

Article

# The Effect of WhatsApp Usage on Employee Innovative Performance at the Workplace: Perspective from the Stressor–Strain–Outcome Model

Nur Muneerah Kasim <sup>1,\*</sup>, Muhammad Ashraf Fauzi <sup>1</sup>, Muhammad Fakhru Yusuf <sup>1</sup> and Walton Wider <sup>2</sup><sup>1</sup> Faculty of Industrial Management, University Malaysia of Pahang (UMP), Gambang 26300, Pahang, Malaysia<sup>2</sup> Faculty of Business and Communications, INTI International University, Nilai 71800, Negeri Sembilan, Malaysia

\* Correspondence: nur.muneerah89@gmail.com

**Abstract:** Social media applications have increasingly become a valuable platform for personal communication and knowledge sharing in working life. Several researchers have considered the direct role of social media usage in influencing job performance. However, limited studies explore how social media use may impact employees' job performance, especially in innovativeness. Moreover, inconsistencies in the findings exist in the literature regarding whether social media improves employees' job performance or causes harm. By adapting the stressor–strain–outcome (SSO) model, the present study investigates how WhatsApp use at work can predict social media overloads that might induce technostress and, subsequently, affect employees' innovative job performance. Thus, 206 Malaysian employees from the government and private sectors participated in this study and the data were analyzed using partial least squares structural equation modeling (PLS-SEM). The findings show that social media, predominantly WhatsApp, used at work has a mild but statistically significant influence on information overload, communication overload, and social overload. In addition, information overload and communication overload positively influence technostress, except for social overload. Subsequently, technostress does not have an impact on innovative job performance. This study provides theoretical and practical implications for extending the knowledge and mitigating plans and efforts to improve employees' performance at work. Therefore, this study helps mitigate the dearth of research pertaining to the roles of social media use at work on employees' innovative job performance.

**Keywords:** social media; information overload; communication overload; social overload; technostress; innovative job performance

**Citation:** Kasim, N.M.; Fauzi, M.A.; Yusuf, M.F.; Wider, W. The Effect of WhatsApp Usage on Employee Innovative Performance at the Workplace: Perspective from the Stressor–Strain–Outcome Model. *Behav. Sci.* **2022**, *12*, 456.

<https://doi.org/10.3390/bs12110456>

Academic Editor: Gianluca Serafini

Received: 2 August 2022

Accepted: 22 September 2022

Published: 16 November 2022

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Social media has countless users worldwide and the number is constantly growing. The definition of social media varies [1]; according to [2], the definitions of social media presented in the literature and the commonalities among current social media services are: (1) social media services are currently Web 2.0 Internet-based applications; (2) user-generated content is the lifeblood of social media; (3) individuals and groups create user-specific profiles in an app designed and maintained by a social media service; and (4) social media services facilitate the development of social networks online by connecting a profile with those of other individuals or/and groups. Social media functionalities are not only traditionally designed for social networking purposes, but are also widely used for business and work purposes. Hence, many available social media platforms are widely used by organizations for official purposes, including Facebook, WeChat, DingTalk, WhatsApp, Twitter, blogs, YouTube, and photo-sharing sites [3,4].

Social media usage at work is regarded as a form of computer-mediated communication adopted by employees for work-related purposes [4,5], personal use [6,7] or both

[8,9]. The rising trend of social media use at work has influenced employees to connect with social media, as it integrates with the routine activities of employees' lives that directly affect their behavior [10]. Abundant research has discovered that social media use at work could enhance individual job performance, job satisfaction, job productivity, and work engagement as well as strengthen and maintain professional networks within or outside organizations [11–14].

Despite the potential benefits of using social media, scholars from several disciplines, including health, psychology, and computer–human behavior, have started to recognize the need to understand the potentially harmful and unintended consequences of social media usage in the workplace. As such, [15] mentioned that technology usage could have negative effects once it exceeds optimal-level usage. Individuals who continuously use social media tend to suffer from social media overload [16,17]. With the growing number of social media users and their activity levels, a large volume of information and communication can be generated that requires users to process it, which indirectly leads to the issues of overload on social media users [18]. This unpleasant condition is more likely regarded as a major techno-stressor that could negatively impact employees' job performance [7,19]. Hence, there is a phenomenon of social media overload becoming more common, in parallel with social media growth.

Considering social media overload as the antecedent of the adverse outcomes of social media usage, the literature on social media overload has shown the indirect effect on technostress, social media fatigue, and social media exhaustion that subsequently lead to adverse outcomes, such as poor academic performance [20,21], discontinuous usage intention [4,22], and psychological issues [23–26]. Moreover, [27] found that employees who experienced social media overload suffered from social media exhaustion, leading to low job performance. Undoubtedly, social media overload can act as a specific stressor for technology use that induces strain, leading to adverse behavioral, psychological, and physiological outcomes.

Despite the existing body of knowledge, our understanding of social media overload is still constrained by some persisting gaps in the social media literature. The potential work-related consequences of social media stressors, especially in innovative job performance, remain understudied [19,22]. Most prior studies on social media overload concentrated more on general social media users [28–30] and students [31,32] rather than employees. Furthermore, studies on the different dimensions of overload remain scarce [30]. In the context of social media, the technostress associated with social media use has been studied primarily through the consequences of behavioral and psychological response [33–36] and little attention, to date, has been paid to the potential work-related outcomes, such as innovative job performance. Thus, this study provides a detailed investigation into how the association between social media use at work and social media overload can induce psychological strain that interferes with employees' innovative job performance. The study focuses specifically on the use of WhatsApp in the Malaysian context.

The growing number of social media users, especially WhatsApp users, among employees has led to the phenomenon of social media overload. A large volume of information, communication, and social interaction may be generated from personal or work purposes, or both, which requires employees to process this information indirectly and excessively. Facing the same problems as other emerging technologies, social media use in the workplace has become contentious [9]. In addition, previous studies have shown inconsistent or mixed findings regarding whether social media use at work can increase or hinder employees' job performance [1,3,27,37]. This study argues that this is a critical gap, because personal social media and smartphone use have significantly increased during working hours [38]. In consequence, employees cannot cope with this stressful situation, which may induce employee strain that turns into technostress. Hence, this study explores this undesirable situation by adapting the stressor–strain–outcome (SSO) model. Through the SSO model, the relationships between the different dimensions of social

media overload are tested for their influence on technostress and, subsequently, the impact of social media overload on employees' innovative job performance.

## 2. Literature Review

### 2.1. Underpinning Theory

The SSO model was initially developed by [39] to explain the stress process by determining how different stressors indirectly affect behavioral outcomes. The model has been applied to similar principles and concepts based on the transactional view of stress [30]. In addition, the SSO model has been extensively used in social media research to examine stress-related conditions, among other outcomes [16,20,30,40,41]. Basically, the model consists of three key aspects, namely (a) stressor, (b) strain, and (c) outcomes. The sequential process in the SSO model shows that the stressor will indirectly affect the strain and subsequently produce a specific outcome.

Within the SSO model, the stressor can be conceptualized as the environmental stimulus (emotional and behavioral), considered problematic [42], which appears irksome, annoying, or disruptive to social media users [16]. Meanwhile, the strain most often occurs due to the imbalance between the person's situation and environmental demands [20]. The strain is defined as the psychological outcomes or the adverse emotion that negatively reacts to the environmental stimulus and mediates the effects of stressors on the specific outcomes [21]. Further, the outcome refers to a decrement in physical, behavioral, and psychological functioning, productivity as well as performance of an individual due to strain [42,43]. The SSO model is employed by considering social media overloads as stressors that induce employees' strain, which refers to technostress, subsequently affecting their outcomes (innovative job performance).

Even though other theoretical models, such as the stimulus–organism–response or the transaction theory of stress, have been adopted in social media research, this study chooses the SSO model as a theoretical framework due to the underlying principles of the SSO model that are in line with the majority of technostress research [30,44–47]. In addition, it provides a deeper explanation of stress-related situations and the outcomes by examining the link between a person and their situation, which is underpinned by psychological strains and the changes an individual adopts to their behavioral outcomes in order to avoid potentially detrimental consequences these strains may cause [43].

#### 2.1.1. Stressor (Social Media Overloads)

With the growing number of social media platforms, users will be overloaded and overwhelmed by the amount of time spent online. In the context of this study, this undesirable condition is characterized as WhatsApp overload. Scholars have theorized and empirically validated the dimensions of social media overloads in a different study context. However, studies on social media as determinants of social media overload in the workplace remain scarce [19,27]. The potential work-related consequences of social media stressors, especially in the context of innovative job performance, have remained understudied. In addition, most prior studies on social media overload have been concentrated more on generic social media users [28–30] and students [31,32] compared to employees at work. Furthermore, studies on WhatsApp as the primary social media use are scarce, presenting a significant gap in the literature.

This study considers social media overload a significant techno-stressor that could negatively impact employees' job performance [7,19]. This suggested that WhatsApp overload is notably a substantial source of workplace stress due to its widespread usage. WhatsApp use at work can increase the risk of suffering from psychological consequences caused by social media overloads. Furthermore, studies on the various dimensions of social media overload, including communication overload, information overload, system, and social overload, are scarce [30]. The interconnection of the different social media overloads on employees' job performance remains limited. Therefore, this study offers a

significant extension of social media overload as a consequence of WhatsApp usage consisting of communication overload, information overload, and social overload as representative stressors in understanding the psychological mechanism underlying technostress on employees' innovative job performance.

### 2.1.2. Strain (Technostress)

Technostress is considered a modern disease that results from an individual inability to cope or adapt with new technologies in a healthy manner. In addition, technostress can be explained as a stress response that negatively impaired user's physical, psychological, or behavioral state as a result of excessive technology usage [48]. The most common psychological consequences of technostress are burnout, anxiety, depression, and perceived social pressure, all of which have a detrimental impact on an individual's productivity [49]. Furthermore, individuals who experience technostress physically tend to feel lightheaded, sweat, or experience heavy breathing [50]. Thus, this study will discuss the effect of social media overloads on employees' technostress predicted by WhatsApp use at work.

### 2.1.3. Outcome (Innovative Job Performance)

In today's digital era, social media is recognized as a form of computer-mediated communication that strongly influences employees' job performance. However, several studies have shown inconsistent findings with job performance, as existing literature has discovered different results on the impact of social media use on job performance. For instance, recent studies by [1,3,51] discovered that social media usage positively increased employees' job performance. In contrast, empirically, social media use at work was associated with adverse job performance [19,23]. Despite the prevalence of prior studies on social media use at work, empirical evidence suggests that social media usage does not influence employees' job performance [14]. Due to the inconsistent findings, this study attempts to fill in the gap in the body of knowledge on employees' use of WhatsApp at work. The findings would explain the dual effect of WhatsApp usage on employees' innovative job performance

## 2.2. Hypothesis Development

### 2.2.1. Social Media Use and Information Overload

Employees can solve problems and make decisions by searching for information through social media for work-related purposes. It provides accessibility to massive amounts of information and expands their mental capability [52]. In consequence, they will spend more time and effort in screening excessive information in order to obtain useful information related to job purposes [19]. Some scholars have discovered the association between social media use and information overload. For instance, [27] found that Korean office workers experienced information overload from social media use for work-related purposes, specifically mobile instant messaging services (MIMs) during working hours, which significantly increased employee burnout and turnover intention. As social media platforms on smartphones provide instant access to information around the clock, users are inundated with irrelevant information about their personal lives, events, group conversations, brand-related promotions and news [53]. Undoubtedly, social media use at work may result in information overload, as employees are exposed to overwhelming volumes of information that exceed their cognitive capabilities to process the information. Therefore, the first hypothesis is presented as:

**H1:** *Social media use at work positively influences employees' information overload.*

### 2.2.2. Social Media Use and Communication Overload

The existence of multiple communication channels from various social media platforms may lead to frequent communication from different users, i.e., colleagues, family, and friends. Constant communication via social media may distract their attention and cause excessive interruptions in their work activities, resulting in low productivity [15,16]. As a consequence, it causes communication overload, which increases the cognitive burden on the user and leads to interruption, consequently impeding work tasks [54]. Previous studies empirically discovered the association between social media use and communication overload among employees. For instance, [19] found that employees in China suffered from communication overload, significantly predicted by social media use in organizations, which interfered with their work performance. Employees who experienced communication overload as a result of social media use for work-related purposes are more likely to increase burnout and employee turnover intention [27]. In addition, employees may find it difficult to refocus their attention since handling online communications and other tasks requires significant cognitive effort [16]. Therefore, the second hypothesis is proposed:

**H2:** *Social media use at work positively influences employees' communication overload.*

### 2.2.3. Social Media Use and Social Overload

Pervasiveness social media usage has integrated into employees' social life, socialization, and networking via social media within the organization [4,55]. During work, employees encounter social overload when they continuously receive communication from colleagues, friends, and family. This intensive social interaction leads to social burden on users [16]. This phenomenon requires users to invest effort and time in responding to social requests and interactions. The authors of [19] reported that employees in China who excessively engage in social media suffered from social overload. The authors of [35] empirically addressed social overload as a dark side of technology associated with people's lives in social media. Thus, this study proposed that social media use at work influences social overload among employees. The third hypothesis is as follows:

**H3:** *Social media use at work positively influences employees' social overload.*

### 2.2.4. Information Overload and Technostress

Employees who experience information overload are more likely to suffer from technostress when they receive a high volume of information from different social media platforms that exceed their cognitive limit for information processing. Several studies have discovered that information overload is a significant problem related to technostress in the workplace. Past research shows that employees who were excessively occupied with social media at work experienced information overload, resulting in technostress in the form of social media exhaustion [19]. Furthermore, [53] revealed that employees in South Asia experienced social media fatigue in the workplace due to information overload. Indeed, employees need to increase their information processing capabilities to sift through and organize overwhelming information from social media, which may lead to technostress. The following hypothesis is deduced as:

**H4:** *Information overload positively influences employees' technostress.*

### 2.2.5. Communication Overload and Technostress

Communication overload using social media has been identified as a stressor that negatively impacts users' psychological states [32,53,54]. Previous studies have empirically discovered that communication overload induced technostress among employees in the work setting [56,57]. Employees bear communication overload when they received excessive demands for communication through social media and were positively associated with social media exhaustion [19]. Individuals encountering excessive

communication from coworkers, family, and friends face communication overload, which results in loss of concentration and interrupting work tasks. Subsequently, it leads to technostress due to exhaustion and overwhelming feelings as they cannot handle the situation effectively. Hence, the next hypothesis is denoted as:

**H5:** *Communication overload positively influences employees' technostress.*

#### 2.2.6. Social Overload and Technostress

The pervasiveness of social media has integrated employees' social life, as they have a wide range of connections in social media, including socialization and networking within the organization [37]. In this situation, users respond to the request for social support as a duty to fulfill their role in giving support in order to maintain a social media relationship [30]. Employees who use social media at work are more likely to experience excessive social demands from other social media users, including coworkers, friends, and family, which increases the risk of suffering from social overload if they are unable to adequately address the problem effectively. When the social requests exceed employees' emotional and cognitive capacity, they may feel stressed, subsequently affecting their work tasks. In this study, social overload is regarded as one of the stressors influencing employees' technostress. Therefore, the following hypothesis is presented as:

**H6:** *Social overload positively influences employees' technostress.*

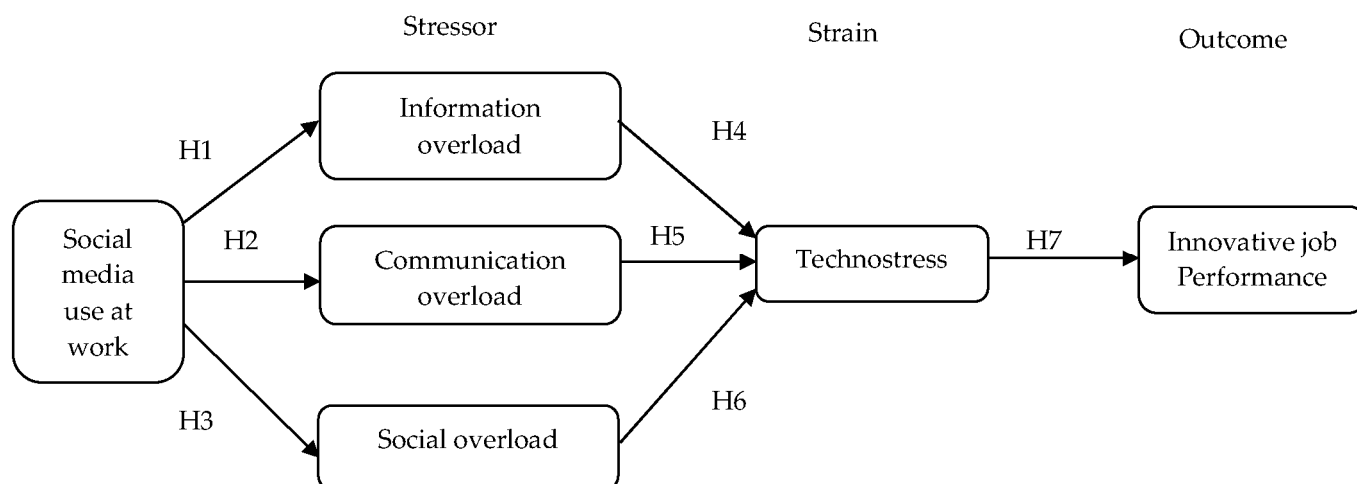
#### 2.2.7. Technostress and Innovative Job Performance

Social media overloads have emerged as part of a stressor that cause users' technostress in the form of exhaustion fatigue. Employees who suffer from overload often feel tired to perform their work task due to information, communication, and social demand, exceeding their cognitive capacities [27,53]. Consequently, they will increase their time, energy, and emotional resources on work tasks. In this regard, exhausted employees do not have sufficient resources to complete the required work task, resulting in a decline in their job performance. Furthermore, social media overloads were found to induce technostress among employees, negatively impacting their job performance [7,19,58,59].

Moreover, technostress has also negatively affected employees' innovativeness due to the imbalanced relationship between environmental demands (social media use) and exceeding their coping abilities. This threat can negatively impair their creative and critical thinking to produce or adopt, promote, and implement novel ideas [50,60,61]. Therefore, it is posited that technostress resulting from social media overloads may reduce innovative performance, as supported by previous studies [60,62]. Therefore, the hypothesis is as follows:

**H7:** *Technostress has a negative influence on employees' innovative job performance.*

Figure 1 presents the conceptual framework of this study.



**Figure 1.** Proposed conceptual framework.

### 3. Research Methodology

#### 3.1. Sampling

Utilizing a quantitative approach, a survey based on a self-administered questionnaire was administered. The samples are composed of Malaysian public and private employees. Since public sector employees are the backbone of the country in providing outstanding public services, implementing measures at the individual level may enhance an organization's overall performance [63,64]. In addition, the government's success largely depends on the employees' ability, high cognitive skills, and work performance in demonstrating their knowledge-based service. However, despite its significance, research on public sector employees' job performance has received little attention [65], especially on innovative performance. In addition, employees from the private sector, specifically GLCs in which Government holds a certain amount of shares, also play a major role in contributing to the economic growth of Malaysia as money, returns, and profits have always been the key elements in the private sector [66]. Thus, this study focuses on employees from the public and private sectors.

A quota sampling frame was applied to ensure sample representation within the population. The employees were divided into government agencies, ministries, statutory bodies, and the private sector (government-linked companies, GLCs) based on a 40:40:20 ratio, respectively. This study used the G\*Power application to draw the sample size from the target population. Further, with a power of 0.8 and an effect size of  $f^2 = 0.15$ , in addition to the predictor of the variable with the highest value of 3, the minimum sample was determined as 77.

#### 3.2. Inclusion and Exclusion Criteria

In this study, there are three inclusion criteria for the target population: (1) government and private sector employees, (2) utilized social media for work purposes, and (3) used only WhatsApp, Facebook, Twitter, LinkedIn, or Telegram. Firstly, employees from government and private (government-linked companies, GLCs) sectors are included in this study. Next, employees who actively use social media to manage work tasks such as communication, offer knowledge-based service, gather essential evidence/information, or professional networking. Lastly, with various social media platforms available for the public, this study only focuses on the employees who utilized WhatsApp, Facebook, Twitter, LinkedIn, or Telegram for work and professional purposes. Meanwhile, the exclusion criteria for the target population are job level and use of the organizational account. As this study examines the disadvantages and advantages of social media use at work on innovative job performance, the position level is excluded due to the nature of the job related to knowledge-based service. Employees who use organizational accounts are

excluded from the target population because they may cause an invasion of the organization's privacy and lead to conflictual situations in the workplace. Table 1 sets out the inclusion and exclusion criteria of the sampling.

**Table 1.** Inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
1 Government and private employees	Job position
2 Actively used social media for work purposes.	Use an organizational account.
3 Use WhatsApp, Facebook, Twitter, LinkedIn, or Telegram.	

### 3.3. Data Collection Procedure

An online survey was utilized for data collection. The target population was employees who use social media for work-related purposes. The questionnaires were distributed through email to 1500 respondents. Respondents filled in a Google form attached in the email. To increase response rate, follow-up email was sent to the participants. To this end, 208 responses were obtained within three months (November 2021 to January 2022), with a response rate of 13.8%.

### 3.4. Measurement

The measures of all constructs in this study were adapted from previously validated scales and items. First, the three items for social media use at work were adapted from [12]. Second, information overload was measured using four items adapted from [67]. Third, communication overload adapted the five items from [16] and social overload was measured using five items adapted from [19]. Next, technostress was measured using five items adapted from [68]. Lastly, the measurement for innovative job performance was adapted from [11]. All the items were rated on a 7-point Likert scale. In summary, the list of measurement items for the constructs is presented in Appendix A. Meanwhile, the list of variables included with the number of items assessed in the present study is depicted in Table 2.

**Table 2.** The list of variables measured in this study.

Constructs	Number of Items	Source Adaption	Unit Analysis
Social media use at work	3	[12]	Professional employees were working in higher education from China.
Information overload	4	[67]	Social media users who used Qzone from China.
Communication overload	5	[19]	Students in a Chinese university.
Social overload	5	[19]	Chinese employees from various industries (e.g., education, manufacturing, services etc.).
Technostress	5	[68]	Frontline service employees.
Innovative job performance	6	[11]	Employees of multinational Information Technology company.
Total	28		

### 3.5. Data Analysis

The data analysis began with descriptive statistics and this study utilized SPSS version 22 (IBM Corp., New York, U.S) to measure the frequency of background characteristics. In addition, this study applied the PLS-SEM approach in analyzing the actual data using [69] SmartPLS 3.0 software. The PLS-SEM method helps estimate complex structural models with many constructs, indicators, and/or model relationships, as well as its ability to adequately use non-normal data [70]. In addition, it is able to perform exploratory research in developing theory and estimate model that commonly displays a high degree of statistical power compared to the CB-SEM [71–73]. In addition, advanced model elements, such as hierarchical component models, moderator variables, or nonlinear



relationships, can be handled flexibly using PLS-SEM [74–76]. Thus, in exploring the association of social media and innovative job performance in this study, PLS-SEM is deemed appropriate.

## 4. Results

### 4.1. Data Preparation

Data screening and cleaning will result in data exclusion. The reasons for data to be excluded are because of the straight lining, missing values, and redundant responses from the same respondents. The first step in data cleaning is checking the blank response among the collected responses. To treat the blank responses, this study used the formula COUNTBLANK (item1 to item28) in Microsoft Excel (Microsoft Corporation, Washington, U.S) before transferring the data into SPSS. The results found no blank response in the data, confirming the respondents answered all questions. Thus, no missing value data issues were reported in this study since the questions in the Google form were arranged in mandatory responses. The data were automatically stored in the Google form. Hence, treatment for missing values is not implemented in this study.

The authors of [77] explained that straight lining occurs when respondents provide identical answers to the questions using the same response scale. This study treated the straight-lining assessment by applying the formula standard deviation function in Microsoft Excel 2016. Using the formula of STDEV (item1 to item28), 2 of 208 responses were detected with straight lining with zero values. Therefore, these two responses were excluded from further analysis, leaving 206 remaining responses to be analyzed.

### 4.2. Demographic Information

Table 3 presents the demographic information of the 206 respondents. With reference to gender, 46.1 percent (95) were male, whereas 53.9 percent (111) were female. In terms of education, the majority of respondents (57.8 percent) are Bachelor's degree holders and Master's degree holders (23.3 percent). Furthermore, 28.2 percent of respondents have worked for more than 11–15 years and 6–10 years (19.9 percent). The social media platforms frequently used are WhatsApp (88.3 percent) and Facebook (5.8 percent). As expected, Malaysian employees mostly use WhatsApp as a medium to communicate and interact for work-related purposes due to the compliance, internalization, and identification that influenced the employees to use WhatsApp in their routine work. In addition, The Digital News Report (2017) found that Malaysians are the world's largest users of WhatsApp at 51%. This result suggests that the predominantly utilized social media platform by Malaysian employees in the workplace is WhatsApp.

**Table 3.** Demographic Information.

Categories	Type	Frequency ( <i>n</i> )	Percentage (%)
Gender	Male	95	46.1
	Female	111	53.9
Age	25–30	29	14.1
	31–35	38	18.4
	36–40	48	23.3
	41–45	45	21.8
	46–50	18	8.7
	51–55	9	4.4
	56–60	18	8.7
	Above 60	1	0.5
Level of education	SPM/A-level/Certificate	5	2.4
	STPM	2	1.0
	Diploma	28	13.6
	Degree	119	57.8
	Master	48	23.3

	PhD	4	1.9
Years of working	5 years and below	32	15.5
	6–10 years	41	19.9
	11–15 years	58	28.2
	16–20 years	36	17.5
	21–25 years	14	6.8
	26–30 years	8	3.9
	More than 30 years	17	8.3
Sector	Government, ministries	82	40.0
	Government, statutory bodies	82	40.0
	Private, GLC	42	20.0
Social media platforms	WhatsApp	182	88.3
	Telegram	2	1.0
	Facebook	12	5.8
	Twitter	1	0.5
	Instagram	3	1.5
	Others	6	2.9

4.3. Common Method Bias

A statistical remedy was employed in this study to manage common method bias, which is common in behavioral research [78,79]. As such, [80] suggested that in PLS-SEM, a full collinearity test can be used to assess common method bias and a variance inflation value (VIF) below 3.3 indicates the dataset does not suffer common method bias. There is no significant issue in the dataset, as the VIF values of all constructs are lower than 3.3, as shown in Table 4.

Table 4. Full Collinearity.

Construct	Social Media Use at Work	Information Overload	Communication Overload	Social Overload	Technostress	Innovative Job Performance
VIF	1.123	2.414	2.911	1.765	1.571	1.038

VIF = variance inflation factor.

4.4. Measurement Model

The measurement model is the first stage of using PLS-SEM that specifies the relations between the latent variable (construct) and its indicator (manifest variable). The purpose of measurement model analysis is to ensure all the required relationships between the latent variables and the indicator are met by the model assessment [75]. For construct reliability and validity, the convergent validity is evaluated by assessing the factor loadings and average variance extracted (AVE). Cronbach’s alpha and composite reliability are for the internal consistency reliability [74,81]. Table 5 shows that all the factor loadings exceed the minimum of required value 0.6 for an exploratory study [82]. Meanwhile, the Cronbach’s alpha and composite reliability for all constructs were higher than the required value of 0.7 [82]. Table 5 presents the measurement model’s construct validity and reliability.

Table 5. Reliability and validity analysis.

Construct	Items	Loadings	Cronbach	Composite Reliability (CR)	Average Variance Extracted (AVE)
Social media use at work	SM 1	0.857	0.871	0.921	0.796
	SM 2	0.911			
	SM 3	0.908			
Information Overload	IO1	0.899	0.848	0.899	0.691
	IO2	0.896			
	IO3	0.813			
	IO4	0.702			
Communication Overload	CO1	0.843	0.941	0.936	0.744

	CO2	0.837			
	CO3	0.834			
	CO4	0.909			
	CO5	0.886			
Social Overload	SO1	0.911	0.941		
	SO2	0.896		0.955	0.810
	SO3	0.894			
	SO4	0.913			
	SO5	0.886			
Technostress	TECH1	0.863	0.961		
	TECH2	0.954			
	TECH3	0.954		0.970	0.866
	TECH4	0.935			
	TECH5	0.941			
Innovative job performance	IP1	0.825	0.941		
	IP2	0.803			
	IP3	0.804		0.945	0.743
	IP4	0.921			
	IP5	0.927			
	IP6	0.883			

Discriminant validity is essential to ensure that each variable is distinct and not related to each other [74]. This study applied the Heterotrait–monotrait (HTMT) ratio of correlation, which has better performance in measuring the discriminant validity in variance-based SEM compared to the cross-loadings and Fornell Larcker criterion [83]. The authors of [84] stated that a cut-off value of HTMT for conceptually dissimilar constructs is less than 0.85, while conceptually similar constructs are less than 0.9, establishing the discriminant validity that reliably distinguishes between those pairs of latent variables, depending on the study context. Table 6 shows that all the correlation values are below 0.85, suggesting that the variables in this study possess satisfactory discriminant validity.

**Table 6.** Heterotrait–Monotrait ratio of correlations (HTMT).

Construct	Communication Overload	Innovative Job Performance	Information Overload	Social Media Use at Work	Social Overload	Technostress
Communication Overload						
Innovative job performance	0.094					
Information Overload	0.830	0.082				
Social media use at work	0.242	0.195	0.257			
Social overload	0.698	0.086	0.601	0.176		
Technostress	0.559	0.058	0.606	0.048	0.328	

#### 4.5. Structural Model

This study implemented Mardia's multivariate kurtosis to measure the normality of data. As [85] suggested, this study uses the online tool to calculate univariate/multivariate skewness and kurtosis at <http://webpower.psychstat.org/models/kurtosis/> (accessed on 21 August 2022). The results indicate that data were not multivariate normal, as shown by the skewness ( $\beta = 8.351$ ,  $p < 0.01$ ) and kurtosis ( $\beta = 62.962$ ,  $p < 0.01$ ). This calls for using a nonparametric analysis tool, SmartPLS 3.2.8, to perform bootstrapping.

Following the suggestion of [70], a 5000 bootstrapping re-sampling technique was performed to assess the structural model based on the path coefficient and statistical significance [86]. To test the model with different research hypotheses, the path coefficient of exogenous to endogenous variables by the  $\beta$ -value,  $t$ -values, and squared multiple correlation ( $R^2$ ) values of explained variance on the endogenous variable were evaluated. Table 7 shows the result of  $R^2$ ,  $f^2$ , and  $Q^2$ ; meanwhile, Table 8 displays the structural analysis results and decision on hypotheses, while Figure 2 illustrates the structural path.

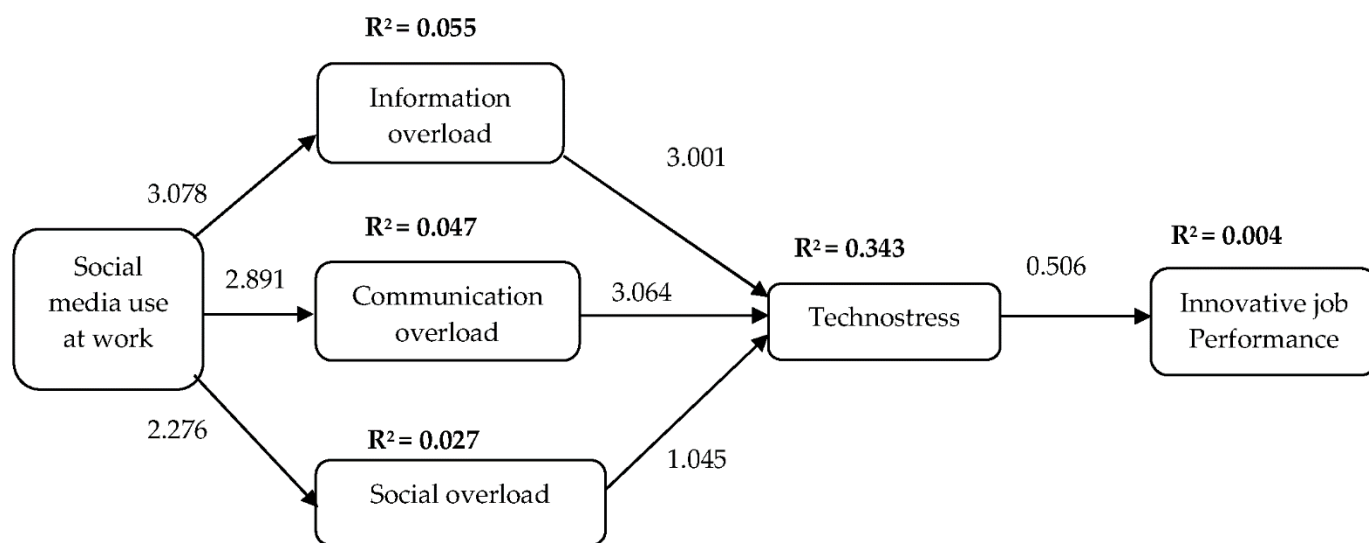


Figure 2. Structural Model.

Table 7. The result of the coefficient determination (R Square), effect size (f Square), and predictive relevance (Q Square).

Hypothesis	Relationship	R <sup>2</sup>	f <sup>2</sup>	Q <sup>2</sup>
H1	Social media use at work → Information overload	0.055	0.058	0.031
H2	Social media use at work → Communication overload	0.047	0.049	0.031
H3	Social media use at work → Social overload	0.027	0.028	0.017
H4	Information overload → Technostress		0.082	
H5	Communication overload → Technostress		0.066	
H6	Social overload → Technostress	0.343	0.007	0.270
H7	Technostress → innovative job performance	0.004	0.004	0.000

Table 8. Hypothesis testing.

Hypothesis	Relationship	Path Coefficient ( $\beta$ )	Std Dev	t-Value	p-Value	BCI LL	UCI LL	Decision
H1	Social media use at work → Information overload	0.234	0.076	3.077	0.001	0.109	0.353	Accepted
H2	Social media use at work → Communication overload	0.216	0.076	2.846	0.002	0.089	0.336	Accepted
H3	Social media use at work → Social overload	0.164	0.074	2.212	0.014	0.036	0.278	Accepted
H4	Information overload → Technostress	0.342	0.114	2.999	0.001	0.128	0.506	Accepted
H5	Communication overload → Technostress	0.343	0.112	3.066	0.001	0.158	0.526	Accepted
H6	Social overload → Technostress	-0.089	0.087	1.025	0.153	-0.228	0.056	Rejected
H7	Technostress → innovative job performance	0.065	0.13	0.505	0.307	-0.242	0.155	Rejected

BCI LL = Bias confidence interval lower limit, BCI UL = Bias confidence interval upper limit.

The result shows that five of the seven proposed hypotheses were supported. As hypothesized, H1, H2, and H3 were supported as social media use at work has a positive influence on information overload ( $\beta = 0.234$ ,  $t = 3.078$ ), communication overload ( $\beta = 0.216$ ,  $t = 2.891$ ), and social overload ( $\beta = 0.164$ ,  $t = 2.276$ ). The  $R^2$  of the three variables are 0.055 ( $Q^2 = 0.031$ ), 0.047 ( $Q^2 = 0.031$ ), and 0.027 ( $Q^2 = 0.017$ ), denoting that social media use at work explained 5.5%, 4.7%, and 2.7% of the variance, respectively. Next, H4 and H5 were accepted, which posited that information overload ( $\beta = 0.342$ ,  $t = 3.001$ ) and communication overload ( $\beta = 0.343$ ,  $t = 3.064$ ) showed a significant positive effect on employees' technostress; meanwhile, social overload on employees' technostress was not significant ( $\beta = -0.089$ ,  $t = 1.045$ ), thus, rejecting H6. The  $R^2$  was 0.343 ( $Q^2 = 0.270$ ), indicating that the three overloads explained 34.3% of the variance on technostress. Lastly, H7 ( $\beta = 0.065$ ,  $t = 0.506$ ) demonstrated that technostress was found to be insignificant towards innovative job performance among employees, with an  $R^2$  of 0.004 ( $Q^2 = 0.000$ ), which indicates that technostress explained 0.4% of the variance in innovative performance.

## 5. Discussion

The study utilized the SSO model to examine how social media use at work predicts social media stressors (information overload, communication overload, and social overload), strain (technostress), and, subsequently, relationship on their innovative job performance. First, the study presented the new outcomes since WhatsApp is a predominant social media platform that predicts social media overloads in the Malaysian workplace. The finding discovered its influence on information overload, communication, and social overload. Based on the findings, H1 ( $t = 3.078$ ), H2 ( $t = 2.891$ ), and H3 ( $t = 2.276$ ) showed a  $t$ -value of more than 1.65 and these hypotheses were supported as WhatsApp use at work positively influences information overload, communication overload, and social overload. Even though the findings revealed that the impact of WhatsApp usage is very mild on the three stressors, nevertheless, it significantly stimulates social-media-related overload statistically, hence, contributing to users' technostress. Consistent with prior studies [16,19], pervasive social media access led to technology overload. Due to the integration of social media into work life, employees experience challenges in balancing their professional and private life because work responsibilities may be accessible anywhere and at any time [87]. With the wide range of social features in social media, a large volume of information, communication, and social interaction may be generated for personal and professional reasons, necessitating employees to process and attend to, indirectly leads to social media overload.

Additionally, H4 ( $t = 3.001$ ) and H5 ( $t = 2.891$ ) were accepted as a  $t$ -value of more than 1.65, positing that information overload and communication overload significantly positively affected employees' technostress. The findings of this study show that information overload and communication overload contributed to the pervasive phenomenon of technostress among Malaysian employees. As anticipated, these findings are in line with previous studies and highlight the adverse consequence of information overload and communication overload on individuals' psychological well-being [18,30,54]. Employees who experience information and communication overload are unable to keep up with the high volume of information and communication generated by WhatsApp, as it exceeds their cognitive abilities to process it. This undesirable condition would influence employees' execution and decision-making capability, resulting in technostress [88].

Meanwhile, social overload on employees' technostress was not significant as  $t = 1.045$ ,  $t$ -value  $< 1.65$ , thus, rejecting H6. This study found that social overload did not contribute to employees' technostress. Therefore, this finding is inconsistent with past studies [30,35,67]. Social overload mainly focuses on private activities that can be ignored temporarily during work hours and processed later in the desired sequence, contrary to information overload and communication overload, which must be handled immediately at work due to the association with work tasks [19]. In addition, H7 ( $t = 0.506$ ) was rejected, indicating a  $t$ -value  $< 1.65$ , demonstrating that technostress was found insignificant towards innovative job performance among Malaysian employees. This result suggests that employees showed effective coping strategies for minimizing, tolerating, and coping with technostress related to exceptional work or social demands from WhatsApp at the workplace. With good coping abilities, this strain and technostress had no effect on employees' innovative job performance. Hence, employees can show their creative and critical thinking by producing, adopting, promoting, and implementing novel ideas.

## 6. Conclusions

### 6.1. Theoretical and Practical Implications

By employing the SSO model, this study contributes to the theoretical understanding of the role of social media use among employees in government departments. The present study provides an essential extension of current research in the form of a detailed theoretical understanding of the psychological mechanism underlying employees' work behavior, specifically in innovative job performance. In addition, this study examines the

process of how WhatsApp use at work plays a significant role in employee's innovative job performance from the perspective of SSO. The outcome provides a meaningful theoretical contribution to the literature on work-related stress and the effects of WhatsApp use on employee outcomes at the workplace.

It is possible that employees who use WhatsApp at work may be oblivious to the potential fallout from their social media usage. They view WhatsApp as an integral part of their daily life. Considering the fact that Malaysia constitutes the highest number of internet users in the Southeast Asian region, employees should have a greater insight and understanding of WhatsApp usage and its dual consequences (positive or negative) at the workplace. Employees may implement measures to regulate their habits on WhatsApp use in order to avoid adverse consequences on their work behavior, particularly innovative job performance. In addition, the findings of this study offer management with guidance to adopt an emerging and popular technology, social media, especially WhatsApp, as a medium to foster innovativeness among employees. Such a measure can effectively provide practical insights for management to create new strategies in mitigating issues of personal social media usage at work. In addition, management is able to reinforce existing guidelines or policies surrounding the usage of WhatsApp at work to promote better routine and innovative performance, thus, benefiting organizations and ensuring psychological and mental health for a work-life balance among employees.

#### *6.2. Limitations and Suggestions for Future Work*

Although this study offers valuable insights, certain limitations should also be acknowledged and addressed for future studies. First, given the pervasiveness of social media overload and its effects on employees' innovative job performance, our findings imply that future research should pay closer attention to social media overload, its antecedents, and its outcomes in other types of organizational settings (i.e., private, large corporate organization) or specific industries, such as manufacturing, services, and education. Different contexts would provide a detailed and different understanding of adapting to social media usage, which might influence employees' innovative job performance.

Second, this study highlighted solely on the negative consequences of social media use at work. Future studies should explore both the harmful and beneficial effects of social media use at work by integrating two theories/models (e.g., the SSO model and social capital theory). We believe that researchers in other disciplines can improve the understanding of social media use at work and employees' outcomes by combining theories from different, multiple perspectives.

Third, this study performed a cross-sectional design, in which data were collected from a single source response. Although the statistical result revealed no evidence of common method bias, it is possible that respondents might be unable to provide accurate information when responding to sensitive questions about their physical and mental health. Future scholars should consider applying a mixed-method design by adding interview sessions or observation to accurately measure employees' technostress and innovative job performance.

Next, this study was carried out with users who predominantly utilized WhatsApp as their medium for work-related purposes. Hence, the findings might be restrained and impractical to other social media platforms. Furthermore, the generalizability of the current study is somewhat limited because the interaction on WhatsApp is often limited to close contacts or specific social groups and not intended for the public at large [20]. Therefore, scholars should consider replicating the study method in different social media platforms at work, either for combined or exclusive usage. Then, the different platforms would produce an exact effect of social media usage at work on social media overloads.

This study also has geographical limitations that prevent generalization to other countries. Since this study was performed in Malaysia, the findings only apply to users with comparable demographic information and similar work culture. Thus, scholars

should use this model as a foundation for future studies on similar respondents from different countries to strengthen the results' validity and reliability.

Lastly, future scholars should consider conducting a cross-sectional or longitudinal study by reversing causation in the relationship between social media and stress, especially in the workplace setting. This study focused on the roles of social media toward technostress issues by discussing the consequences of social media use at work. To gain a clear picture of the social-media–technostress link, the direction of social media causing psychological well-being problems might instead be reversed. As [89] mentioned, future research needs to move toward a deeper analysis of the reverse possibility underlying social media use.

Overall, this study presents the exact mechanism of crucial roles of WhatsApp use at work and its influence on employees' innovative performance. The discussion of the findings shows that most of the hypotheses are congruent with prior studies. This study suggests that WhatsApp use at work mildly predicts social media overloads, including information overload, communication overload, and social overload. Furthermore, the findings found that these overloads, except social overload, induced employees' technostress. However, this strain indicates that technostress has not significantly affected employees' innovative performance. The findings of this study provide an essential extension of prior knowledge on the conceptual relationships for social media overloads that were empirically validated in terms of technostress and employee outcomes. Moreover, the outcomes of this study will be of immense benefit to both employees and employers in enhancing the association between social media use at work and increasing employees' innovative job performance.

**Author Contributions:** Conceptualization, N.M.K. and M.A.F.; methodology, N.M.K. and M.A.F.; software, N.M.K. and M.A.F.; validation, N.M.K. and M.A.F.; formal analysis, N.M.K. and M.A.F.; investigation, N.M.K. and M.A.F.; resources, N.M.K. and M.A.F.; data curation, N.M.K.; writing—original draft preparation, N.M.K.; writing—review and editing, M.A.F., W.W. and M.F.Y.; visualization, N.M.K. and M.A.F.; supervision, M.A.F.; project administration, N.M.K.; funding acquisition, M.A.F. All authors have read and agreed to the published version of the manuscript.

**Funding:** Ministry of Higher Education Malaysia under the Fundamental Research Grant Scheme. FRGS RACER/1/2019/SS03/UMP//1 (University Grant no. RDU192619).

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Conflicts of Interest:** The authors declare no conflict of interest.

## Appendix A

**Table A1.** Research instrument.

Item	Original Scale Item	Modified Scale Item
<b>Social media use at work</b>		
SM 1	I often use social media to obtain work-related information and knowledge.	
SM 2	I regularly use social media to maintain and strengthen communication with colleges in my work.	
SM 3	What is your frequency of usage of social media in the work? not at all (1)–frequently(7)	<i>How you rate the usage of Social Media? not at all (1)–frequently(7)</i>
<b>Information Overload</b>		
IO1	I am often distracted by the excessive amount of information in Facebook.	I am often distracted by the excessive amount of information in <i>social media</i> .
IO2	I find that I am overwhelmed by the amount of information that I process on a daily basis from Facebook.	I find that I am overwhelmed by the amount of information that I process on a daily basis from <i>social media</i> .
IO3	I feel some problems with too much information in Facebook to synthesize instead of not having enough information.	I feel some problems with too much information in <i>social media</i> to synthesize instead of not having enough information.

IO4	There is too much information about my friends on Facebook so I find it a burden to process.	There is too much information about my friends on <i>social media</i> so I find it a burden to process.
<b>Communication Overload</b>		
CO1	I receive too many messages from friends through social media.	
CO2	I feel as if I have to send more messages to friends through social media than I want to send.	
CO3	I feel that I generally receive too many notifications on new postings, push messages, and news feeds, among others from social media as I perform other tasks.	I feel that I generally receive too many notifications on new postings, push messages, news feeds, etc. from <i>social media</i> while performing work task.
CO4	I often feel overloaded with social media communication.	I often feel overloaded with <i>communication</i> from social media.
CO5	I receive more communication messages and news from friends on social media than I can process.	
<b>Social Overload</b>		
SO1	I take too much care of my friends' well-being on social media.	
SO2	I deal too much with my friends' problems on social media.	
SO3	My sense of being responsible for how much fun my friends have on social media is too strong.	
SO4	I am too often caring for my friends on social media.	
SO5	I pay too much attention to posts of my friends on social media.	
<b>Technostress</b>		
TECH1	I feel drained from activities that require me to use electronic devices.	I feel drained from activities that require me to use <i>social media</i> .
TECH2	I feel exhausted at the end of the work day from using technology.	I feel exhausted at the end of the workday from using <i>social media</i> .
TECH3	I feel tired from my working with electronic devices.	I feel tired from my working with <i>social media</i> .
TECH4	Working all day with technology is a strain for me.	Working all day with <i>social media</i> is a strain for me.
TECH5	I feel burned out from working with technology.	I feel burned out from working with <i>social media</i> .
<b>Innovative job performance</b>		
IP1	Create new ideas for improvements.	<i>I always</i> create new ideas for improvements.
IP2	Mobilize support for innovative ideas.	<i>I always</i> mobilize support for innovative ideas.
IP3	Search out novel working methods.	<i>I always</i> search out novel working methods.
IP4	Transform innovative ideas into useful applications.	<i>I always</i> transform innovative ideas into useful applications.
IP5	Generate original solutions to problems.	<i>I always</i> generate original solutions to problems.
IP6	Introduce innovative ideas.	<i>I always</i> introduce innovative ideas.

## Reference

- Lee SY; Lee SW. Social Media Use and Job Performance in the Workplace: The Effects of Facebook and KakaoTalk Use on Job Performance in South Korea. *Sustainability* **2020**, *12*, 4052.
- Obar, J. A; Wildman, S. S. Social media definition and the governance challenge-an introduction to the special issue. *Obar, JA and Wildman, S.(2015). Social media definition and the governance challenge: An introduction to the special issue. Telecommunications policy* **2015**, *39*, 745-750.
- Pavithra S; Deepak KV. The effect of social media on employees 'job performance with reference to information technology (IT) sector in Bangalore. *Materials Today: Proceedings* **2020**, *in press*.
- Song Q; Wang Y; Chen Y; Benitez J; Hu J. Impact of the usage of social media in the workplace on team and employee performance. *Information and Management* **2019**, *56*, 103160.
- Braojos J; Benitez J; Llorens J. How do social commerce-IT capabilities influence firm performance? Theory and empirical evidence. *Information and Management* **2019**, *56*, 155-171.
- Andreassen CS; Torsheim T; Pallesen S. Use of online social network sites for personal purposes at work: does it impair self-reported performance?. *Comprehensive Psychology* **2014**, *3*, 01-21
- Brooks S; Califf C. Social media-induced technostress: Its impact on the job performance of it professionals and the moderating role of job characteristics. *Computer Networks* **2017**, *114*, 143-153.
- Benitez J; Castillo A; Llorens J; Braojos J. IT-enabled knowledge ambidexterity and innovation performance in small U.S. firms: The moderator role of social media capability. *Information and Management* **2018**, *55*, 131-143.
- Jafar RMS; Geng S; Ahmad W; Niu B; Chan FT. Social media usage and employee's job performance. *Industrial Management and Data Systems* **2019**, *119*, 1908-1925.
- Maturi, A. (2018, February). The impact of social networking sites on employees' performance. In *2018 15th Learning and Technology Conference (L&T)* **2018**, 14-19. IEEE. doi: 10.1109/LT.2018.8368504
- Ali-Hassan H; Nevo D; Wade M. Linking dimensions of social media use to job performance: The role of social capital. *The Journal of Strategic Information Systems* **2015**, *24*, 65-89.
- Cao, X; Guo, X; Vogel, D; Zhang, X. Exploring the influence of social media on employee work performance. *Internet Research* **2016**, *26*, 529-545.



13. Chu, T. H. A meta-analytic review of the relationship between social media use and employee outcomes. *Telematics and Informatics* **2020**, *50*, 101379.
14. Moqbel, M; Aftab, F. Employees' social networking site use impact on job performance: Evidence from Pakistan. *AIS Transactions on Replication Research* **2015**, *1*,1-11.
15. Karr-Wisniewski P; Lu Y. When more is too much: Operationalizing technology overload and exploring its impact on knowledge worker productivity. *Computers in Human Behavior* **2010**, *26*, 1061–1072.
16. Cao X; Sun J. Exploring the effect of overload on the discontinuous intention of social media users: An S-O-R perspective. *Computers in Human Behavior* **2018**, *81*, 10–18.
17. Lin S; Lin J; Luo X; Liu S. Juxtaposed Effect of Social Media Overload on Discontinuous Usage Intention: The Perspective of Stress Coping Strategies. *Information Processing and Management* **2021**, *58*, 102419.
18. Lee AR; Son SM; Kim KK. Information and communication technology overload and social networking service fatigue: A stress perspective. *Computers in Human Behavior* **2016**, *55*, 51–61.
19. Yu L; Cao X; Liu Z; Wang J. Excessive social media use at work. *Information Technology and People* **2018**, *31*, 1091–1112.
20. Malik A; Dhir A; Kaur P; Johri A. Correlates of social media fatigue and academic performance decrement. *Information Technology and People* **2020**, *34*, 557-580.
21. Masood, A; Luqman, A; Feng, Y; Ali, A. Adverse consequences of excessive social networking site use on academic performance: Explaining underlying mechanism from stress perspective. *Computers in human behavior* **2020**, *113*, 1-13.
22. Lu B; Guo X; Luo N; Chen G. Corporate blogging and job performance: Effects of work-related and nonwork-related participation. *Journal of Management Information Systems* **2015**, *32*, 285-314.
23. Cao X; Yu L. Exploring the influence of excessive social media use at work: A three-dimension usage perspective. *International Journal of Information Management* **2019**, *46*, 83–92.
24. Khan NA; Khan AN; Moin MF. Self-regulation and social media addiction: A multi-wave data analysis in China. *Technology in Society* **2021**, *64*, 1-10.
25. Li J; Yuan B. Smartphone Intrusion: Has Social Interaction Online Blurred the Work–Life Boundary of Employees?. *Cornell Hospitality Quarterly* **2018**, *59*, 411–427.
26. Pelet JÉ; Ettis S; Cowart K. Optimal experience of flow enhanced by telepresence: Evidence from social media use. *Information and Management* **2017**, *54*, 115–128.
27. Cho J; Lee HE; Kim H. Effects of communication-oriented overload in mobile instant messaging on role stressors, burnout, and turnover intention in the workplace. *International Journal of Communication* **2019**, *13*, 1743–1763.
28. Cao X; Khan AN; Ali A; Khan NA. Consequences of Cyberbullying and Social Overload while Using SNSs: A Study of Users' Discontinuous Usage Behavior in SNSs. *Information Systems Frontiers* **2020**, *22*, 1343–1356.
29. Dai B; Ali A; Wang H. Exploring information avoidance intention of social media users: a cognition–affect–conation perspective. *Internet Research* **2020**, *30*, 1455–1478.
30. Fu S; Li H; Liu Y; Pirkkalainen H; Salo M. Social media overload, exhaustion, and use discontinuance: Examining the effects of information overload, system feature overload, and social overload. *Information Processing and Management* **2020**, *57*, 1-15.
31. Guo Y; Lu Z; Kuang H; Wang C. Information avoidance behavior on social network sites: Information irrelevance, overload, and the moderating role of time pressure. *International Journal of Information Management* **2020**, *52*,1-12.
32. Whelan, E; Islam, A. N; Brooks, S. Applying the SOBC paradigm to explain how social media overload affects academic performance. *Computers & Education* **2020**, *143*, 1-12.
33. Bucher, E; Fieseler, C; Suphan, A. The stress potential of social media in the workplace. *Information, Communication & Society* **2013**, *16*, 1639-1667.
34. Luqman, A; Cao, X; Ali, A; Masood, A; Yu, L. Empirical investigation of Facebook discontinues usage intentions based on SOR paradigm. *Computers in Human Behavior* **2017**, *70*, 544-555.
35. Maier C; Laumer S; Eckhardt A; Weitzel T. Giving too much social support: Social overload on social networking sites. *European Journal of Information Systems* **2015**, *24*, 447-464.
36. Salo, M; Pirkkalainen, H; Koskelainen, T. Technostress and social networking services: Uncovering strains and their underlying stressors. In *Scandinavian Conference on Information Systems (2017, August)*, (pp. 41-53). Springer, Cham.
37. Yen YS; Chen MC; Su CH. Social capital affects job performance through social media. *Industrial Management and Data Systems* **2020**, *120*, 903–922.
38. Farivar F; Richardson J. Workplace digitalisation and work-nonwork satisfaction: the role of spillover social media. *Behaviour and Information Technology* **2021**, *40*, 747–758.
39. Koeske, G. F; Kirk, S. A; Koeske, R. D. Coping with job stress: Which strategies work best?. *Journal of occupational and organizational psychology* **1993**, *66*, 319-335.
40. Dhir A; Yossatorn Y; Kaur P; Chen S. Online social media fatigue and psychological wellbeing—A study of compulsive use, fear of missing out, fatigue, anxiety and depression. *International Journal of Information Management* **2018**, *40*, 141–152.
41. Nawaz M A; Shah Z; Nawaz A; Asmi F; Hassan Z; Raza J; Binder JF. Overload and exhaustion: Classifying SNS discontinuance intentions. *Cogent Psychology* **2018**, *5*, 1-18.

42. Dhir A; Kaur P; Chen S; Pallesen S. Antecedents and consequences of social media fatigue. *International Journal of Information Management* **2019**, *48*, 193–202.
43. Tandon A; Dhir A; Islam N; Talwar S; Mäntymäki M. Psychological and behavioral outcomes of social media-induced fear of missing out at the workplace. *Journal of Business Research* **2021**, *136*:186–197.
44. Boonjing, V.; Chanvarasuth, P. Risk of overusing mobile phones: Technostress effect. *Procedia Computer Science* **2017**, *111*, 196–202.
45. Wang X; Li Z; Ouyang Z; Xu Y. The Achilles Heel of Technology: How Does Technostress Affect University Students' Wellbeing and Technology-Enhanced Learning. *International Journal of Environmental Research and Public Health* **2021**, *18*, 1–17.
46. Yao N; Wang Q. Technostress from Smartphone Use and Its Impact on University Students' Sleep Quality and Academic Performance. *The Asia-Pacific Education Researcher* **2022**, 1–10.
47. Yu L; Shi C; Cao X. Understanding the Effect of Social Media Overload on Academic Performance: A Stressor-Strain-Outcome Perspective. *Asian Journal of Communication* **2020**, *30*, 179–197.
48. Dragano N; Lunau T. Technostress at work and mental health: concepts and research results. *Current Opinion in Psychiatry* **2020**, *33*, 407–413.
49. La Torre G; De Leonardis V; Chiappetta M. Technostress: how does it affect the productivity and life of an individual? Results of an observational study. *Public Health* **2020**, *189*, 60–65.
50. Bondanini G; Giorgi G; Ariza-Montes A; Vega-Muñoz A; Andreucci-Annunziata P. Technostress Dark Side of Technology in the Workplace: A Scientometric Analysis. *International Journal of Environmental Research and Public Health* **2020**, *17*(21): 8013.
51. Chen X; Wei S. The impact of social media use for communication and social exchange relationship on employee performance. *Journal of Knowledge Management* **2020**, *24*, 1289–1314.
52. Landers R N; Schmidt GB. Social Media in Employee Selection and Recruitment. In Landers R N and Schmidt GB (Eds.), *Social Media in Employee Selection and Recruitment: Theory, Practice, and Current Challenges*. Springer International Publishing, **2016**.
53. Islam, A. N; Whelan, E; Brooks, S. (2020). Does multitasking computer self-efficacy mitigate the impact of social media affordances on overload and fatigue among professionals?. *Information Technology & People* **2020**, *34*, 1439–1461.
54. Lin J; Lin S; Turel O; Xu F. The buffering effect of flow experience on the relationship between overload and social media users' discontinuance intentions. *Telematics and Informatics* **2020**, *49*, 1–18.
55. Yang, F. X. Social media friending in building coworker guanxi: A study in the hotel industry. *International Journal of Hospitality Management* **2020**, *84*, 1–13.
56. Bahri S; Fauzi A; Ahmad NS. A communication overload scale for use with mobile instant messaging in work management. *Digital Business* **2020**, *1*, 1–10
57. Brivio E; Gaudio F; Vergine I; Mirizzi CR; Reina C; Stellari A; Galimberti C. Preventing Technostress Through Positive Technology. *Frontiers in Psychology* **2018**, *9*, 1–5.
58. Ma L; Zhang X; Wang G. The impact of enterprise social media use on employee performance: a grounded theory approach. *Journal of Enterprise Information Management* **2022**, *35*, 481–503.
59. Scaramuzzino G; Martinell Barfoed E. Swedish social workers' experiences of technostress. *Nordic Social Work Research*: **2021**, 1–14.
60. Chandra S; Shirish A; Srivastava SC. Does technostress inhibit employee innovation? Examining the linear and curvilinear influence of technostress creators. *Communications of the Association for Information Systems* **2019**, *44*, 299 – 331.
61. Luqman, A; Talwar, S; Masood, A; Dhir, A. Does enterprise social media use promote employee creativity and well-being? *Journal of Business Research* **2021**, *131*, 40–54. <https://doi.org/10.1016/j.jbusres.2021.03.051>
62. Tarafdar M; Pullins EB; Ragu-Nathan TS. Technostress: Negative effect on performance and possible mitigations. *Information Systems Journal* **2015**, *25*, 103–132.
63. Amran, N. A; Hassan, N. L. Malaysian public sector size: A comparison with other Asean countries. *Journal of Business Management and Accounting* **2021**, *11*, 1–20.
64. Hassan, Z; Tnay, J. S; Sukardi Yosodarmo, S. M; Sabil, S. The relationship between workplace spirituality and work-to-family enrichment in selected public sector organizations in Malaysia. *Journal of religion and health* **2021**, *60*, 4132–4150.
65. Johari, J; Shamsudin, F. M; Yean, T. F; Yahya, K. K; Adnan, Z. Job characteristics, employee well-being, and job performance of public sector employees in Malaysia. *International Journal of Public Sector Management* **2019**, *32*, 102–119.
66. Permarupan, P. Y; Al-Mamun, A; Saufi, R. A. Quality of work life on employees job involvement and affective commitment between the public and private sector in Malaysia. *Asian Social Science* **2013**, *9*, 268–278.
67. Zhang S; Zhao L; Lu Y; Yang J. Do you get tired of socializing? An empirical explanation of discontinuous usage behaviour in social network services. *Information and Management* **2016**, *53*, 904–914.
68. Christ-Brendemühl S; Schaarschmidt M. The impact of service employees' technostress on customer satisfaction and delight: A dyadic analysis. *Journal of Business Research* **2020**, *117*, 378–388.
69. Ringle, C.M; Wende, S; Becker, J.M. SmartPLS. SmartPLS GmbH 2015, Boenningstedt.
70. Hair JF; Risher JJ; Sarstedt M; Ringle CM. When to use and how to report the results of PLS-SEM. *European Business Review* **2019**, *31*, 2–24.

71. Hair JF; Ringle CM; Sarstedt M. PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice* **2011**, *19*, 139–152.
72. Sarstedt M; Ringle CM; Henseler J; Hair JF. On the Emancipation of PLS-SEM: A Commentary on Rigdon (2012). *Long Range Planning* **2014**, *47*, 154–160.
73. Law L; Fong N. Applying partial least squares structural equation modeling (PLS-SEM) in an investigation of undergraduate students' learning transfer of academic English. *Journal of English for Academic Purposes* **2020**, *46*: 100884.
74. Chin WW. Handbook of Partial Least Squares. In Vinzi VE, Chin WW, Henseler J and Wang H (Eds.), *Handbook of Partial Least Squares*. Springer Berlin Heidelberg, **2010**.
75. Hair JF; Matthews LM; Matthews RL; Sarstedt M. PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis* **2017**, *1*, 107–123.
76. Henseler J; Hubona G; Ray PA. Using PLS path modeling in new technology research: updated guidelines. *Industrial Management and Data Systems* **2016**, *116*, 2–20.
77. Kim, Y; Dykema, J; Stevenson, J; Black, P; Moberg, D. P. Straightlining: overview of measurement, comparison of indicators, and effects in mail–web mixed-mode surveys. *Social Science Computer Review* **2019**, *37*, 214–233.
78. Podsakoff PM; MacKenzie SB; Podsakoff NP. Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology* **2012**, *63*, 539–569.
79. Podsakoff PM; MacKenzie SB; Lee JY; Podsakoff NP. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* **2003**, *88*, 879–903.
80. Kock N. Common Method Bias in PLS-SEM. *International Journal of E-Collaboration* **2015**, *11*, 1–10.
81. Fauzi MA. Research vs. non-research universities: knowledge sharing and research engagement among academicians. *Asia Pacific Education Review* **2021**, 1–15.
82. Hair, J.F., Jr.; Hult, G.T.M.; Ringle, C.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Sage Publications: Thousand Oaks, CA, **2016**.
83. Henseler J; Ringle CM; Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science* **2015**, *43*, 115–135.
84. Franke G; Sarstedt M. Heuristics versus statistics in discriminant validity testing: a comparison of four procedures. *Internet Research* **2019**, *29*, 430–447.
85. Cain, M. K.; Zhang, Z.; Yuan, K. H. Univariate and multivariate skewness and kurtosis for measuring nonnormality: Prevalence, influence and estimation. *Behavior research methods* **2017**, *49*, 1716–1735.
86. Banjanovic ES; Osborne JW. Confidence intervals for effect sizes: Applying bootstrap resampling. *Practical Assessment, Research and Evaluation* **2016**, *21*, 1–20.
87. van Zoonen W; Verhoeven JWM; Vliegthart R. Understanding the consequences of public social media use for work. *European Management Journal* **2017**, *35*, 595–605.
88. Pang H. How compulsive WeChat use and information overload affect social media fatigue and well-being during the COVID-19 pandemic? A stressor-strain-outcome perspective. *Telematics and Informatics* **2021**, *64*: 101690.
89. Hartanto, A; Quek, F. Y; Tng, G. Y; Yong, J. C. Does social media use increase depressive symptoms? A reverse causation perspective. *Frontiers in Psychiatry* **2021**, *12*, 641934.