

## RESEARCH ARTICLE

# THE ROLE OF STRESS ON CYBERLOAFING AND JOB PERFORMANCE: RESEARCH GAPS AND A PRAGMATIC CONCEPTUAL FRAMEWORK FOR FUTURE RESEARCH

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**Abstract: Objective:** This research review aims to identify research gaps, develop a pragmatic conceptual framework for the mediating effect of stress on cyberloafing and job performance and identify relevant theories related to the concepts. **Design:** This review adapted Callahan's (2014) 'Six W' and 'Five C' methods to consider the current definitions of cyberloafing, job performance and stress and literature related to the mediating effect of stress on the above relationship. A total of 500 articles were initially reviewed, and 102 were retained for further exploration. Twenty-one (21) articles were selected for the final review. **Main outcomes:** The review identified five (5) gaps among the concepts, and the discovered theories related to them, namely, ego-depletion for cyberloafing, general strain for stress and social exchange theory for job performance. **Results:** The identification of the gaps has enabled the development of the pragmatic conceptual framework to determine the impact of stress on the relationship between cyberloafing and job performance in the future. **Conclusion:** There is enormous scope for empirically testing this model in various global contexts, and it is a vibrant contribution to the entire framework of Human Resources Management. Future research will enable researchers to identify the gravity of stress as a mediator in the above relationship and help develop appropriate actions to mitigate the impact of stress on job performance.

**Keywords:** Cyberloafing, Information Communication Technology (ICT), Job performance, Mediating effect, Pragmatic conceptual framework, Research gaps, Stress

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## INTRODUCTION

The integration of ICT in work environments has created a platform for employees to deviate from work, which is identified as cyberloafing (Anandarajan and Igarria, 2000; Lim, 2002) Despite some desirous effects of cyberloafing many have claimed that it leads to stress, causing detrimental effects to the organization (Askew et al., 2014; Sheikh and Aghaz, 2016, Wu et al., 2020). One significant detrimental cause cyberloafing is likely to impose is poor job performance. Cyberloafing, job performance and stress are concepts that have been explored individually but rarely together in the past.

There have been efforts to understand the impact of cyberloafing on job performance in

different contexts, but the mediating role of stress in this relationship has not been researched thus far. Stress was found to impact job performance negatively (Pandey, 2020; Sari et al., 2021; Khan et al., 2022). Zhao (2023) indicated that social media addiction increased the stress levels of students, leading to poor academic performance. Depression, anxiety, stress and insomnia mediated the relationship between social media addiction and memory performance (Dagher et al., 2021) strain facets mediated technostress and adverse job outcomes (Gaudioso et al., 2017). As such, the objectives of this review are to identify research gaps related to the mediating role of stress on cyberloafing and job performance,

to develop a conceptual framework to empirically test it in various global contexts and to identify theories related to concepts.

Cyberloafing is the use of the internet for personal purposes while at work. It is a deviation from work partially contributed by the working environment (Lim, 2002). Modern work settings are Information Communication Technology (ICT) enabled, providing a podium for employees to deviate freely and use the Internet for non-work related activities considered detrimental to the organization as it impinges upon performance (Lim, 2002; Anandarajan *et al.*, 2006; Askew, 2012; Hoonakker, 2014; Aghaz and Sheikh, 2016; Zhong *et al.*, 2022).

Researchers have also indicated that cyberloafing at work is to take a respite to regain control and improve performance (Reinecke, 2009; Askew *et al.*, 2014; Aghaz and Sheikh, 2016). Hence, cyberloafing could be viewed as both detrimental and beneficial computer behaviour at work (Bosamia, 2013).

Job performance is a vital construct, and it is related to competitive advantage (Albrecht *et al.*, 2015). Job performance is directly connected to organizational objectives and is vital for an organization's survival (Viswesvaran and Ones, 2000). The definitions of the construct are likely to change as factors not seen in the past impact today's work settings (Borman and Motowidlo, 1997; Viswesvaran and Ones, 2000).

ICT is one such factor that has impacted work settings, making job performance more efficient and fast and creating jobs which are booming today (Baglari, 2014; Kılıçaslan and Töngür, 2019; Herman, 2020). Organizations adopted the Internet quickly to move from traditional work settings to high-performing organizations that reduced product cycle time and improved marketing of goods and services and employee performance (Lim, 2002; Anandarajan *et al.*, 2006; Aghaz and Sheikh, 2016).

Stress is a concept discussed in modern work environments, as ICT in work settings has made boundaries between work and life hazy (Mullan and Wajcman, 2019). Stress is defined as a non-specific response of the body to a demand for change (Selye, 1955). He suggested that stress is experienced when the human body is taken away from its comfortable equilibrium.

The competitive corporate world today leads to stress among workers (Singh, 2018). Strenuous emotional demands among professionals such as teachers, police officers and social workers lead to stress (Bakker *et al.*, 2002). Bliese *et al.* (2017) posited that events such as pandemics, economic depression, and other social changes also lead to stress. Hence, chronic stress over some time can lead to ill health and disease among individuals (Sørensen *et al.*, 2021).

## MATERIALS AND METHODS

Systematic reviews can be numerous, but structured reviews on methods, theories and constructs are popular (Rosado-Serrano *et al.* (2018). The Systematic review method is well-suited for a critical survey of extant research on a selected subject (Goyal and Kumar, 2021).

The synthesis of existing literature in the form of a review of a given phenomenon is significant to improve evidence-based decision-making (Callahan, 2014). Booth *et al.* (2012, as cited in Callahan, 2014) claimed that literature reviews are vital in identifying gaps in knowledge of a phenomenon.

Hence, Callahan's (2014) systematic review was considered appropriate to identify the gaps related to the mediating effect of stress on cyberloafing and job performance and used the Six W's and "Five C" characteristics. Refer to Table 1.

**Table 1: Components of literature review method**

Who	The authors were central to the review
When	The literature was collected over twelve months. The articles were from 1988 to 2023, concerning definitions of constructs and the mediating impact of stress on cyberloafing and job performance.
Where	Journals, Books and conference papers related to the subject were used. Sources used were Google Scholar, Research Gate, Sage journals, Springer, Science Direct, Taylor and

	Francis and Emerald.
How	The snowball method was used to gather relevant literature. Keywords used were stress, job performance, depression, anxiety, cyberloafing, task performance, contextual performance, commitment, engagement, ICT, social media use, performance, academic performance, internet abuse and internet misuse, strain, mental fatigue, psychological detachment, mediating role, mediating effect, poor performance and handheld devices.
What	Articles found were on perceived job stress, job stress, emotional exhaustion, work stress, fatigue, job anxiety, state anxiety, stress, strain facets, negative emotions, burnout, workplace ostracism and incivility, social media addiction, COVID-19 social media use, techno-overload, organizational performance, academic performance, task performance, memory performance, job performance, cyberloafing, Five hundred articles were in raw data, of which 102 articles were kept, and others were discarded as they were irrelevant. The final selection included 21 articles. Articles that were found to be useful were related to cyberloafing and the mediating role of concepts related to stress. The rejections were not on the mediating effect of stress on cyberloafing and job performance. These were discrimination and stress, work-family conflict and stress, dispositional gratitude, moderating role of stress, the moderating role of cyberloafing, causes of stress, homeostasis, psychological factors at work and personality and stress.
why	The selected articles were the most relevant for gap identification and related to the mediating role of stress in the relationship between cyberloafing and job performance.

Source: Adapted from Callahan (2014)

Callahan (2014) identified ‘five Cs’ as concise, clear, critical, convincing and contributive. *Conciseness* is ensured with the concise combination of articles selected from a large number of artefacts to address gaps, guided by the question does stress mediate a relationship between cyberloafing and job performance? To ensure *clarity*, a clear process was followed, in which articles related to the specific subject were searched, including the ones that provided clear definitions of related concepts, as noted in Table 1.

The *criticality* was ensured, indicating the positionality of the author by highlighting the existing gaps in current studies. For the review to be *convincing*, a conceptual framework is presented for future research.

Recommendations are provided to satisfy the *contributive* part of the review.

## RESULTS

This part briefly describes the definitions and explains the concepts of cyberloafing, job performance and stress and highlights current research on the mediating effect of stress or stress-related concepts with cyberloafing functioning as either the independent or the dependent variable. This is due to the lack of research in the area.

### The Concept of Cyberloafing

Scholars have defined cyberloafing differently, based on the context within which they viewed the concept. Refer to Table 2.

**Table 2: Definitions of cyberloafing**

Author and year	Definition	Context
Lim (2002)	Voluntary use of the internet during office hours to surf non-job related websites for personal purposes and to send and receive e-mails.	Employed individuals in Public and Private sector organizations in Singapore with internet facilities.
Lim and Teo (2005)	Using the company’s internet facilities for personal purposes during work hours.	Internet-savvy adults with a degree working in IT, manufacturing, services and finance in the private and public sector organizations in Singapore
Blau et al. (2006)	Misuse of the internet	Medical technologists in the USA
Anandarajan et al. (2006)	Discretionary online web behaviour during working time using any of the organization’s resources for activities outside customary job and work requirements	Top, middle and lower-level managers, professionals and administrators in the USA.
Blanchard and	Employees’ non-work related use of	Ethnically diverse employed MBA

Henle (2008)	company-provided email and the internet while at work	students from different industries in the USA.
Askew <i>et al.</i> (2014)	Behaviours at work in which employees engage in electronically mediated activities, specifically using the internet that supervisors do not consider as job-related	An ethnically diverse group of Student and non-student employees from different organizations using computers at work in the US.
Oosthuizen <i>et al.</i> (2018)	Voluntarily using the internet facilities of the company, during office hours to surf on non-job related websites for personal use and to check, send and receive personal emails.	Office workers in retail and manufacturing sectors in South Africa
Sao, <i>et al.</i> (2020)	Using the Internet for non-office work-related activities during working hours, pretending to do their official work	Employees from manufacturing, IT/e-commerce, real estate, retail and education sectors in India.
Rajput and Parimal, (2020)	Unproductive use of technologies at work.	Manufacturing and service sectors in India
Usman, <i>et al.</i> (2021)	Surfing the internet for personal, non-work related purposes such as checking headlines, shopping, personal emailing, gambling, accessing pirated materials and watching pornographic videos during office hours.	Manufacturing and service industries in Pakistan

Source: Developed by researchers based on literature (2023)

The internet has been used as a platform to engage in non-work behaviours such as gaming, viewing pornographic materials, sending and receiving personal emails, reading news and shopping online (Lim, 2002; Aghaz and Sheikh, 2016; Sao *et al.*, 2020).

Wu *et al.* (2020) posited that smartphones are used for cyberloafing activities such as sending, receiving and reading emails and engaging in other personal activities. Identified as goldbricking, individuals engage in non-work related offensive activities such as online gambling, watching unethical movies and illegally retrieving data and other information (Syed *et al.*, 2020).

Hafizh and Sumadhinata (2022) suggested that cyberloafing is inappropriate internet behaviour consisting of activities such as personal emailing, browsing and social networking.

Aybas and Güngör (2020) classified cyberloafing as detrimental and non-detrimental and itemized them as visiting adult and news sites, shopping, playing games, vacation planning, stock trading and chatting. Ozler and Polat (2012) categorised cyberloafing into minor and major activities, which consisted of activities such as shopping, surfing, social media engagement,

seeking employment, downloading non-work related material and sending and receiving emails. Mastrangelo *et al.* (2006) noted it as non-productive and counterproductive behaviour and included activities such as gambling, trading stocks, music swapping and downloading sexually oriented materials. Aghaz and Sheikh (2016) posited that cyberloafing is an antidote for job burnout in knowledge-intensive industries consisting of minor and major activities.

They identified them as gambling, visiting adult Websites, downloading music, updating personal web pages, engage in chatting as major while reading news was identified as minor cyberloafing.

Cyberloafing was noted as a method of recovery and a source of new learning, which included activities such engage in social media, shopping online, playing games, watching videos, reading blogs and news and sending and receiving emails (Sao *et al.*, 2020). Hence, cyberloafing encased different types of activities which have both positive and negative impacts on individuals and organizations.

### The Concept of Job Performance

Scholars have given the construct different definitions based on the contexts within which it has been looked at. Refer to Table 3.

**Table 3: Definitions of job performance**

Author and year	Definition	Context
Karatepe <i>et al.</i> (2006)	Productivity of an employee is connected to his peers on several behaviours and outcomes that are related to the job.	Frontline hotel employees in Cyprus
Cheng <i>et al.</i> , (2007)	Achievement of work outcomes of each function of a job within a specific period.	Contractors, clients, and subcontractors in the construction industry in China
Koopmans <i>et al.</i> (2014)	Behaviours that are related to the goals and objectives of the organization.	Researchers, managers, human resources managers and occupational health professionals in the Netherlands
Jayaweera (2015)	Activities carried out to achieve the organizational objectives.	Workers from a Hotel chain in the United Kingdom
Ali-Hassan <i>et al.</i> (2015)	Activities carried out in a dependable manner, which consisted of routine performances and innovative performances	A large multinational Information technology company USA.
Na-Nan <i>et al.</i> (2017)	Display of behaviours at work which deliver the outcomes expected by the organization in terms of job quality, quantity and time	Auto parts assembly line workers in Thailand
Wu <i>et al.</i> (2019)	Behaviours that indicate endeavours to achieve project standards and objectives and organizational goals.	Construction project managers within the Chinese construction industry.
Darmawan <i>et al.</i> (2020)	The achievement of work-related tasks and responsibilities, adjusted by the company, through efforts to achieve organizational objectives.	State-owned company in West Java, Indonesia.
Ngwenya and Pelsler (2020)	Work results of employees in terms of quality and quantity related to responsibilities provided by the organization	Employees from eight (8) manufacturing companies in Zimbabwe
Limon and Nartgün (2020)	Behaviours and outcomes of an employee that are related to the job	Primary, secondary and High school teachers in Turkey
López-Cabarcos <i>et al.</i> (2022)	A behaviour that can be witnessed and that creates value fro the organization.	Employees from the industrial sector in Spain.

Source: Developed by researchers based on literature (2023)

Hassan and Ogunkoya (2014) noted that individual job performance will change over time, and its measurement will be based on temporal variables.

Personality variables impact task and contextual performance as they are affected by ability and personality, respectively (Borman *et al.*, 2014). Job performance is related to cognitive abilities as both technical core and contextual performance require it (Bergman *et al.*, 2008). They noted that cognition is vital because novel scenarios encountered at work require the capacity to

draw a parallel between past experiences and new ones, leading to a novel solution. Bin and Shmailan (2015) posited that job performance is carrying out observable tasks to a given standard. López-Cabarcos *et al.* (2022) defined job performance as witnessable behaviours of individuals that produce value for the organization.

### The Concept of Stress

Stress appears to be a part of modern work and impacts individuals negatively. Scholars have given numerous definitions for the same. Refer to Table 4.

**Table 4: Definitions of Stress**

Author/s and Year	Definition	Context
Lambert <i>et al.</i> (2004)	The occurrence of a divergence between perceived expectations of the given role and what takes place.	Nurses in Hawaii
Avey <i>et al.</i> (2009)	Occurs when an individual assumes that the demands posed by an external situation are beyond the individual's	Working adults from different industries

	capacity.	including the manufacturing sector from the United States.
Jayasinghe and Mendis (2017)	Response of an individual to a stimulus that interrupts the physical and mental symmetry.	Banking employees in Sri Lanka
Wu <i>et al.</i> (2019)	An individual's response to a disparity between demands of external events and the resources available to handle this situation.	Construction workers in China
Güğerçin (2020)	Stressful phenomenon experienced by the end user of an organization who is engaged in ICT-related work.	White collar employees from the manufacturing sector, MBA students and graduates in Turkey.
Deng <i>et al.</i> (2019)	A response of an individual to the stimuli of the environment.	Nurses in Public hospitals in China
Pandey (2020)	A state in which an individual is required to satisfy work duties which exceed the ability and the resources with a significant disparity between rewards and the demand for resources.	Commercial banks in Kathmandu, Nepal.

Source: Developed by researchers based on literature (2023)

Stress is an experience individuals encounter when they face difficult situations to handle (Deng *et al.*, 2019). Stress occurs when an individual is required to satisfy duties that exceed his ability and resources, with a disparity between rewards and the demand for resources (Pandey *et al.*, 2021). Many have not considered stress broadly but are confined only to job stress (Smith and Sainfort, 1989; Sonnentag *et al.*, 2018; Mullan and Wajcman, 2019).

Heuser and Lammers (2003) noted that stress is a risk factor for illnesses involving hormones that function as a survival tool during stress. Weinberg and Cooper (2011) suggested that stress cannot emanate from a single source but multiple sources such as the individual, organizational and global. Wu *et al.* (2019) noted that stress is a response to a disparity between external demands and

the resources available and suggested job is a major source of stress. Silva and Ranasinghe (2017) suggested that work stress contributed to deviant behaviour at work.

There has been research on cyberloafing and job performance, but there is little understanding of the mediating role of stress in this relationship. It is accepted that ICT-enabled work causes stress, which would in turn impact performance (Day *et al.*, 2010; Aghaz and Sheikh, 2016; Karimikia *et al.*, 2020; Wu *et al.*, 2020).

Table 5 depicts a summary of research related to stress and related variables as mediators with cyberloafing functioning as either the independent or the dependent variables, and it clearly illustrates the gaps in this area of research at present.

**Table 5: Summary of empirical studies on the mediating concepts related to stress with cyberloafing and related concepts as either dependent or independent variables**

No	Author/s	Year	Objective	Sample	Key findings
1	Gaudioso <i>et al.</i>	2017	To determine the mediating roles of strain facets and coping strategies in translating techno-overload into adverse job outcomes	242 employees from different organizations in the United States of America	Strain facets mediated techno-overload and adverse job outcomes.
2	Koay <i>et al.</i>	2017	To determine the relationship between employees' private demands and cyberloafing with job stress as the mediator	301 employees selected from the ICT sector in Malaysia	Job stress partially mediates the relationship between employees' private demand and cyberloafing
3	Koay	2018	To examine the relationship between workplace ostracism and cyberloafing with	179 full-time employees from the continental United States	Emotional exhaustion partially mediated the relationship between workplace ostracism and cyberloafing and

			emotional exhaustion as a mediator variable and facilitating conditions as the moderator		facilitating conditions do not moderate ostracism and cyberloafing
4	Wu et al.	2020	To determine the impact of employee social loafing on their mental health: fatigue and psychological detachment	375 Chinese employees with Internet facilities at work	Social cyberloafing has a positive relationship with psychological detachment and it leads to employee fatigue. Fatigue negatively mediates the relationship between social cyberloafing and mental health
5	Elrehail et al.	2021	To determine the influence of job demands and job resources on cyberloafing and the mediating role of job stress	534 faculty members from the Universities of Pakistan	Job stress and job resources significantly mediated the relationship between job demand and cyberloafing behaviour
6	Lim et al.	2021	To determine the influence of abusive supervision on cyberloafing with the mediating effect of emotional exhaustion and the moderating effect of organizational commitment	255 employees from publically listed companies in Malaysia	Abusive supervision impacted cyberloafing through emotional exhaustion only when the organizational commitment was low.
7	Dagher et al.	2021	To evaluate the association between problematic social media use and memory performance and the mediating effect of depression, anxiety, stress and insomnia of Lebanese people.	466 residents in Lebanon	Depression, anxiety, stress and insomnia partially mediated problematic social media use and memory performance
8	Chen et al.	2021	To investigate the roles of fatigue and negative coping styles mediating the relationship between perceived stress and cyberloafing	730 undergraduates from the Universities of Hubei province in China	Fatigue and negative coping style mediated the relationship between Stress and cyberloafing
9	Zhu et al.	2021	To examine the relationship between responsible leadership and counterproductive work behaviour of employee cyberloafing with felt obligation and job stress as mediators and conscientiousness as a moderator	318 full-time employees working with computers in China.	Job stress mediated the relationship between responsible leadership and cyberloafing
10	Zhong et al.	2021	To determine how and why cyberloafing affects employee innovation performance	544 participants comprising MBA students, parents of undergraduates and employees with one to two years of experience from different sectors sector in China	Job anxiety mediated the relationship between COVID-19-based informational cyberloafing and the perceived meaning of work with a negative effect on innovation performance
11	Megaputri and Suharti	2022	To analyse the effects of role ambiguity and organizational justice on cyberloafing with job stress as a mediating variable	104 respondents from the civil service of Salatiga Indonesia.	Job stress does not mediate the relationship between role ambiguity and organizational justice on cyberloafing
12	Rahmadi and Yanita	2022	To analyse the impact of organizational justice, abusive leadership and self-control on	198 employees from travel companies located in Jakarta Indonesia	Work stress does not mediate the relationship between abusive leadership, organizational justice and self-

			cyberloafing behaviour with the mediating effect of work stress, during the COVID-19 pandemic		control but organizational justice has a direct relationship with cyberloafing
13	Li et al.	2022	To examine the mediating role of state anxiety between cyberloafing and a sense of meaning of life and the moderating role of psychological flexibility in this mediating relationship	964 undergraduate students in China	Cyberloafing had a significant negative correlation with the sense of meaning of life and state anxiety partially mediated this relationship. Psychological flexibility moderated the relationship between cyberloafing and state anxiety
14	Zhou et al.	2022	To determine the impact of experiencing email incivility and cyberloafing with the mediating effect of negative emotions	113 full-time employees in the United States	Morning perceived email incivility predicted afternoon cyberloafing mediated by negative emotions
15	Zhao	2023	To determine the impact of social media addiction on academic performance of college students and the mediating role of stress	372 college students in China	Stress mediated the relationship between social media addiction and academic performance
16	Malik	2023	To examine the effects of cyberloafing and work stress on the performance of accounting teachers and education staff	38 accounting and educational staff in Malang Indonesia	Work stress does not mediate cyberloafing and work performance and cyberloafing has a significant negative effect on performance
17	Rohmah et al.	2023	To examine the effect of cyberloafing and work stress on the performance of teachers and education staff	38 public middle school teachers in Indonesia	Work stress does not mediate the relationship between cyberloafing and performance but cyberloafing has a significant negative effect on performance
18	Simatupang and Margaretha	2023	To determine the effect of academic stress on cyberloafing with the mediating effect of fatigue	248 state and private university students from Bandung, Indonesia	Academic stress impacted cyberloafing and fatigue does not mediate the above relationship
19	Novianti and Roz	2023	To determine the impact of work overload on cyberloafing with work stress as the mediator	148 banking sector employees from Malang City, Indonesia	Work overload does not affect cyberloafing and work stress mediates the relationship between work overload and cyberloafing
20	Aftab and Waseem	2023	To determine the linkage between workplace incivility, work alienation and cyberloafing	300 employees working in the manufacturing sector in Pakistan	Job stress mediated the relationship between work alienation and cyberloafing and emotional exhaustion mediated the relationship between workplace incivility and cyberloafing
21	Peng et al.	2023	To examine the association between competitive class climate and cyberloafing among adolescents and the mediating role of perceived stress and the moderating role of self-esteem	686 adolescents from middle and high schools in China	The competitive class climate was associated with perceived stress which impacted cyberloafing and perceived stress mediated the relationship between competitive class climate and cyberloafing

Source: Developed by researchers based on literature (2023)

### Theories linked in Developing the Pragmatic Conceptual Framework

A theory is relevant in research because it provides a framework to understand the

social scenario and helps the researcher interpret the findings (Bryman, 2012).

### Ego Depletion Theory Linked with Cyberloafing

Baumeister *et al.* (1998) defined it as the consumption of limited resources of mental energy in self-regulated activities.

This reduction of self-regulation happens due to activities earlier on complex tasks (Baumeister *et al.*, 2000; Wagner *et al.*, 2012). Askew *et al.* (2014) compared self-regulation to a muscle which is fatigued and recovers with rest.

Researchers posited that cyberloafing results due to the depletion of the capacity to self-regulate, affected by personality variables (Prasad *et al.*, 2010). Sleep deprivation affects self-regulation, resulting in cyberloafing (Wagner *et al.*, 2012). Loneliness at work leads to ego depletion, resulting in cyberloafing (Yang *et al.*, 2023). Hence, it is clear that ego depletion could lead to cyberloafing.

**General Strain theory Linked with Stress**

The General strain theory (GST) of Agnew (1992) indicated that strain causes negative behaviour. GST focuses mainly on strains, such as negative treatment by others, work overload, role conflict, role ambiguity and the inability to achieve goals.

Cyberloafing can generate strain, resulting in poor job performance (Sonnentag *et al.*, 2018; Wu *et al.*, 2020). Mihelič *et al.* (2022) noted that cyberloafing facilitates psychological detachment, resulting in a strain which can lead to further strain (Sonnentag *et al.*, 2017; Sonnentag *et al.*, 2018).

Workplace ostracism and incivility cause strain, resulting in cyberloafing (Koay and

Soh, 2018). Using GST, Silva and Ranasinghe (2017) suggested that stress resulting from work overload and role conflict can promote deviant behaviour, leading to poor job performance. Work overload leads to stress, which mediates the relationship between work overload and cyberloafing (Novianti and Roz, 2023). Using GST, Dang (2014) noted organizational injustice caused frustration and fear and promoted negative behaviour. Hence, it is possible to suggest that strain in one domain can affect another domain negatively (Wu *et al.*, 2020).

**Social Exchange theory Linked with Job Performance**

Homans (1958) noted it as an exchange of activity, either intangible or tangible and rewarding or costly, between at least two persons. Employee engagement is to exchange benefits with the organization based on the rewards they are likely to receive (Yin, 2018).

Organizational justice engages employees effectively due to high anticipation of equitable rewards (Aryee *et al.*, 2002; Begley *et al.*, 2006). Davies and Gould-Williams (2005), using the theory, indicated high trust in management yields higher employee motivation and commitment.

High leader-member exchange is said to be reciprocated with high employee performance (Chen and Wei, 2020). Hence, it is clear that job performance is an exchange between the organization and employees as reciprocation. The strength of this reciprocation is dependent on the robustness of what employees receive from the organization as an equitable exchange.

**Table 6: Final selection of Journals reviewed on the mediating concepts related to stress with cyberloafing and related variables**

Name of Journals/Conference Papers	Number of Articles	Title of the study/Author
Computers in human behaviour	2	The mediating roles of strain facets and coping strategies in translating techno-stressors into adverse job outcomes. (Gaudioso <i>et al.</i> , 2017)  The mixed blessing of cyberloafing on innovation performance during the COVID-19 pandemic (Zhong <i>et al.</i> , 2022)
Management research review	1	Do employees' private demands lead to Cyberloafing? The mediating role of job stress (Koay, 2017)
Internet research	2	Workplace ostracism and cyberloafing: a moderated-mediation model (Koay, 2018)  The effects of abusive supervision, emotional exhaustion and organizational commitment on cyberloafing: a moderated mediation

		examination (Lim <i>et al.</i> , 2021)
Journal of Business Research	1	The bright and dark sides of social cyberloafing: Effects on employee mental health in China (Wu <i>et al.</i> , 2020)
Education and Information Technologies	1	Nexus among cyberloafing behaviour, job demands and job resources: A mediated-moderated model (Elrehail <i>et al.</i> , 2021)
Sustainability	1	Perceived Stress and Cyberloafing among College Students: The Mediating Roles of Fatigue and Negative Coping Styles (Chen <i>et al.</i> , 2021)
Head and face medicine	1	Association between problematic social media use and memory performance in a sample of Lebanese adults: the mediating effect of depression, anxiety, stress and insomnia (Dagher <i>et al.</i> , 2021)
Human resource development quarterly	1	The paradoxical effect of responsible leadership on employee cyberloafing: A moderated mediation model (Zhu <i>et al.</i> , 2021)
Asian Education and Development Studies	1	Impact of COVID-19 social media news on employee behaviour: the mediating role of psychological well-being and depression (Anwar <i>et al.</i> , 2022)
International Journal of social science and business	1	The Effect of Role Ambiguity and Organizational Justice on Cyberloafing with Job Stress as a Mediation Variable (Megaputri and Suharti, 2022)
Journal of Occupational Health Psychology	1	Browsing Away From Rude Emails: Effects of Daily Active and Passive Email Incivility on Employee Cyberloafing (Zhou <i>et al.</i> , 2022)
International Journal of environmental research and public health	1	The Influence of Technostress on Cyberslacking of College Students in Technology-Enhanced Learning: Mediating Effects of Deficient Self-Control and Burnout (Li and Liu, 2022)
Asia Pacific International Conference on Industrial Engineering and Operations Management	1	Impact of Organizational Justice, Abusive Supervisor, and Self-control on Cyberloafing Behavior During Covid-19 Pandemic with Work Stress as a Mediation Variable: Study on Travel Companies in South Jakarta (Rahmadi and Yenita, 2022)
Frontiers in Public Health	1	College students' Cyberloafing and the sense of meaning of life: the mediating role of state anxiety and the moderating role of psychological flexibility (Li <i>et al.</i> , 2022)
The Asia-Pacific Education Researcher	1	Social media addiction and its impact on college students' academic performance: The mediating role of stress. Zhao (2023)
Jurnal Akademi Akuntansi	1	Performance of accounting teachers and education staff: the role of cyberloafing and work stress (Malik, 2023)
Conference on economic and business innovation	1	The effect of cyberloafing and work stress on teachers and education performance (Rohmah, <i>et al.</i> , 2023)
European Journal of Educational Research	1	The Impact of Academic Stress on Cyberloafing with Fatigue as a Mediating Variable: A Study of Students in Bandung City-Indonesia During a Pandemic (Simatupang and Margaretha, 2023)
Jurnal Aplikasi Manajemen dan Bisnis	1	Cyberloafing behaviour: the determinant factors related to work Stress and workload in the banking sector (Novianti and Roz, 2023)
International journal of health sciences	1	The alienated employee: The role of cyberloafing in coping with workplace incivility in the manufacturing sector of Pakistan (Aftab and Waseem, 2023)
International journal of Environmental research and public health	1	The Relationship between Competitive Class Climate and Cyberloafing among Chinese Adolescents: A Curvilinear Moderated Mediation Model (Peng <i>et al.</i> , 2023)

Source: Developed by researchers based on literature (2024)

The above indicates the dearth of research on the mediating effect of stress on the relationship between cyberloafing and job performance.

## DISCUSSION

The most important aspect of this review is that it has been able to highlight novel gaps that exist in current literature leading to a pragmatic conceptual framework that can be

tested in the future. The identified gaps are given below.

### Identification of Gaps in Developing the Conceptual Framework

Gap 1: Empirical gap: The absence of empirical evidence in past research is an empirical gap (Miles, 2017). The current empirical research lacks studies related to

cyberloafing and job performance with stress as a mediator. Extant research with stress-related mediators is on strain facets, fatigue, job stress, emotional exhaustion, depression, anxiety, stress, work stress, state anxiety, negative emotions and perceived stress with cyberloafing either as a dependent or independent variable.

Among them, mediators such as job stress, emotional exhaustion, fatigue, depression, and anxiety were found to have mediated the relationships they functioned with (koay *et al.*, 2017, 2018; Wu *et al.*, 2020; Elrehail *et al.*, 2021; Lim *et al.*, 2021; Aftab and Further, there have been instances where job stress, work stress and fatigue did not mediate relationships in which cyberloafing functioned as an independent or dependent variable (Megaputri and Suharti, 2022; Rahmadi and Yanita, 2022; Malik, 2023; Rohmah *et al.*, 2023; Waseem, 2023)).

Hence, an empirical gap is visible in research related to stress mediating the relationship between cyberloafing and job performance.

Gap 2: Knowledge gap: A knowledge gap is the lack of knowledge in the actual field of study in prior research (Miles, 2017). The mediators noted in the extant research are not specifically on stress, and cyberloafing and job performance do not serve as the independent and dependent variables, respectively.

In the current literature, mediators have been job stress, work stress, perceived stress and emotional exhaustion, and they have mediated the relationships in which cyberloafing functioned as an independent or dependent variable. However, there are a few instances where job stress, work stress and fatigue did not mediate such relationships as noted above.

Similarly, strain facets also mediated the relationship between techno-overload and memory performance (Gaudioso *et al.*, 2017) and depression, anxiety and stress mediated the relationship between problematic social media use and memory performance (Dagher *et al.*, 2021).

As such, there is a clear knowledge gap related to the mediating role of stress on the relationship between cyberloafing and job performance.

Gap 3: Population gap: A population gap exists when there is an underserved population in research (Miles, 2017).

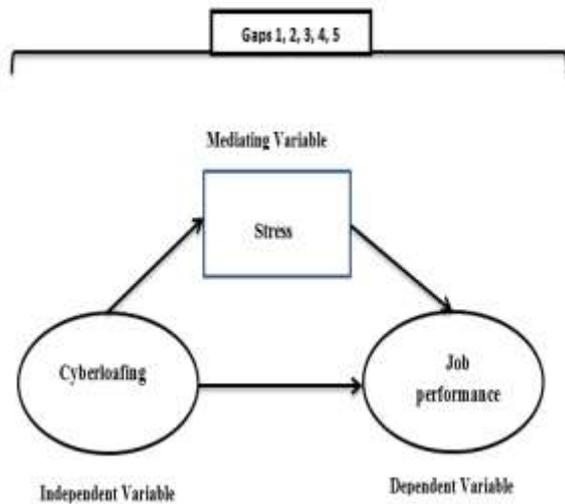
The current research with stress-related mediators with cyberloafing functioning as an independent or dependent variable has concentrated on cohorts such as ICT sector employees in Malaysia (Koay *et al.*, 2017), faculty members in a higher education institute in Pakistan (Elrehail *et al.*, 2021), listed companies in Malaysia (Lim *et al.*, 2021), undergraduates in China (Chen *et al.*, 2021), from the civil service in Indonesia (Megaputri and Suharti, 2022), middle school teachers in Indonesia (Rohmah, 2023).

However, no research related to cyberloafing and job performance with stress as a mediator is available in current research related to any specific cohort, leading to a population gap in the literature.

Gap 4: Evidence gap: An evidence gap is a void when there are contradictions in the findings of past research (Miles, 2017). Literature related to stress as a mediator with cyberloafing and job performance as the independent and the dependent variables, respectively, are limited, as noted above. Available researches focus on mediators related to different forms of stress and not stress as a variable. Hence, an evidence gap is visible in the current scholarly work.

Gap 5: Practical Knowledge gap: Muller-Bloch and Kranz (2015) categorized this gap as action knowledge conflict, where the actual behaviour of professionals appears to be different from what has been observed thus far.

As noted above, at present, literature related to the mediating effect of stress on the relationship between cyberloafing and job performance is scarce, and what is available dwells on constructs that are related to stress, which serves as a mediator in the above relationship where cyberloafing functions as either the dependent or the independent variable. Hence, this dearth of research has created a practical-knowledge vacuum that needs addressing, as findings are likely to be different from what is available. The identification of the above gaps would lead to the conceptual framework given below for future research. Refer to Figure 1.



**Figure 1: The pragmatic conceptual framework**

Source: Developed by researchers based on literature

## CONCLUSIONS

The objectives of this study were to identify research gaps on the mediating role of stress on cyberloafing and job performance, to identify relevant theories related to the concepts and to develop a conceptual framework that can be tested empirically in global contexts in the future (Figure 1). The review has been able to identify five gaps in the current literature, develop a conceptual framework and highlight novel theories related to the concepts.

The boundaries of variables identified here are a vibrant contribution to the body of knowledge in human resources management literature as it has identified the gaps in knowledge in the moderating effect of stress on cyberloafing and job performance, which has not been explored thus far. Testing this framework globally will help to highlight the mediating effect of stress on the above relationship.

Although this study is limited to the identification of gaps and theories related to the concepts and developing a conceptual model, this framework has an enormous potential for testing it in various global contexts through future studies.

Further, this model is likely to establish a new direction for future research in understanding the mediating impact of stress with a moderator variable in various global contexts.

Further, there can be comparative studies between industries, such as manufacturing and services in future research. Such an understanding will make significant contributions to the knowledge of Human resources management in the future.

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