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### Article title

**The Hidden Cost of Connectivity: Examining the Impact of Off-Hours Work-Related Social Media Usage on Employee Exhaustion through Work-Family Conflict**

### Abstract

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**Keywords:** Work-Related Social Media Usage, Off-Hours Digital Connectivity, Job Demands-Resources Model, Work-Family Conflict, Employee Engagement, Exhaustion, Boundary Theory, Digital Job Demands.

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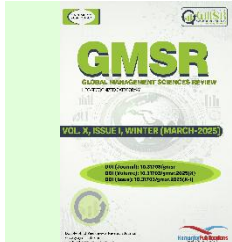
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*The increasing digitalization of work has intensified expectations of constant employee availability, extending job demands beyond formal working hours through work-related social media use. Drawing on the Job Demands–Resources (JD–R) model and Boundary Theory, this study examines the direct and indirect effects of off-hours work-related social media use on employee engagement and exhaustion, with work–family conflict as a mediating mechanism. Using a quantitative cross-sectional design, data were collected from 430 lecturers and professors in public and private universities in Rawalpindi–Islamabad, Pakistan. Structural equation modeling using SmartPLS shows that off-hours work-related social media use is positively associated with both engagement and exhaustion, reflecting its dual motivational and strain-inducing role. Furthermore, work–family conflict partially mediates these relationships by weakening engagement and intensifying exhaustion. The findings underscore the need for organizations to manage “always-on” digital expectations to safeguard employee well-being.*

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## Introduction

The atmosphere of digitization in current work life has redefined the way employees perceive time, space and role boundaries. With the unprecedented information and communication technologies (ICTs) and social media development., employees and organizations are increasingly interconnected, which broadens work beyond formal time-space boundaries by offering around-the-clock accessibility (April Yue,

2022; F. Wang & Li, 2023). Social media has evolved from a strictly situational to-cognitive break, information sharing and engagement platform to an organizational infrastructure for employees to coordinate responsive, intelligent and innovative action, information exchange, stakeholder interaction and building organizational identity. The consequence is that there are no longer any clear limitations on employees' availability.



In the changing work environment, work-related social media usage involves employee's use of platforms such as WhatsApp, Facebook Instagram and LinkedIn for job purposes outside of working hours. As opposed to conventional email, social media is known for its real-time nature, transparency, social embeddedness and informal rules of communication. Such features enhance attentional load and increase perceived social pressure to be available, even when off work (Y. Sun et al., 2021). Previous work has indicated that this constant connectivity diminishes psychological boundaries between the working and personal life domains (Andrade & Matias, 2022), thus shaping employees' daily recovery processes and role permeability.

Job demands resources model portrays that there is a correlation between job demands and resources., using social media for work during leisure time is a specific job demand which incurs an ongoing cognitive, emotional and behavior resource investment. Empirical findings have been produced to suggest that social employee engagement can be positively linked to media use of the type of communication in the workplace, which could lead to perceived connection and participation in organization activities (F. Wang & Li, 2023). Concomitantly, long-term exposure to work-related communication during nonworking hours restricts opportunities for psychological distance and recovery promoting strain and conflict with family (van Zoonen et al., 2017). Recent research also shows how instant messaging systems create ongoing micro interruptions that are like compound interest on time and lead to significant resource depletion and increased likelihood of fatigue (Fang et al., 2024). Together, these trends highlight the importance of considering off-duty stem work social media use as an issue of both theoretical and practical consequence to job demands in today's organizations.

## Problem Statement

The key is the paradox of the use of social media in work-related activities. On the other, digital connectivity leads to faster and more efficient information flow, coordination and responsiveness, leading to higher organizational efficiency as well as potentially increased employee engagement (April Yue, 2022). At the same time, this heightened connectivity functions as a digital leash, constraining employees' autonomy over their time and attention and intensifying work-related pressures, particularly in balancing professional responsibilities with family life and personal space.

This article discusses the importance of job exhaustion as a central process by which after-hours work connectivity is linked to a number of off-hours outcomes. Tiredness is viewed as reduction of physical and mental resources occurring from excessive exertion and inadequate recovery. Instead of being a phenomenon at the level of a general burnout construct, exhaustion represents an immediate and proximal health impairment process (loss process). It's the social media high that demolishes exhaustion, because it creates a growing sense of having to be available at all hours (Y. Sun et al., 2021) and is responsible for the breakdown of people's ability to distinguish between one's natural inclination toward participation and being in demand (Ibid).

In fact, it has been proven that work during non-work time through social media is linked with emerging levels of work-family conflict and associated with the psychological detachment reduction and increased fatigue and stress. (Fang et al., 2024; Ryani et al., 2023). Since social media interaction is socially observable and relationally embedded, employees may feel increased obligation to respond, although implicitly, from an organization. This sustained attentional investment restricts possibilities for recovery, depleting resources further.

Even with the rising consciousness of digital stress, employers have normalized social media communication during off-hours to maintain flexibility and speed. The issue that this research addresses is the ambiguity in what off hours work-related social media use contributes to exhaustion via conflict between work and family, over and above general use of technology or afterhours email. This challenge must be overcome in order to provide evidence-based organizational policies that maintain employee well-being while capturing the benefits of digital platforms.

## Research Gap and Novelty

The existing literature on digital work connectivity has largely left out workplace stress as outcome or taken an all-encompassing approach to information and communication technologies, treating technological artefacts as if they were just one type of a single category. Some studies operationalize digital demands with general technology overload or after-hours email use, thus ignoring the specific social and temporal affordances of social media platforms (Si et al., 2023). Indeed, how off hours social media use impacts employee well-being, as mediated by

process variables, has been insufficiently theorized and empirically examined.

While the job demands resources framework represents a strong lens to understanding strain and motivation of employees, little research has directly theorized the social media use during off hours as a job demand. Previous research literature is often focused on disentangling engagement and exhaustion without adopting a simultaneous mediation model in the form of motivational and health impairment processes (Assefa et al., 2023). In addition, with regard to work family conflict, studies have focused on designing for the direction of interference without considering its role as an intervening factor between digital demands and employee outcomes (F. Wang & Li, 2023).

The novelty of this work is in three main contributions made to these limitations. First, it demarcates off hours work connected to social media use as a distinctive and quantifiable work demand, intense interaction, visibility (one is always on call), and time expansion. Second, it considers the relationship between engagement and exhaustion processes jointly to address recovering from as well as accumulating resources. Third, this study provides empirical evidence of work family conflict in three dimensions (i.e., time, behavior, and strain) as one of the mediators of the connection between after-hours social media use and employee results. As a result, this study extends the job demands resources model to better represent current digitally mediated work settings.

### Research Objectives and Questions

The main aim of this research is to analyse how the off-hours work associated with social media use affects employee exhaustion. The other secondary aim is to examine how work-family conflict mediates the relationships between work-related social media usage, exhaustion, and engagement.

The following are the research questions of the study.

- Does off-hours working and social media usage affect employee exhaustion and engagement?
- Does social media use during off-hours augment work-family conflict?
- Do off-hours work-related social media usage and employee exhaustion have a mediating variable with work-family conflict?
- Work-family conflict is a mediating variable between off-hours work-related social media usage and employee engagement.

### Significance of the Study

The study contributes theoretically by refining the job demands resources framework via recognizing off hours work related social media use to be a separable digital job demand and exhaustion as a proximal outcome of resource depletion. From a practical standpoint, it offers empirically informed advice for organizations interested in managing off hours connections and developing responsible communication norms. The findings have immediate implications for the design of right-to-disconnect policies and managerial norms reconciling responsiveness with employee recovery (Eurofound, 2023). By unpacking the processes through which social media use is associated with work family conflict, engagement and exhaustion this study may assist in promoting healthier and more sustainable digital working environments.

### Literature Review and Hypotheses Development

#### Theoretical Framework Job Demands Resources Model

The architectural model for understanding the impact of working conditions on well-being motivation and performance, by definition a conceptual model of work-related practices that influences the employees wefully and operationally as well as upsurge their motivation. According to the modern theories, job demands are outlined as the features of the job that demand resources by the employer which in this case are the efforts required (cognitive, emotional and physical) and cause strain related outcomes. Job resources are characterized by the job aspects that promote learning, goal attainment recovery and personal development, as well as shield against threatening influences of work requirements. (Demerouti et al., 2019; Bakker et al., 2023).

The model postulates two main psychological mechanisms. The mediation explains why job resources enhance work engagement and performance. The health impairment process, on the other hand, describes how too high or poorly controlled job demands deplete employees psychological and physical resources to the point that they feel fatigued strained and exhausted (Bakker et al., 2023). Thus, the literature has recently concluded that timing and permeability of job demands are important moderators between time pressure and strain.

In digitally connected work-context, researchers are gradually acknowledging off hours connectivity as a distinctive form of job demand. Digital work bleeds into personal life and detracts attention with



constant micro interruptions. Demerouti et al. (2019) contend that demands during non-work time are particularly detrimental as they inhibit psychological detachment and recovery. Work-related social media usage on a mobile device out of hours clearly falls well within this definition of a job demand. Response inhibition, attention monitoring and emotion regulation may be a prerequisite to scroll through social media for work communication after office hours. van Zoonen et al. (2017) showed that digitally enhanced work communication through social media increases boundary permeability, and perceived workload.

Recent theoretical extensions label after hours digital connectedness explicitly as an energy-demanding ‘paragon’ instead of a resource. Li (2025) introduced a more sophisticated JD R model that views digital connections as time contingent demand, which can generate overloading on the supply sides due to reduced recovery chances. This picture is confirmed by empirical evidence and suggests that off hours work communication is associated with exhaustion, sleep disruption, and strain rather than (sustained) engagement, which are consistent findings in the extant literature (Bakker et al., 2023; Fang et al., 2024). In line with this, the current research suggests that work related social media use in non-working time can be conceived of as a JD since it constitutes something required by the job that will have cognitive and emotional impact on employees' health.

### **Work Related Social Media Usage During Off Hours and Engagement**

Work related social media usage during off hours refers to the ways in which employees remain connected to work through social media platforms beyond formal working time. This may include checking work related updates, replying to messages, engaging in group discussions, or sharing information relevant to organizational activities (April Yue, 2022). Compared to traditional communication channels, social media allows for immediate interaction, greater visibility of communication, and continuous social exchange, all of which can strengthen employees sense of attachment to their work and organization.

From a motivational perspective, engaging with work related social media outside working hours can, in some situations, support employee engagement. When such use remains limited and manageable, it may enhance feelings of involvement, provide easier access to information, and reinforce organizational identification. April Yue (2022) observed that

maintaining digital contact with work during off hours can promote vigor, dedication, and absorption, particularly when employees view this engagement as personally meaningful and voluntarily chosen. Consistent with this view, F. Wang and Li (2023) reported that work related social media usage is more likely to be associated with higher engagement when employees perceive supportive organizational conditions.

The job demands resources framework offers a useful explanation for these effects by emphasizing the motivational role of job resources. Through social interaction and timely access to information, social media can function as a resource that energizes employees and supports engagement. As noted by van Zoonen et al. (2017), social media facilitates collaboration, knowledge sharing, and relationship building, which may enhance engagement when employees are able to regulate their work and non work boundaries effectively.

At the same time, emerging research suggests that these benefits are not guaranteed and depend on contextual factors such as autonomy and boundary control. When off hours connectivity is experienced as an obligation rather than a choice, its motivational value may decline. Nevertheless, consistent with the positive relationship proposed in the original framework, the hypothesis is the following.

H1 Work related social media usage during off hours is positively related to employee engagement

### **Work Related Social Media Usage During Off Hours and Exhaustion**

From the health impairment perspective of the JD R framework work related social media use during free time constitutes a job demand that drains an individual's psychological and emotional resources. Sustained connectivity disrupts recovery, maintains load of attention and increases demands for emotion regulation which result in exhaustion (Maslach et al., 2021).

Exhaustion is characterized by a physical and psychological collapse from chronic exposure to heavy work effort. It is the central consequence of the health impairment process in contemporary occupational health research. This lack of psychological detachment that comes from staying mentally plugged into work during off-hours leads to increased fatigue and emotional burnout among employees.

Recent empirical evidence is consistent with such a link. Fang et al. (2024) reported that work-related use

of social media during leisure time was strongly predictive of both exhaustion and burnout, partly because of its negative impact on recovery. Wu (2025) also found work-related social media contact during off-duty hours resulted in greater emotional exhaustion among EFL teachers through sustained attention and erosion of boundaries.

The underlying mechanisms for this association are based on attention depletion emotional labor and switching costs. It's a more mentally taxing effort to manage an image and maintain relationships in the fast-paced world of social media that can be emotionally draining. Subsequent interruptions continue to shatter attention, with accumulative resource depletion.

To this effect the hypothesis presented is the following.

H2 Work related social media usage during off hours is positively related to employee exhaustion

### Work Related Social Media Usage During Off Hours and Work Family Conflict

Work-family conflict is that work role demands hamper the meeting of family obligations. Current research increasingly conceives of WFC as being driven by TWC (time-based work conflict) and SKC (stress-based work conflict), especially in digitally connected work settings (Allen et al., 2020).

Social media usage for work purposes in off hours impinges on family life by taking up time, and generating cognitive and emotional tension. Time-conflict is one type of conflict based on time, where the time to respond to work-related communication compromises the amount of time available for family interaction. Strain induced conflict – this type of conflict arises when work communication stress spills over to the family life resulting in damaged role performance.

April Yue (2022) observed that social media collapses boundaries between work and family through its capacity for perpetual connection. F. Wang and Li (2023) empirically proved that using work-related social media extends availability expectations and further adds to the conflict between work family. van Zoonen et al. (2017), moreover demonstrated that the informal and relational character of social media also amplifies boundary work.

Empirical data confirm this conclusion in the recent past. Fang et al. (2024) Work related social media use during off working hours was positively linked to work family conflict which in its turn were positively linked to burnout. Time invasion and

emotional constraint of similar were also found to have the same effect by Wu (2025)..

Consequently the attempt to provide a hypothesis is as follows.

H3 The use of work related social media during off hours has a positive affiliation to work family conflict.

### Mediating the Role of Work Family Conflict among the Work Related Social Media Usage During the off Hours and the Engagement.

The work family conflict can kill employee engagement as it prevents the channeling of psychological resources toward work. Employees suffer guilt frustration and cognitive preoccupation between work and family demands that lower vigor dedication and absorption when experiencing persistent conflict between work and other interests (Maslach et al., 2021).

Empirical data show that the correlation between digital job demands and engagement outcomes takes place through work family conflict. F. Wang and Li (2023) discovered that, work family conflict conveyed the influence of a social media based work demand to lower engagement. Work intrusion into family life weakens motivational attachment that the employees have towards work.

Therefore in line with JD R framework or previous theoretical results the hypothesis below is proposed.

H4 Work family conflict mediates the relationship between work related social media usage during off hours and employee engagement

### Mediating Role of Work Family Conflict Between Work Related Social Media Usage During Off Hours and Exhaustion

Work family conflict is also a critical process by which the demands of off jobs jobs are converted into exhaustion. Continuous battle leads to emotional load cognitive load and decreased rest which hastens fatigue. Recent studies prove that work family conflict and exhaustion sleep disturbance and psychological distress are closely related (Allen et al., 2020).

Fang et al. (2024) showed that the relationship between burnout and off hours social media usage partly relied on the work family conflict. Wu (2025) also presented convergent evidence that conflict had propagated the impact of digital connectivity to exhaustion.

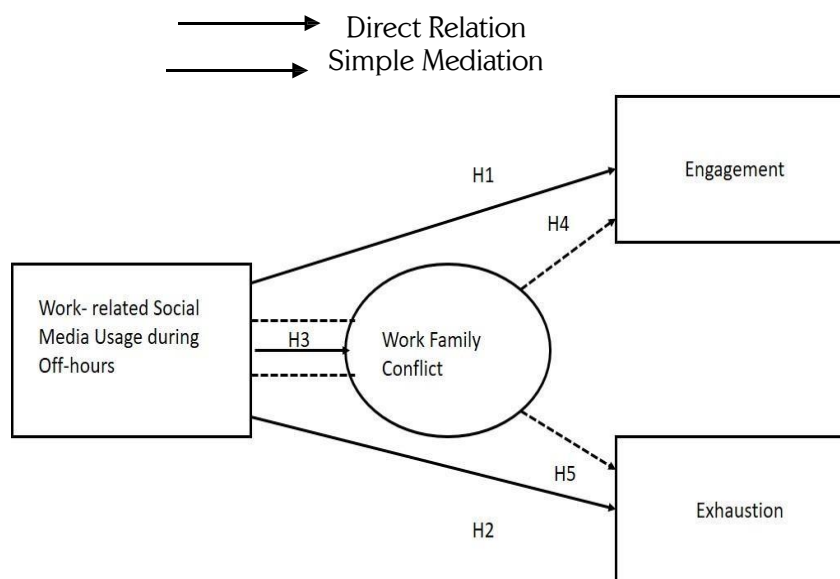
To this effect the hypothesis presented is the following.



H5 Work family conflict mediates the correlation between the work related social media use at off hours and employee exhaustion.

**Figure 1**

*Theoretical Framework*



### Conceptual Model Summary

By placing the research model in the context of existing Job Demands Resources theory, this chapter also integrated findings from recent empirical studies to develop the proposed linkages. Work-related social media use during leisure time was considered a contemporary job demand triggering both motivational and health impairment processes. Engagement and exhaustion were framed as parallel outcomes, work family conflict as the main (mechanism of) mediation.

In the conceptual model, off-job use of social media related to work proposes a dependent variable, exhaustion and engagement to the work-family conflict proposed as the mediator, and the independent variable is work-related social media use during off-office. The model depicts the dynamism in the relationship existing between the digital job demands and employee wellbeing in the present working environment.

### Methodology:

#### Research Design

The research is quantitative orientated and applies a post-positive philosophy of science. Positivism holds that reality is objective, observable and exists independently of the observer, and valid knowledge

is achieved through empirical observation and statistical analysis (Marsonet, 2019). This ontological stance is especially applicable to research that attempts to verify hypotheses which are logically deduced and associations between relatively specific concepts with number-based data. Consistent with these assumptions, the researcher in the current research did not have to subjectively interpret or analyse data as they only played a role in accessing and measuring data for secondary analysis (Scotland 2012).

A deductive research method was followed in which hypotheses were derived from existing theory and then raised to empirical test. Deductive thought is suitable for theory testing and hypothesis confirmation in quantitative analyses (Rahi, 2017). To this end, the study formulated hypotheses according to the Job Demands Resources model and tested them using statistical modeling.

The research also adopted cross sectional approach in data collection and sampled respondents at a particular time. Its key strength is its suitability to explore relationships between variables in a time and resource constrained manner (Wilson, 2014). This approach made it feasible to examine the relationships of off duty job-related SNS use with WFC, engagement and emotional exhaustion without relying on multiple time points..

## Population and Sampling Strategy:

### Target Population

The focus population was the educational field workers and primarily university teaching staff, including both public and private universities. This comprised of lecturers, assistant professors, associate professors and professors from higher education centers of Islamabad and Rawalpindi in Pakistan. This attention to the educational dimension of society is contextually appropriate given that universities have increasingly been using digital communication tools and social media platforms for academic coordination, administrative communication and stakeholder involvement, something which has become even more apparent with the COVID-19 pandemic.

Islamabad and Rawalpindi were chosen because they have a large number of universities, including public and private universities. Faculty members are amongst the personnel in these organizations who commonly communicate for work-related purposes using digital channels outside of normal working hours and can thus serve as particularly suitable when examining hypothesized relationships.

### Sampling Technique and Sample Size

Convenience sampling which is not probabilistic in nature was used to obtain data from respondents who were easily available and willing to participate. Sampling convenience is a standard method of social science research, as it does not always have access to a full sampling frame nor does it have the available time and monies (Sarstedt et al., 2018). While this method may limit the generalizability of our findings, it is appropriate for theory testing research in organizational settings.

After excluding incomplete data, a total of 430 participants were included in the analysis. Sample size was based on a recommended minimum ratio of ten responses per measurement item, considered adequate for multivariate analysis and structural equation modeling (Everitt, 1975). The sample size is larger than the minimum required for Partial Least Squares Structural Equation Modeling and strengthens the reliability and stability of parameters estimations..

### Instrumentation and Measures

A structured, self-administered questionnaire (using measurement scales that had been validated past) was used to gather data. An assessment was provided

in all items based on a five point Likert scale with a strongly disagree to strongly agree.

### Work Related Social Media Usage During Off Hours

The independent variable was work-related use of social media during off hours. The measurement items were based on van Zoonen et al. (2017) and Men et al. (2020) with amendments consistent with April Yue (2022). This item reflects the personal investment of employees in social media platforms for work-related activities beyond formal working hours. The construct had a four-factor structure based on consumption, contribution, creation and conversation as indicators of involvement in work-related social media activities.

### Work Family Conflict

Mediator The mediation variable was the WFC. The scale comprised eighteen items, evaluating time based, strain based and behavior based conflict on work to family as well as family to work route. The steps were followed by Stephens and Sommer (1996) and Carlson et al. (2000). This multidimensional measure is designed to provide a broad assessment of the ways work demands infringe upon no work responsibilities.

### Engagement

The Utrecht Work Engagement Scale was the measure used to carry out employee engagement. This tool has got a total of nine items, which can be broken down into three dimensions namely vigor, dedication and absorption (Schaufeli and Bakker, 2004). Engagement is explained as a positive and satisfying work-related state where we have vigor (high degree of energy), dedication (being involved) and absorption (concentration).

### Exhaustion

The emotional exhaustion subscale of Maslach Burnout Inventory (MBI; Schaufeli et al., 1994) was used to measure exhaustion. The scale comprises of 5 items that determine emotional and physical fatigue as a result of long-term work stress.

### Control Variables

As is traditional in previous studies, age, gender and organizational tenure were used as control variables to avoid confounding effects on engagement and exhaustion.

## Data Collection Procedures

Data were gathered through an online survey created by means of Google Forms. Participation was voluntary, and before they filled in the survey informed consent was obtained. Ethical considerations, particularly anonymity and confidentiality, were maintained. Respondents were informed that no personally identifying information would be gathered and all the answers would only serve for academic reasons. The online survey approach was adopted in view of feasibility, efficiency and cost consideration for obtaining responses from many respondents over a short period (Saunders et al., 2009).

## Statistical Analysis Techniques

The analysis of data was accomplished in SmartPLS version four. The rationale behind using Partial Least Squares Structural Equation Modeling is that it is more suitable in complex research model, prediction oriented analysis, and data, which may not be in the normal distribution form (Sarstedt et al., 2014). The analysis was done in two steps. To measure the validity of the measurement model, the first one was an evaluation of internal consistency reliability, convergence and discriminant validity. Second, the model of the structure was tested in estimating the path coefficients, coefficients of determination and mediation effects by using bootstrapping procedures.

## Data Analysis and Results

### Data Screening and Preliminary Analysis

Before hypothesis testing, descriptive statistics and preliminary data screening were employed to verify the reliability, adequacy, and appropriateness of the dataset for statistical processes. Data screening was carried out in SPSS, consistent with conventional quantitative research protocols (Hair et al., 2014; Hair et al., 2019). The last data file consists of 430 responses that were included for analysis.

Data screening was conducted by examining missing values as the first step. Data may be missing as a result of refusal to respond, data entry mistakes and technical problems (Hair et al., 2014). Data were gathered in the current study using Google Forms (with compulsory response). (The fact that no missing values occur, and all responses must be complete is satisfied.)

Analysis for the detection of outliers which could influence on the statistical results. Outliers are interpreted as extreme answers that significantly depart from the common data pattern and possibly bias normality and parameter estimation (Sarstedt et al., 2018). We also checked the data for outliers and no extreme or influential outlier was found.

Skewness and kurtosis tests were used to determine the data normality. All values of skewness were between -1 and +1, and all values of kurtosis were between -3 and +3, which is also a good normality (Hair et al., 2019). Though Partial Least Squares Structural Equation Modeling does not presuppose normally distributed data, these findings affirm that the data met the conditions of the further analysis.

**Table 1**

*Descriptive Statistics of Constructs*

Constructs	N	Minimum	Maximum	Mean	St.Dvt	Skewness	Kurtosis
WR	430	17	54	35.5721	10.2738	-0.749	-1.03
WFC	430	26	80	60.9209	16.419	-0.738	-1.152
ENG	430	11	42	30.7279	8.99458	-0.803	-0.987
EXH	430	6	25	13.214	5.09315	0.431	-1.132

## Demographic Profile of Respondents

Results of Descriptive statistics were used to create a demographic profile of the participants. The analysis took into consideration gender, age, marital status, type of organizational sector (business vs. government), years of work experience and hours per day spent on social media use off-work as well as the specific platforms used for job-related purposes.

The final sample was composed with 231 males (53.7 percent) and 199 females respondents (46.3 percent). When compared by age, 52 (12.1%) of the respondents fell within the age range of 18–20 years, 119(27.7%) were between 21 and 25 years, 126 (29.3%) were between the ages of 26–30 years and for those within the age range from 31 to 35 were a total number of 84 (19.5%), while 49(11.4%) were more than 35 years.



On the issue of marital status, 237 respondents (55.1) were married, 146 respondents (34.0) single and 47 respondents less (10.9%) reported that they had been divorced or separated. In terms of organization type, 178 (41.4 percent) respondents were working in public sector organizations whereas, 97 (22.6 percent) fell under the category of private sector organizations; 87 (20.2 percent) and 68(15.8percent) belonged to semi government and other types of organization respectively.

In terms of work tenure, a total of 68 (15.8 percent) respondents had less than a year experience, 95 had one to three years' experience or 22.1 percent; and 121 were with three to five years' experience or stood at by 28.1 percent, while only 68 respondents were placed between five to seven years or equivalent of (15.8 per cent); and there were only

few respondents which held seven to nine-year working experiences with a percentage rate of (8.1 percent) which comprised approximately 35 respondents and lastly those who have been exposed in more than nine-years working period which was covering up about 43 individuals or equivalent figure of (10 %). Regarding work-related social media usage during off-hours, 171 respondents (39.8 percent) reported using social media for one to three hours daily, 153 respondents (35.6 percent) reported usage one to three times a week, 75 respondents (17.4 percent) reported usage once a week, and 31 respondents (7.2 percent) reported no usage. WhatsApp was the most frequently used platform (27.2 percent), followed by Instagram (22.8 percent), Facebook (19.3 percent), LinkedIn (14 percent), TikTok (6.3 percent), We Chat (3 percent), and other platforms (7.4 percent).

**Table 2**

*Data Coding of Demographics*

Demographics	Label	Code
Gender	Male	1
	Female	2
Age	at least 18-20 years	1
	21-25 years	2
	26-30 years	3
	31-35 years	4
	Above 35	5
Marital Status	Married	1
	Unmarried	2
	Divorces/Separated	3
Type of Organization	Public Sector	1
	Private Sector	2
	Semi-Government	3
	Other	4
Work Experience	Less than 1 year	1
	1-3 years	2
	3-5 years	3
	5-7 years	4
	7-9 years	5
	More than 9 years	6
Social Media use for work	1-3 hours daily	1
	1-3 times a week	2
	once a week	3
	Never	4
Social Media Platform	Facebook	1
	Instagram	2

Demographics	Label	Code
	WhatsApp	3
	LinkedIn	4
	WeChat	5
	TikTok	6
	Others	7

**Table 3**

*Descriptive Statistics of Demographics*

Variables		Frequency	Percentage
Gender	Male	231	53.7
	Female	199	46.3
Age	At least 18-20 years	52	12.1
	21-25 years	119	27.7
	26-30 years	126	29.3
	31-35 years	84	19.5
	Above 35	49	11.4
Marital Status	Married	237	55.1
	Unmarried	146	34
	Divorces/Separated	47	10.9
Type of Organization	Public Sector	178	41.4
	Private Sector	97	22.6
	Semi-Government	87	20.2
	Other	68	15.8
Work Experience	Less than 1 year	68	15.8
	1-3 years	95	22.1
	3-5 years	121	28.1
	5-7 years	68	15.8
	7-9 years	35	8.1
	More than 9 years	43	10
Social Media use for work	1-3 hours daily	171	39.8
	1-3 times a week	153	35.6
	once a week	75	17.4
	never	31	7.2
Social Media Platform	Facebook	83	19.3
	Instagram	98	22.8
	WhatsApp	117	27.2
	LinkedIn	60	14
	WeChat	13	3
	TikTok	27	6.3
	Others	32	7.4

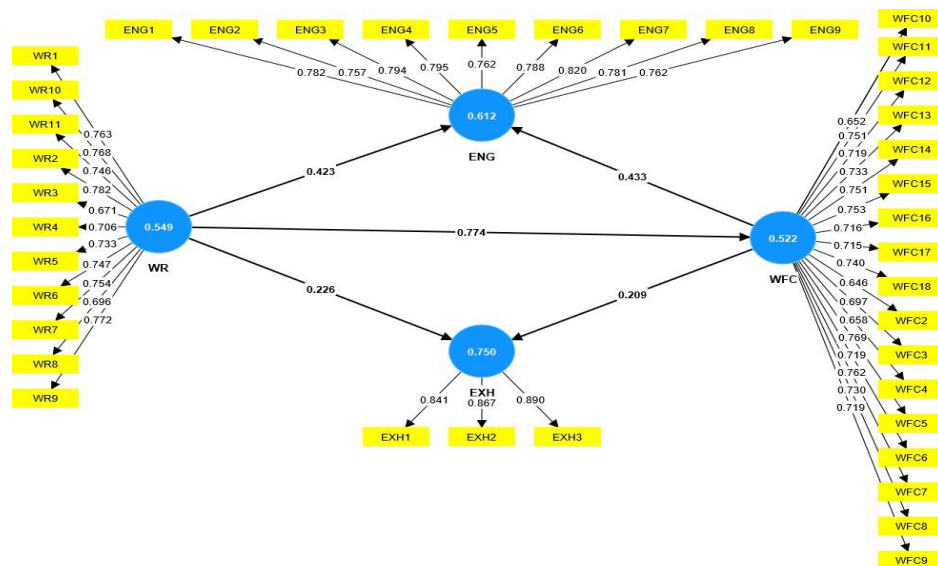
### Measurement Model Assessment

Constructs reliability and validity were evaluated by measuring the model that was developed. This test involved indicator reliability, internal consistency

reliability, convergent validity, and discriminant validity, which is consistent with the recommended procedures of Partial Least Squares Structural Equation Modeling (Hair et al., 2014; Hair et al., 2019).

**Figure 2**

PLS Measurement Model





Items	Factor Loadings
WFC12	0.719
WFC13	0.733
WFC14	0.751
WFC15	0.753
WFC16	0.716
WFC17	0.715
WFC18	0.741
ENG1	0.782
ENG2	0.757
ENG3	0.794
ENG4	0.795
ENG5	0.762
ENG6	0.788
ENG7	0.823
ENG8	0.781
ENG9	0.762
EXH1	0.841
EXH2	0.867
EXH3	0.891

### Reliability Analysis

Cronbach alpha and composite reliability were used in determining internal consistency reliability. A positive value of alpha greater than 0.70 means that the internal consistency is acceptable (Fornell and Larcker, 1981; Hair et al., 2014). Internal consistency is also established by the values of composite reliability exceeding 0.70.

The results showed that Cronbach's alpha values ranged from 0.834 to 0.946, while composite reliability values ranged from 0.840 to 0.946, indicating strong internal consistency for all constructs.

### Convergent Validity

Average Variance Extracted was used to measure convergent validity. The values of the Average Variance Extracted that have a value over 0.50 mean that a construct has more than half of the variance that is accounted by its indicators (Hair et al., 2014). The findings demonstrated that the extracted values of the constructs were all above 0.50, which confirmed that there was acceptable convergent validity.

**Table 5**

*Construct Reliability and Validity*

Constructs	Cronbach's alpha	Composite Reliability	AVE
WR	0.917	0.919	0.549
ENG	0.921	0.922	0.612
EXH	0.834	0.84	0.75
WFC	0.946	0.946	0.522

### Discriminant Validity

Discriminant validity was assessed using the hetero trait–mono trait ratio. All HTMT values were below the threshold of 0.90, indicating that the constructs were empirically distinct (Hair et al., 2019).

The Fornell–Larcker criterion was also applied, and the square roots of Average Variance Extracted for each construct were greater than the correlations with other constructs, further confirming discriminant validity.

**Table 6***Discriminant Validity HTMT:*

	ENG	EXH	WFC	WR
ENG				
EXH	0.466			
WFC	0.81	0.432		
WR	0.823	0.44	0.824	

**Table 7***Fornell-Larcker Criterion*

Constructs	ENG	EXH	WFC	WR
ENG	0.783			
EXH	0.409	0.866		
WFC	0.761	0.384	0.722	
WR	0.759	0.388	0.774	0.741

### Structural Model and Hypothesis Testing

#### Multicollinearity Assessment

Multicollinearity was assessed using variance inflation factor values. All variance inflation factor values were below the threshold of 5, indicating no multicollinearity issues.

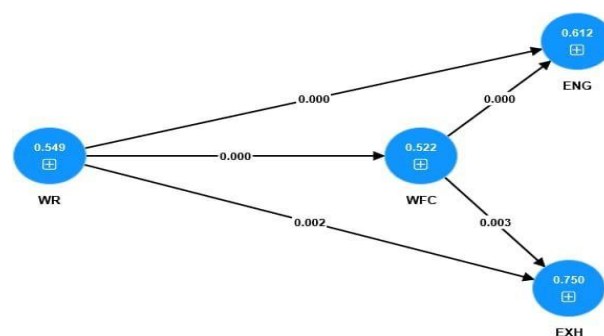
**Table 8***Collinearity Statistics*

	VIF
WFC->ENG	2.496
WFC->EXH	2.496
WR->ENG	2.496
WR->EXH	2.496
WR->WFC	1.000

### Structural Model Estimation and Hypothesis Testing

Path analysis was used to test the hypothesized relationships between the variables of the study through SEM (Partial Least Squares analysis). Bootstrapping procedure (non-parametric) was used to estimate the standard errors, t-values and indirect effect p-values. Determination coefficients ( $R^2$ ) were also used to evaluate the analysis of the structural model to confirm the variance that it explained on the

endogenous constructs. The structural model was then evaluated in order to test the relation hypotheses after determining reliability and validity of the measurement model. SmartPLS was used to bootstrap the 11 path coefficients t-values and p-values regarding the path coefficient with confidence (Hair et al., 2014). Figure 3 shows the structural equation model of standardized path coefficients, and explained variance ( $R^2$ ) of the endogenous constructs.

**Figure 3***SEM Model*

## Direct Effects

Direct effects were examined to test Hypotheses H1, H2, and H3. The results indicated that work-related social media usage during off-hours had a significant

positive effect on engagement ( $\beta = 0.423$ ,  $t = 5.253$ ,  $p < 0.05$ ), exhaustion ( $\beta = 0.226$ ,  $t = 3.168$ ,  $p < 0.05$ ), and work-family conflict ( $\beta = 0.774$ ,  $t = 27.634$ ,  $p < 0.05$ ).

**Table 9**

*Hypothesis Testing (Direct Effects)*

		Path Coefficient	T Statistics	P Values
H1	WR->ENG	0.423	5.253	0.000
H2	WR->EXH	0.226	3.168	0.002
H3	WR->WFC	0.774	27.634	0.000

## Indirect Effects

Mediation analysis was conducted to test Hypotheses H4 and H5. The results indicated that work-family conflict significantly mediated the relationship between work-related social media usage during off-

hours and engagement ( $\beta = 0.335$ ,  $t = 5.181$ ,  $p < 0.05$ ), as well as between work-related social media usage during off-hours and exhaustion ( $\beta = 0.161$ ,  $t = 2.903$ ,  $p < 0.05$ ).

**Table 10**

*Hypothesis testing (Indirect Effects)*

		Path Coefficient	T Statistics	P Values
H4	WR->WFC->ENG	0.335	5.181	0.000
H5	WR->WFC->EXH	0.161	2.903	0.004

## Coefficient of Determination

The explanatory power of the model was assessed using the coefficient of determination. R square measures the predictive accuracy of the proposed

model and it refers the proportion of variation in dependent variables due to independent variables (Hair Jr et al., 2014). The  $R^2$  values indicated acceptable levels of explained variance for the endogenous constructs.

**Table 11**

*Coefficient of Determination*

Constructs	R-Square	R-Square Adjusted
ENG	0.651	0.649
EXH	0.168	0.164
WFC	0.599	0.598

## Summary of Findings

The current study in intended to examine the impacts of work-related social media usage during off-hours on engagement, exhaustion and Work-family conflict and Work-family conflict on engagement and

exhaustion. The data was collected from the lecturers and professors of public and private universities located in Rawalpindi and Islamabad. Smart PLS was employees for testing the proposed hypothesis. The findings obtained are summarized in the table given below.

**Table 12**

*Summary of Findings*

Hypothesis	Results
H1: WR has a positive impact on engagement.	Accepted
H2: WR has a positive impact on exhaustion.	Accepted
H3: WR has a positive impact on WFC.	Accepted



Hypothesis	Results
H4: WFC is positively affecting the relationship between WR and engagement.	Accepted
H5: WFC is positively affecting the relationship between WR and exhaustion.	Accepted

## Discussion:

### General Discussion of Findings

The primary objective of this study was to examine the direct and indirect effects of work related social media usage during off hours on employee engagement and exhaustion, with work family conflict serving as a mediating mechanism. The empirical results provide strong support for the proposed hypotheses and offer valuable insight into how digitally mediated work connectivity influences employee wellbeing and work related outcomes.

We do find that our results verify that H1 is correct, i.e. work-related social media use at nonworking has a strong and positive impact attached to it as far employee engagement is concerned. Workers who feel more connected to work relevant information during non- formal hours, come across as feeling more engaged, committed and psychologically attached to their organization roles. This finding is similar to previous research evidence on how the use of digital communication generates informational access, relational proximity and a sense of belonging that maximize engagement (van Zoonen et al., 2017; April Yue, 2022). In addition from modern point, the recent studies have also found that digital connectivity may harvest motivational states due to strengthening professional identity and organizational fit, especially in KBWOs (Ren et al., 2024).

Yet, the findings also clearly support H2 after controlling for the effects of H1, that work-related social media use during off-hours is a significant contributor to employee exhaustion. While off hours accessibility can enable responsiveness and flexibility, it also imposes a persistent cognitive load and emotional burden. The requirement to be contactable outside of ordinary working hours reduces employees' possibilities of detaching and recovering psychologically, with a corresponding impact on resource depletion. This result is consistent with previous work on techno stress and digital overload that follow the idea that constant connections drain mental energy and lead to emotional burnout (van Zoonen et al., 2017; Wu et al., 2022). Recent empirical evidence is also consistent with this perspective, in that long-term digital demands off duty exacerbate fatigue when they interrupt the rest phase and extend work rumination (Pereira et al., 2024).

The findings also lend powerful empirical support to H3, which has been empirically supported that work related social media usage during non-work time has directly and positively impact on work family conflict. Digital work boundary crossings invading family time entail changing cognitive roles from employees to family members and enhance time based and strain based conflict. Even short exposures to work messengers could cognitively overwhelm employees and undermine the quality of family engagement. This is also congruent with prior research that outof-hour work communication may contribute to role interference as it challenges the distinctions between professional and private life domains (April Yue, 2022; F. Wang & Li, 2023). The latter argument is supported by recent evidence showing that digital work requirements increase WFC through role boundary management stress, as well as more constant role switching and less perceived role clarity (Zhang & Li, 2024).

For indirect effects, H4 is also supported as the findings demonstrate that work family conflict mediates the relationship between overtime on SNS and employee engagement partially. Digital connectivity might increase engagement in the short run, but a high level of work family conflict diminishes this effect through emotional tension and role strain. This indicates that the positive off hours connectedness is qualified and may not apply when employees are constantly subjected to work-related family interference. Consistent with previous research, work family conflict not only decreases positive work attitudes by elevating stress and decreasing psychological resources to be involved in work (April Yue, 2022; Yang et al., 2021). Recent advances also indicate that unregulated work family conflict undermines engagement by consuming the emotional resources necessary for self-sustained commitment at work (Liu et al., 2024).

Finally, H5 was also supported: work family conflict mediates relationship between work related social media use in the off hours and exhaustion. The results suggest that off hours digital work demands lead to higher exhaustion through two channels, directly and indirectly by enhancing the level of work family conflict. As workers seek to fulfil competing role demands, cumulative strain increases emotional exhaustion and psychological burnout. This finding is consistent with prior research that identifies work family conflict as a primary mechanism through which

job demands influence exhaustion (van Zoonen et al., 2017; Wu et al., 2022). Recent research further underscores that digital job demands aggravate exhaustion through extending strain exposure and reducing opportunities for recovery in the family domain (Khan et al., 2025).

### Theoretical Implications

The theoretical implications are numerous, since we extended and tested the use of both the JD-R model as well as Boundary Theory in a digital work context.

When applied to JDR reasons, this study provides a good empirical indication of the health impairment process in the digital age. The results contribute to the fact that non-work social media use is a particular job demand that drains cognitive and emotional resources and, thus, discourages subjective recovery. Although prior JD R research focused on the physical and organizational play at traditional work settings, this study extends the framework by considering after-hours digital connectivity as a substantial deplete (Bakker & Demerouti, 2007; Ren et al., 2024). This expansion underscores that job demands are no longer only found at work but are increasingly present in employees' personal time by virtue of digital technologies.

Moreover, the findings show that there is a divide in work related social media usage in non-working hours which reveals that it increases engagement and exhaustion at the same time. It highlights the irony of contemporary work requirements and contradicts easy assumptions that there is inbuilt value from digital connectedness. In empirically showing that off hours social media use triggers both motivational and strain related processes, our study contributes to JD R theory by showing how one demand can lead to multiple competing outcomes which are dependent on the context and individual level psychological (states).

Moreover, this paper also provides the empirical evidence that digital communication technologies are erasing the border between work and non-work as a support to Boundary Theory. Such a high level of interconnection of work related SNS use in non-work time and W/F conflict indicates that digital interactions interfere with role segregation and solidify role integration (Campbell Clark, 2000; van Zoonen and Banghart, 2018). Since it demonstrates that work family conflict mediates the connections between digital job demands and the engagement and exhaustion, our sample adds to theories of how boundary violations are transmuted into psychological consequences. Recent research

likewise emphasizes that digital boundary permeability is a strong predictor of employee well-being in 21st-century organizations (Zhang & Li, 2024).

Significantly, this paper brings digital job demands as a separate and pathogenic category to JD R theory. Differing from traditional job demands, digital demands are time and location independent (in that they exceed such boundaries). Thus, it is even worse if unregulated. This theoretical perspective complements a growing body of literature advocating for re-conceptualizing job demands in the era of ubiquitous digitalization (see Ren et al., 2024; Khan et al., 2025).

### Practical Implications

The results of this research can be of a number of valuable practical implications to organizations, managers, and workers.

More so, the results in the case of organizations is that, past six in the evening, work-related social media must be limited to ensure that the health of employees is not compromised. Although digital connectivity can facilitate greater engagement, unrealistic assumptions of being available may result in feeling worn-out and overwork family conflict. Companies can look at setting communication policies with there being acceptable response times and no non-urgent work communication outside the working hours. Recent organizational work corroborates the use of structured digital norms and right to disconnect policies as mechanisms through which employee strain can be reduced and recovery time protected (Pereira et al., 2024).

Managers are instrumental agents in the propagation of digital communication culture. Managers will need to strike a balance on social media usage, not contacting employees off hours unless absolutely necessary, and respecting their personal time. Training programs may help managers to understand the untoward effects of digital overreach and provide them with tools and strategies for achieving a balance between connectivity and employee recovery<sup>4</sup>. From a theoretical perspective, evidence indicates that supportive leadership positive behaviors can play an important role in decreasing WFC and exhaustion due to DJD (Liu et al., 2024).

For employees, the results highlight the relevance of active boundary management. Workers should be encouraged to set their own off-hours restrictions around digital contact, such as turning off automatic notifications or setting aside specific time periods for work-related communication. Practicing

psychological disconnection and digital self-regulation strategies may help employees minimize the negative effects of off work connectivity. Recent research demonstrates that there may be a positive effect of mindfulness based interventions and boundary management strategies in tackling exhaustion and maintaining wellbeing in digitally intense working contexts (Khan et al., 2025).

### Limitations and Future Research Directions

There are several limitations in this study that must be mentioned, despite its values. First, a cross sectional design of the study restricts causal inference. Longitudinal or diary design could be adopted in future studies to trace the dynamic fluctuation of digital work demands, recovery process, and well-being over time. Secondly, our data was gathered using self-reported questionnaires that could lead unintentionally to common method bias. Potential future use of objective usage data or multiple informants may improve validity.

Further, the research data is limited to employees in a specific geographic region within the educational sector. Adoption of the model by various sectors and cultures will increase the transferability of results. Finally, future studies would be wise to test potential moderators that might change when or under what conditions digital job demands are more or less harmful such as psychological detachment, boundary control preferences, or family-supportive leadership. An investigation of the platform specific influences and time-varying effects of off-hours social media use is also a potential avenue for future research development in this research area.

### Conclusion:

#### Summary of the Study

The study was aimed to explore the implications of working through social media during non-work time on employee engagement and exhaustion with a special focus on mediation of work- family conflict. The study was inspired by the increasing use of digital connectivity carried out by today's workers, who are more and more required to maintain reachability outside office hours. Although they were supplemented by the Job Demands Resources framework and Boundary Theory, the objective of the study was also to explain why off - hrs. digital work lives in both generate motivational benefits and health related costs concurrently.

The study was carried out on lecturers and professors of both public as well as private sector universities in Rawalpindi and Islamabad. The data

was gathered by structured questionnaire and was analyzed via SPSS and SmartPLS model with SEM. The findings showed that the use of social media for work and by work while off duty positively predicted employee engagement, highlighting that digital connectedness encourages involvement, devotement and psychological connection to work roles. These results support previous research, suggesting that digital communication facilitates engagement by providing additional information and ongoing organizational interaction (van Zoonen et al., 2017; April Yue: 2022).

In the meantime, the study also discovered that after hours work-related use of social media actually increased the exhaustion in employees. 24, 25 this phenomenon of maintained digital connectedness was reported to place cognitive and emotional demands on people that hinder recovery processes and diminish resources. In addition, work family conflict was identified as one of the critical chains among off hours connectivity and engagement as well as exhaustion. The findings suggested that work family conflict played a mediating role between off hours social media use and job engagement, thereby suppressing the influence of connectivity. However, work family conflict also mediated off hours social media use on exhaustion epidemiologically. The results emphasize the importance of boundary erosion to understand why digital job demands are linked to family devaluation in a way that reduces employee well-being (van Zoonen et al., 2017; F. Wang & Li, 2023).

In sum, this study advances an integrated perspective on the double edged nature of the use of social media for work during off job hours as it improves engagement but also adds to exhaustion by eliciting work family conflict.

### Concluding Remarks

The results from this work emphasize that organizations should re consider the current always on culture. Digital connectivity has changed the nature of work, accelerating and creating flexibility in communication yet at the same time generating "always on" job demands that transcend traditional temporal and spatial borders. The study first shows that the use of SNSs for work purpose outside working hours cannot be entirely treated as a neutral or positive communicational tool, but rather that it is an issue which could potentially generate strain among employees putting at risk their psychological sustainability.

By empirically identifying WFC as an important mechanism through which off hours digital

connectivity is related to exhaustion, this study suggests the need of protecting work and non-work boundaries. In the absence of intentional strategies from both the organization and individuals to navigate the digital environment, the long term consequences of continuous connectedness may outweigh short term benefits. In the bigger picture, maintaining health in the computer age means shifting from unlimited access to responsible work.

Finally, this study underlines that healthy and engaged employees in a digital work era are not a factor of more connectivity, but smarter connections. Reevaluating norms for afterhours communication and reestablishing boundaries is a necessary sanity checking process to preserve energy, family life, and long term productivity in the workplace.



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