the institutions under the study. Invitations of the survey were made electronically via institutional email services and reinforced by professional academic networks to enhance response rates.

The information was collected using a structured online questionnaire that was administered using Google Forms. The data collection was planned between June and August 2025, the time was chosen intentionally to coincide with the academic summer holiday when the majority of employees have less teaching and

administration work to complete; thus, able to complete the questionnaire.

To ensure that responses were complete and valid, data collection was monitored continuously. Based on Survey Research opportunities (DeVellis, 2021), invalid entries were identified, which included partially completed questionnaires, patterned answers, or unrealistically short questionnaire completion time. In order to collect sufficient data to conduct the planned tests of regression, data collection was terminated once 300 valid and analyzable responses were obtained which is far greater than the minimum statistical requirement of moderation analysis.

c) Measurement instruments

The data were collected using a structured questionnaire that provided the standardized scales to measure the key constructs and some demographic and controls associated with work (e.g., age, gender, job role, and tenure). All questions were answered on a five-point Likert-type scale (1= strongly disagree/ never, 5= strongly agree/always) and high scores were subsequently associated with high scores on the underlying construct.

Even though it included both academic and administrative staff, all the constructs involved in this study are operationalized in a role-neutral way, centered on the subjective experiences of employees (e.g., perceived work pressure, effort, and fatigue), but not the job-related tasks. This methodology aligns with other existing studies on occupational stress, and it can be meaningfully compared across job positions.

In line with this strategy, the workload was measured through a modified version of the Quantitative Workload Inventory (QWI) of Spector and Jex (1998) and was made up of six items, which reflected perceived workload, such as general experiences of job demands, time pressure, mental effort, task intensity, and pace of work (e.g., I have to work very hard to meet all my responsibilities). The QWI is a validated and popular measure of occupational stress (Spector et al., 2000) and has been used in a variety of occupational settings. Notably, the items measure subjective perception of workload and not occupation-specific tasks, and therefore the scale can be used with both academic and administrative staff although they may have different job content.

A set of nine items determined digital fatigue through past studies on technostress

and digital exhaustion (Ayyagari et al., 2011; Salanova et al., 2013; Tarafdar et al., 2007). The questions were cognitive, emotional, physical measures of fatigue with the use of digital tools (e.g. "Constant digital interactions in the workplace make me feel exhausted). Respondents reported the frequency of the occurrence of each symptom.

A nine-item abbreviated version of the Burnout Assessment Tool (BAT) created by Schaufeli et al. (2020) was used to measure the level of burnout among the study participants. This is a modern instrument that is regarded as a benchmark of burnout, as the measure of the phenomenon in four dimensions: feeling consumed, work-related detachment or burnout, lack of arousal, and emotional impact. Other words that are related to burnout include exhausting statements, psychological exhaustion in workplace and job fatigue. This instrument fits the modern definition of burnout and is a part of the definition provided by the World Health Organization (2019). The literature also considers it a more contemporary and systematic substitute of several conventional measures like the Maslach Burnout Inventory.

Respondents gave their age, gender, and role (faculty or administrative). These demographic variables were considered as control variables in the analysis because they could affect employee burnout as confirmed by previous studies in the literature of occupational stress. Adjusting to these prevents the relationships among the main study variables to be estimated more accurately by minimizing potential confounding effects.

Moreover, there were preliminary analyses to determine whether there were significant differences in burnout between demographic groups. The findings showed that there were no statistically significant differences. Thus, these variables were not handled as a primary analytical variable but rather they were kept as a control variable in the regression models to increase the strength and internal validity of the results.

Work pattern, employment length and average time per day working on screens were also initially factored in the potential control variables but they are no longer featured in the final regression models since they were not significantly correlated with burnout during initial analyses.

To achieve conceptual equivalency, all items in the scale were first translated into Arabic, and then translated back to English with the use of Brislin (1986)

methodology. All participants were given the opportunity to respond in Arabic and English and it was observed that participants preferred a language.

d) Data analysis methods

The data were analyzed with SPSS and the Hayes PROCESS macro (Model 1) for hypothesis testing. Each hypothesis was tested after determining whether it met criteria for normality via skewness and kurtosis, assessing the internal consistency of the measures with Cronbach's alpha, and confirming construct validity with a confirmatory factor analysis (CFA) in AMOS of the measurement model consisting of three factors. When estimating maximum likelihood in AMOS, CFA results indicated adequate fit for the model and provided support for both convergent and discriminant validity.

After establishing the validity for the measurement model, descriptive statistics and bivariate correlations were conducted in order to provide a preliminary overview of the relationships between the variables. Hierarchical multiple regression was conducted in three steps: (1) demographic control variables (age, gender, and job role) were entered to account for their potential influence on burnout, (2) adding the centered main predictors (workload and digital fatigue), and (3) entering the interaction term. The workload and digital fatigue variables were mean centered to minimize multicollinearity prior to constructing the interaction term. It was concluded from the regression diagnostics that the assumptions of normality, homoscedasticity, and multicollinearity were upheld. Simple slopes and the Johnson–Neyman method (within PROCESS) were utilized to further examine significant interactions in terms of the significance regions adjusting for levels of digital fatigue.

4. Results

4.1. Respondent profile

A total of 300 university faculty and staff participated in this survey; 55% of respondents were in academic capacities while 45% worked in administrative positions. Ages ranged from 25 to 60 years with an average age of 40.38 (sd = 9.89), which represents employees across a range of their career, i.e., early, mid,

and senior career periods. Average organizational tenure (time spent working for the organization) was around 9.46 years ($sd = 6.35$), with employees having been employed anywhere between 1 year to as long as 29 years. Thus, the data collected indicates the representation of both new and seasoned employees within this research. In terms of work arrangement, the majority of respondents 64.7% worked on-site, while 34.3% worked in a hybrid way (some on-site work, some remote), and only 1.0% worked completely remotely. This demonstrates that most of the participants worked on campus either fully or somewhat part of the time. Moreover, on average, participants reported spending approximately 6.5 hours per day ($SD \approx 1$ hour) on computer or screen work tasks. This notable screen time experience across the day is also notable with respect to digital fatigue in this population as nearly all of the respondents engaged with technology to be productive in their work.

4.2. Measurement validity and reliability assessment

To ensure the quality of the data, several preliminary tests were conducted. First, to mitigate the possible influence of nonresponse bias, early and late respondents were compared on key demographic characteristics as well as the study variables of interest; late respondents served as a proxy for nonrespondents (Groves, 2006). Since no statistically significant differences were found between early and late respondents, nonresponse bias was not considered a threat to data quality.

In addition, the normality of the data was assessed to ensure its suitability for parametric analyses. The skewness statistics ranged from -0.18 to 0.20 , and the kurtosis values ranged from -0.81 to -0.57 , all of which fall within acceptable thresholds, indicating that the data were approximately normally distributed.

Regarding measurement quality, both validity and reliability were assessed using multiple approaches. Face validity was ensured through careful review of the clarity, wording, and relevance of the questionnaire items. Content validity was supported by the use of well-established and previously validated measurement scales drawn from prior literature, ensuring adequate coverage of the constructs under investigation.

As shown in Table 1, all measures demonstrated strong reliability, with Cronbach's alpha values exceeding the recommended threshold of 0.70. Although

very high alpha values (above .90) may sometimes indicate item redundancy (Tavakol & Dennick, 2011), in this study they reflect a high level of internal consistency among the items, supported by rigorous data screening procedures.

Construct validity was assessed using confirmatory factor analysis (CFA) with AMOS. The results (Table 1) indicate that the proposed three-factor model demonstrated an adequate fit to the data ($\chi^2 = 641.335$, $df = 249$, $p < .001$; $\chi^2/df = 2.576$; CFI = 0.930; TLI = 0.922; RMSEA = 0.073). Although the RMSEA value slightly exceeds the ideal threshold, the overall pattern of fit indices supports an acceptable measurement model fit (Kline, 2023).

All standardized factor loadings exceeded the recommended threshold of 0.60 (Hair et al., 2014), providing strong evidence of convergent validity. In addition, composite reliability (CR) values ranged between .937 and .943, and average variance extracted (AVE) values ranged between .640 and .698, all exceeding recommended thresholds, further supporting the convergent validity of the constructs.

Discriminant validity was also established, as the correlations among latent constructs were below the critical threshold of 0.85 (Brown, 2015; Kline, 2023), indicating that the constructs are empirically distinct despite their theoretical relatedness. Overall, these results provide strong evidence supporting the reliability and validity of the measurement model.

Table 1. Confirmatory factor analysis results and convergent validity

Construct	Item	Loading	AVE	CR	α
Workload	WL1	.820	0.698	0.937	.928
	WL2	.853			
	WL3	.866			
	WL4	.832			
	WL5	.822			
	WL6	.792			
Digital Fatigue	DF1	.681	0.651	0.943	.939
	DF2	.749			
	DF3	.822			
	DF4	.879			
	DF5	.833			

Construct	Item	Loading	AVE	CR	α
	DF6	.867			
	DF7	.774			
	DF8	.775			
	DF9	.784			
Burnout	BO1	.749	0.640	0.938	.936
	BO2	.819			
	BO3	.785			
	BO4	.765			
	BO5	.700			
	BO6	.745			
	BO7	.817			
	BO8	.822			
	BO9	.888			

4.3. Descriptive statistics

Table 2 summarizes the descriptive statistics for the three critical variables in the study, workload, digital fatigue, and burnout. The mean workload was 3.41 (SD = 0.79) on a 1–5 scale, indicating that on average, the sample experienced a moderate-to-high workload. The mean digital fatigue was 3.21 (SD = 0.74), representative of a moderate level of digital fatigue in the sample. Lastly, the mean burnout was 2.95 (SD = 0.70), slightly below the midpoint on the scale. Overall, these descriptive findings suggest that the sample experiences, on average, above midpoint on workload and digital fatigue, and moderate burnout. The descriptive findings substantiate further analysis of the relationships among the variables studied.

Table 2. Descriptive statistics, reliability, and correlations (N = 300)

Variable	Items	Mean (SD)	WL	DF	BO
Workload (WL)	6	3.41 (0.79)	1.00		
Digital Fatigue (DF)	9	3.21 (0.74)	0.20**	1.00	
Burnout (BO)	9	2.95 (0.70)	0.47**	0.37**	1.00

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Due to the nature of the data, we examined group differences in burnout across key demographic categories, including job role (academic vs. administrative staff), prior to conducting hypotheses testing. The results indicated that there were no statistically significant differences in burnout levels between the two groups, suggesting that the observed relationships are not driven by structural differences in job type. This finding is consistent with the conceptualization of the study variables—particularly workload—as perceived, role-neutral constructs.

Nevertheless, as age, gender, and job role have been examined in prior research and represent important characteristics of the sample, these variables were included as control variables in the regression models to ensure robustness and consistency with the literature.

Zero-order correlations where all correlation coefficients exhibited a positive association with burnout and were statistically significant. Workload was positively correlated with burnout at a moderate level ($r = 0.47, p < .01$), thus, offering preliminary support to Hypothesis 1. Digital fatigue was positively correlated with burnout ($r = 0.37, p < .01$). Workload and digital fatigue were moderately correlated ($r = 0.20, p < .01$), suggesting a degree of overlap, but not enough to suggest redundancy, which is an important consideration for moderation analysis.

4.4. Hierarchical regression analysis

The direct effects of workload on burnout (H1) were examined in SPSS using hierarchical multiple regression. Load and digital fatigue were both mean-centered prior to creating the interaction term (Load x Digital Fatigue) as recommended. Centering helps reduce multicollinearity and gives a more straightforward interpretation of the intercept.

Hierarchical regression results are presented in Table 3. In the table, we reported key statistics such as unstandardized coefficients b for each of the variables, R^2 , and ΔR^2 for each step. The regression analysis was conducted sequentially, and Step 1 involved entering age, gender, and job role as control variables in the model to account for any differences in burnout at baseline demographic status. As anticipated from the preceding analyses, these three control variables explained a small proportion of the variance in burnout ($R^2 = .020$), and the change in R^2 was not considered statistically significant ($p = .110$). Step 2

directly tests H1 in a regression context by introducing the centered main effects of workload and digital fatigue into the model. The model improved dramatically, with R^2 increasing to .316 ($\Delta R^2 = .295$, $p < .001$). Both predictors were robust and statistically significant: workload ($b = 0.365$, $p < .001$) and digital fatigue ($b = 0.268$, $p < .001$), supporting H1. Interestingly, gender emerged as marginally significant in Step 2 ($b = 0.145$, $p = .044$) with possible interpretation that men reported slightly higher levels of burnout than women, after accounting for workload and digital fatigue, despite the authors not predicting this. There was little evidence to suggest multicollinearity was an issue with VIF values around 1.04.

Table 3. Hierarchical regression of workload, digital fatigue, and their interaction

Predictor	Step 1	Step 2	Step 3
Controls:			
Age	$b = -.004$ (n.s.)	$b = -.006$ (n.s.)	$b = -.006$ (n.s.)
Gender	$b = 0.152$ (n.s.)	$b = 0.145$ *	$b = 0.141$ *
Role	$b = 0.131$ (n.s.)	$b = 0.125$ (n.s.)	$b = 0.114$ (n.s.)
Main Effects:	–	–	–
Workload (centered)	–	$b = 0.365$ ***	$b = 0.329$ ***
Digital Fatigue (centered)	–	$b = 0.268$ ***	$b = 0.254$ ***
Interaction:	–	–	–
Workload $\times$ Digital Fatigue	–	–	$b = 0.149$ **
Model R^2	0.020	0.316	0.331
ΔR^2	0.020 (n.s.)	0.295 ***	0.016 **
F for model	$F(3, 296) = 2.03$ (n.s.)	$F(5, 294) = 27.11$ ***	$F(6, 293) = 24.17$ ***

Note. Gender coded as 1 = male; Role coded as 1 = faculty. n.s. = not significant.

Step 3 tested H2 with the interaction term "Workload $\times$ Digital Fatigue." The most recent regression model shows that it accounted for $R^2 = .331$ of total variance in burnout. This provides evidence of a small but statistically significant difference in the scores for burnout, as indicated by the difference in the model fit statistic ($\Delta R^2 = 0.016$, $p = .010$). The coefficient for the term representing the interaction between the workload independent variable and the digital fatigue

moderating variable is positive ($b = 0.149$, $SE = 0.057$, $p = .010$). This indicates that the effect of workload on burnout will vary based on an individual's level of digital fatigue. The final regression model is also statistically significant ($F(6, 293) = 24.17$, $p < .001$). Diagnostics were run to evaluate whether the assumptions of regression were met; specifically, the residuals were normally distributed, the homoscedasticity assumption was satisfied, and there was no evidence of multicollinearity (all intercorrelations $< .50$, $VIF < 1.1$).

To further explore the hypothesis of moderation, we used Hayes' PROCESS macro (Model 1) to investigate burnout as the dependent variable, workload as the independent variable, and digital fatigue as a moderating variable, controlling for the age, gender and role of employees (Hayes, 2024). The results of the regression analysis provided support for the hypothesis that the relationship between workload and burnout is influenced by the levels of digital fatigue employees experience, as indicated by the significant interaction (index of moderation = 0.149, $SE = 0.058$, $p = .010$). To gain a better understanding of the moderation effect, the researchers examined the conditional effects of workload on burnout at different levels of digital fatigue (-1 SD, mean, and +1 SD) to determine the different slopes of the regression lines (see Table 4 for estimates of these results).

Table 4. Conditional effects of workload on burnout at levels of digital fatigue

Digital Fatigue Level	Effect of Workload on Burnout (b)	SE	t	p
(-1 SD) low	.219	.071	3.09	.002
(0 SD) mean	.329	.045	7.25	< .001
(+1 SD) high	.440	.052	8.46	< .001
<i>Note.</i> Conditional effects estimated using Hayes' PROCESS macro (Model 1), with burnout as the outcome, workload as the predictor, and digital fatigue as the moderator, controlling for age, gender, and role. SD = standard deviation.				

Table 4 (Conditional Effects) provides a representation of the moderation effect of digital fatigue. The results indicate that the strength of the relationship between workload and burnout varies across different levels of digital fatigue. The association is strongest at high levels of digital fatigue (+1 SD; $\beta = 0.440$, $p <$

0.001) and weakest at low levels (-1 SD; $\beta = 0.219$, $p = 0.002$). This pattern suggests that digital fatigue strengthens the positive relationship between workload and burnout.

The simple slopes analysis further supports this finding. As illustrated in Figure 2, the slope representing high levels of digital fatigue (+1 SD; orange) is steeper, indicating that burnout increases more sharply with workload under conditions of high digital fatigue. In contrast, the slope for low levels of digital fatigue (-1 SD; blue) is flatter, suggesting a weaker relationship between workload and burnout. These findings confirm that digital fatigue amplifies the effect of workload on burnout.

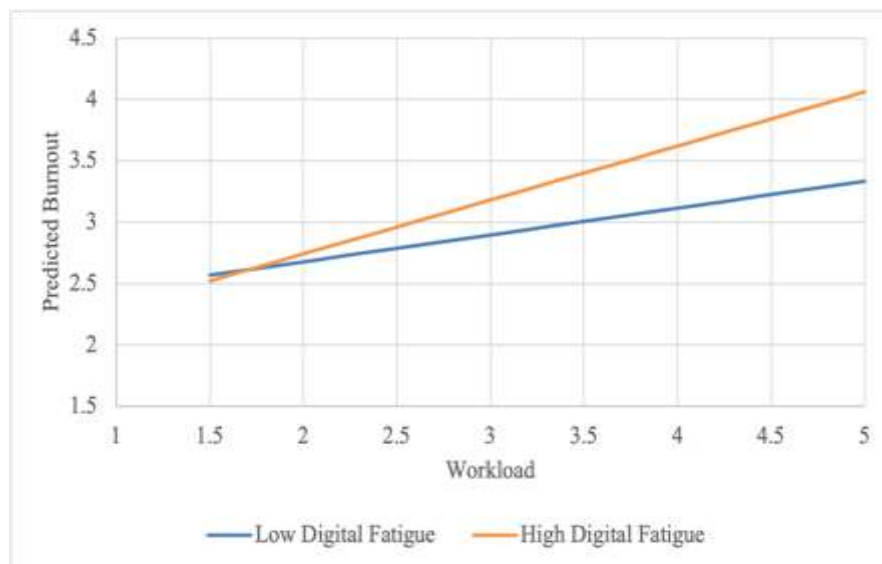


Figure 2. Interaction between workload and digital fatigue predicting burnout

Using the PROCESS program, we confirmed the above patterns through POST-HOC conditional effects probing. There was a significant and stronger association between workload and burnout at elevated levels of digital fatigue compared to all other levels of digital fatigue. The Johnson-Neyman analysis (Hayes, 2024) revealed that no regions of nonsignificance existed within the observed data set which suggests a substantively positive and significant connection between workload and burnout exists across levels of “digital fatigue”. In conclusion, the results indicate that digital

fatigue amplifies the already negative correlation between workload and burnout by generating even greater amounts of employee burnout when both the employee is subjected to a high level of workload and a high-level digital fatigue at the same time.

5. Discussion

The results of this research prove that both conventional workload and digital fatigue are important factors that cause employee burnout in academic environments. In line with Job Demands Resources (JD-R) model, high job demands exhaust the psychological resources of employees, thus raising the chances of burnout. This finding is consistent with previous studies, in which workload was repeatedly cited as a solid predictor of emotional exhaustion in academic employees (e.g., Özdemir & Demir, 2022; Asfahani, 2024).

Alongside the conventional workload, the results reveal that digital fatigue is an independent predictor of burnout, which is indicative of the changing character of work stressors in digitally intensive workplaces. This is in line with the recent research on technostress that indicates that continuous digital interaction, mental overload, and disrupted communication cause psychological stress (Shetty et al., 2025; Rahmi et al., 2025). These results support the opinion that the digital fatigue is already the established and yet influential requirement in the contemporary academic working conditions.

More significantly, this research adds to the current sources by showing the moderating nature of digital fatigue on workload and burnout relationship. The findings indicate that the effects of workload on burnout are much more pronounced in the presence of high degrees of digital fatigue. This observation is in agreement with the Conservation of Resources (COR) theory, a theory that states that individuals whose cognitive and emotional resources are exhausted are more susceptible to further demands. The same arguments can be proposed based on the recent studies that highlight the cumulative and compounding quality of workplace stressors (Zinke et al., 2024; Hadjri et al., 2025).

The findings also add to the refinement of the JD-R model as they demonstrate that not all the moderators can be viewed as buffering resources. Rather, some job requirements, like digital fatigue, can increase the adverse impact of other requirements. This underscores the interactive and synergistic essence of stressors

within the modern workplace, especially institutions that have digitally transformed.

Lastly, the applicability of these findings to the context of Jordanian universities is apparent because within the recent years these universities have been rapidly digitalizing. According to previous regional investigations, the extent of exhaustion linked to digital workload and the lack of adaptation to online systems were on the rise (Mosleh et al., 2022; Jabali et al., 2025). The present results are based on the existing evidence, which indicates that digital fatigue is a structural and endemic issue in institutions of higher learning in the area.

6. Conclusions

This paper offers information that both conventional workload and digital fatigue are important factors that determine burnout among the employees at the university. More to the point, it shows that digital fatigue magnifies the effect of workload, which underscores the synergistic effect of contemporary work stressors.

The study makes a contribution to the literature extending the JD-R and COR frameworks, as it demonstrates that some job demands can act as amplifiers, rather than simply as additive stressors. This provides a more in-depth insight into burnout in digitally intensive workplaces.

Practically, the results propose that burnout should be dealt with in a twofold manner. Universities must also cope with workload but also proactively alleviate causes of digital fatigue, through better communication practices, reduction of needless digital demands, and better support systems.

Although this study has made contributions, it has limitations such as cross-sectional design and use of self-reported information. It is recommended that future studies should be longitudinal or mixed-method and consider other contextual variables that can affect the dynamics of burnout in digital work environments.

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