The role of personality type in overcoming workplace distractions

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ABSTRACT

Excessive usage of social networking sites (SNSs) has permeated individuals' daily lives, leading to negative outcomes such as reduced cognitive performance and physical problems. Regardless of the threat, few researchers have examined the negative consequences of social networking sites on employee performance. This study uses cognitive theory and Eysenck's theory of personality as the foundation of the proposed model to explore whether excessive social networking site usage deteriorates workers' cognitive performance. We propose that excessive use of social networking sites negatively impacts employees' cognitive performance, that extroverted individuals are the most distracted by social networking sites compared to introverts, and that ambiverts are the least distracted by them in the workplace. A sample of 266 Chinese and Pakistani users of social networking sites from the software house service sector was tested empirically to validate the proposed model. This study contributes to mitigating the negative impact of excessive SNS usage by implementing and using digital well-being applications to control addictive behavior. Furthermore, it provides theoretical and practical insights for organizations to improve employees' cognitive performance.

Introduction

Background of study

Social networking sites (SNSs) are Internet-based applications that help individuals connect with friends and famil (Kane et al., 2009). From collaboration and knowledge sharing to the creation of innovative business models, they have brought new management trends to organizations, enhancing the work performance and productivity of individuals (Marcos, 2013; Min, 2017; Alalwan, 2017; Cao & Ali, 2018). Their use in the workplace has both positive (Caoa & Yub, 2019) and negative effects on individuals (Masood et al., 2020; Caoa & Yub, 2019; Turel & Serenko, 2012). Alalwa (2017) have reported that they boost individual performance and productivity. Other studies have also shown that if people use social networking sites rationally at work, the outcomes are positive (Caoa & Yub, 2019) The pervasiveness of SNSs empowers users to communicate with others irrespective of their location and time, as they obscure the limits between work and life (Caoa & Yub, 2019).

However, negative consequences of networking sites can occur once usage exceeds the optimum level (Mansi & Levy, 2013). People obtain and maintain certain behavioral patterns, which provide grounds for intervention strategies. Individuals excessively using SNSs react to the environment, affect people with their behaviors, and impact their surroundings (environments) (Choi & Lim, 2016; Horrey, 2017). Task distraction refers to obsessive and addictive thought patterns, and involves the use of technology (Caplan S., 2010; Haagsma et al., 2013). Distractions caused while performing tasks are considered key components of problematic Internet use (SNS use) (Zheng & Lee, 2016). Task distraction was used in office settings to gain a better understanding of its excessive use (Haagsma et al., 2013). Task distractions that occur while frequently using SNSs intensify (Caplan, 2010; Caplan & High, 2006).

Today, individuals have easy access to social networking sites on new portable technologies as services become more easily available, expanding their connectivity with the virtual world. These technologies and social networking site services have enhanced the convenience and productivity of individuals, but at the same time, they deviate individual attention and create task distraction (Choi & Lim, 2016; Horrey, 2017; Min, 2017). Horre (2017) found that tasks require attentional and effective execution of demanded resources and the availability of those resources to be fully filled.

Tops and Boksem (2010) and Liu and Saito (2012) defined distraction as the division of attention discreetly or openly, while others described it as an inclination to pull in and hold a person's attention. Tops and Boksem (2010) explained a distraction task that included spoken auditory material, which can also be caused by other factors,

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mostly the orientation of gender, prosody elements, or even the emotional tone of the speaker. Interest affiliated with a particular task is believed to be underscored through a positive enthusiastic response to the material and a characteristic inspiration to carry out that task. Distraction levels are affected by various factors irrespective of the difficulty in completing the task.

Distraction can play a vital role in determining an individual's policy for resource distribution, over and above what might be necessary for successful task performanc (Kun et al., 2013). Individuals prioritize tasks based on available resources, allocating more resources to tasks that are important and less to those that are not importan (Tops & Boksem, 2010; Dula et al., 2011) Minbashia (2014) Forster and Lavie (2011) and Konstantinou et al. (2014) examined distraction with respect to the difficulty level, yet only a few have focused on individuals' level of task engagement. Several studies have investigated the problematic effects of unnecessary sounds on the performance of simple and complex tasks (Yoshino et al., 2013).

The performance of a complex task is disrupted by surrounding noise, with individuals continuously conversing in the background being the most troublesome and disruptive example (Roper & Juneja, 2008). Studies by Jahncke et al. (2013), Liebl et al. (2012), Rolf et al. (2017) and Seddigh et al. (2015) have demonstrated a number of tasks that are identical to those performed in real-world office settings and scrutinized them to measure the distraction impact on employees' cognitive performance. Excessive use of social networking sites causes overloading of information and distraction from tasks, hampering decision-making abilities, which ultimately results in the deterioration of the cognitive performance of individuals (Mansi & Levy, 2013). The irrational and problematic use of SNSs has become rampant among users, causing negative consequences for individuals and their behavior (Wang et al., 2015). Cao and Yu (2019), Das and Sahoo (2011) reported positive consequences of social networking sites. However, the dark side of social networking sites is still under investigation in workplaces where individuals use the Internet excessively. Lately, it has been studied by measuring learning performance (Javed et al., 2019).

Theoretical support

This study integrates multiple theories to support exogenous, endogenous, and moderating variables, such as social cognitive theory and Eysenck's theory of personality. Excessive use of SNSs is a psychological condition of individuals and their dependency on technology (Turel and Serenko, 2011). Excessive use of technology implies strong engagement or addictive behavior, resulting in psychological and emotional dependence (Zheng & Lee, 2016) Stieger et al. (2013) explained that the excessive use of SNSs not only disrupts the balance of family relationships but also disturbs the working efficiency of employees. In terms of psychiatric symptomatology,

an individual's excessive use of SNSs results in anxiety, agitation, and loneliness (Masood et al., 2020) Excessive use of SNSs can cause information and social overload in an individual's life, resulting in stress (Javed et al., 2019).

Our research opted for personality types using Eysenck's theory of personality based on past studie (Aaron & Lipton, 2018; Barrett, Davies, Zhang & Barrett, 2017). Personality types have different effects on an individual's performance. Küssner (2017) examined how each personality type dealt with the effects of background distractions. Excessive use of SNSs causes interference (distraction) during work, resulting in performance deterioratio (Turel & Serenko, 2012). Individuals with an extroverted personality were asked to refrain from using SNSs and responded with irrational behavior (Gao et al., 2017). Furnham and Strbac conducted experimental studies and found that introverts and extroverts did not differ in their performance (2002) hile performing jobs under normal environmental conditions. Whereas (Belojevic et al., 2007) showed that in noisy or distracting environments such as social media, cognitive performance of introverts was negatively affected while Kou et al. (2017) found that while using social networking sites in such an environment, the cognitive performance of extroverts was unaffected. Extroverts have the ability to blend in because of their socialized nature, while introverts are shy towards socialization and openness (Furnham & Strbac, 2002). Jones et al. (2006) tested introvert–extroverted personalities in diverse cognitive performance tasks, using Eysenck's theory of personality. According to the Myers-Briggs study using the Eysenck personality theory, roughly two-thirds of any population is made up of extroverts, and the remaining one-third is made up of introverts. The online environment provides introverts with the ability to solidify their contacts with one another. Introverts use SNSs to compensate for their poor social skills in nonvirtual life (Kexin Wang, 2018) The most noticeable problem encountered in office settings is where a work area is shared by multiple employees, while employees using SNSs and openly discussing with their colleagues, notification sounds on mobile devices, and ringing of telephone cause environmental distractions that are unrelated to the task (Haapakangas et al., 2019). Banbury et al. (2001) examined the decline in cognitive performance in the presence of task-irrelevant stimuli such as when colleagues engaged in background discussions. Belojevic et al. (2007) showed that in noisy or distractible environments, such as using social media, the cognitive performance of individuals affected negative matter, while Kou et al. (2017) explained that while using social networking sites in the office/work environment, individuals' cognitive performance remained unaffecte (Choi & Lim, 2016) This study is also significant for the present situation in which employees use the Internet excessively; frequently engaging in social networking sites and the effect of distraction while performing tasks (complex/simple) have drawn considerable attention from researchers in office settings. Fig. 1 presents a graphical representation of the hypothesized model.
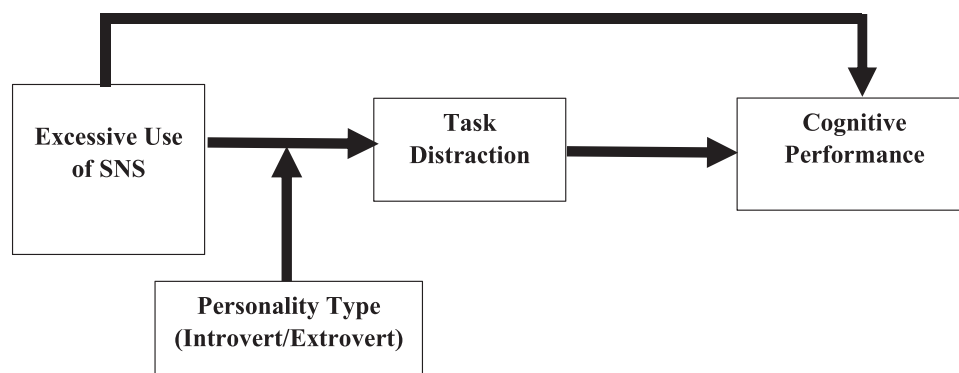

Fig. 1. Theoretical model.

Literature review and hypothesis development

Excessive use of social networking sites and cognitive performance

An increase in the number of users has resulted in problematic, unplanned behaviors and outcome (Turel & Qahri-Saremi, 2018) causing problems for performance and healt (Lee, 2015). SNS addiction results in dysfunctional behavior, which has negative consequences for user (Qahri-Saremi et al., 2020).

The excessive use of SNSs has resulted in an increased addiction rate (Dwyer et al., 2007) Such addiction leads to the consumption of social abilities, and people do not feel like they are participating in important discussions (Turkle, 2015) SNS has developed itself a new "alone together" type of technology-based environment connecting individuals virtually with far off friends ignoring physical close one (Turkle, 2013).

Addiction to SNS forces individuals to use strategies to avoid unpleasant behaviors and problematic environmental situation (Marlatt & Gordon, 1985) Individuals who use excessive SNS while working affect their job performanc (Das & Sahoo, 2011). Excessive use reduces the input of employees, resulting in performance deterioratio (Pasek et al., 2009). Addiction urges employees to use SNS from mobile devices during working hours, making it difficult to resist, leading to them failing to focus on their work, and becoming distracted from their tasks (Kirschner & Karpinski, 2010).

The working environment contains different stimuli, some of which are related to the target information, while others are unrelated (Forster & Lavie, 2011; Gilbert & Li, 2013) Gilbert and Li (2013) and Buchanan et al. (2014) elaborated on the term distractor as a stimulus present at any random moment which is not directly related to the targeted information. Individuals should ignore such distracting stimuli and compete with the task at hand to successfully perform the task of interest. The occurrence of virtual distractions in different organizations, particularly among employees and supervisors, shows that the ability to ignore virtual distractions is not the same (Lavie, 2010) Creating an environment containing an assortment of stimuli that vary from those in the main task can cause an overwhelming demand for individuals' cognitive resources and abilitie (Lavie, 2010).

Achieving optimal and effective cognitive abilities and executive functions is known as cognitive performanc (Gilbert & Li, 2013; Haapakangas et al., 2019) This is the achievement of effective and optimal functioning of cognitive capabilities and is affiliated with mental processes involving knowledge acquisition and comprehensio (Buchanan et al., 2014). Networking sites are platforms for social interaction with people from different corners of the worl (Han et al., 2015). Addiction to SNSs can distract people from their duties, which can further affect their cognitive performanc (Majid et al., 2020). Individuals who use SNSs excessively tend to avoid mandatory task (Wang et al., 2018). Alloway et al. (2012) found that multitasking has a significant impact on attention control and that when a person is engaged in multiple activities while attention diverts from assigned tasks, such behavior can strongly impair their cognitive performance and cause a decline in it.

Social networking sites enable people to interact with each other within a few seconds at the lowest cost, which leads to massive numbers of user (Alalwan, 2017). This scenario is associated with the cognitive absorption and low performance of an individual; when individuals engage in extensive SNS usage, they feel cognitively absorbed and occupied with hedonic factors, and they likely do not feel any burden in compromising other work-related activities (Saadé & Bahli, 2005; Alloway, 2012). The problematic use of social networking sites and their adverse effects on employees' cognitive performance have become prevalen (Asad et al., 2019). Therefore, considering the current scenario, this study affirms that the negative role of social networking sites in employees' cognitive performance cannot be neglected.

Top-down and bottom-up are two neurocognitive mechanisms through which individuals interact to perceive environmental stimuli. Top-down modulated processes, which include inhibition, working memory, and specific attention, allow individuals to focus on the stimuli of interest and retrain distractors to enter such a focu (Gazzaley & Nobre, 2012). This bottom-up modulation process allows individuals to focus only on their perspective characteristics, similar to novelty and salience (Gazzaley & Nobre, 2012; Minbashian & Luppino, 2014).

The likely effect of surrounding distractors on cognitive performance that causes numerous other multifaceted processes is inadequately understoo (Rodrigues & Pandeirada, 2020). The expanded pervasiveness of distraction is boundless and mostly driven by technological advances (Shanique et al., 2019). In distracted environments, individuals' psychological differences affect attention and task performanc (Minbashian & Luppino, 2014). A person's performance remains high on tasks that receive more attention and low for tasks that receive less attention (Minbashian & Luppino, 2014; Dijksterhuis & Aarts, 2010).

H1: Excessive SNS use has a significant impact on employees' cognitive performance.

Mediating role of task distraction

Distraction by SNSs is observed in the public arena these days when clients tune their gadgets while sitting, strolling, and eating. (Leung, 2015) Distraction makes it difficult for people to pay attention to i (Merriam-Webster, 2013). The lack of capability to focus fully on the assigned task causes task distractio (Sanders & Baron, 1975; Leung, 2015) which diverts employees' attention toward unimportant things. Task distraction is caused by many factors including overburden (Patel et al., 2017) lack of skills required to perform a job, stress of finishing work (Nicholls, 2016) work engagement, and SNS addictio (Horrey, 2017; Poolton, 2016; Min, 2017).

People tend to use a greater part of their time unreasonably utilizing SNSs, which weakens their psychological capacity to perform tasks related to their jobs, resulting in a low degree of focus (Asad et al., 2019). Addiction to SNSs reduces work engagement ability and drains the energy required to perform the assigned task, resulting in task distractio (Syrek, 2018). The addictive behavior of individuals may likewise affect the workplace by acting as a source of task distraction in itsel (Moqbel & Kock, 2018).

Addicted SNS users experience the ill effects of inclination-driven turmoi (Karaiskos, 2010) and deficient self-regulation (Vishwanath, 2015) two of which keep them sensitive to their SNSs and give them less authority over addictive activities. Overthinking the tasks that an individual needs to perform on SNSs makes it difficult for them to focus on different tasks. SNS addiction, which results in undivided attention, prevents users from thinking about the task under consideration, thereby causing a decline in performanc (Moqbel & Kock, 2018). The expanded predominance of distraction is extensive and triggered by technological progres (Shanique et al., 2019).

In a work setting, employees are sometimes distracted from their primary tasks and objectives by irrelevant information (Shanique et al., 2019). Maintaining attention while ignoring distractions is often required in the aforementioned context, mostly driven by technological advances (Shanique et al., 2019; Rodrigues & Pandeirada, 2020). The presence of virtual elements in an environment affects the cognitive performance of employees and colleagues. The effects of distraction have been observed in different dimensions (Konstantinou et al., 2014; Wais, 2014) including its impact on cognitive performanc (Gazzaley & Nobre, 2012). Distracting stimuli that differ from the target stimuli have a higher interference potentia (Rodrigues & Pandeirada, 2020).

H2: Task distraction significantly mediates the relationship between excessive SNS use and employees' cognitive performance.

Moderating role of personality type (Introvert/Extrovert)

Personalities are a blend of characteristics that reflect reactions, thoughts, behaviors, and social interactions. People are classified into two categories based on their personalities: introverted and extroverte (Eysenck, 1982). This classification can be problematic because of the unique nature of an individual's personalit (Weinberg & Gould, 1999). Introverts are shy and reserved, take time to plan their actions and are normally pessimistic and serious. Extroverts are more likely to go out, and are excitable, impulsive, and generally optimistic. Some individuals show traits that are consistent with their personality trait (Eysenck, 1982). Social compensation theory states that introverts with scarce social network groups are likely to utilize the Internet to compensate (McKenna & Bargh, 2000). Indirect evidence supports the idea that introverts might use these to compensate for the lack of interaction with others in their office live (Liu & Larose, 2008).

A model named as "rich get richer" predicts that extroverts gain additional benefits from the use of social networks. This is Based on a study by Kraut indicating that the Internet benefits extroverts more than introvert (2002) The use of social networks provides more benefits to extroverts because they have more friends than introverts and can easily encompass their offline friendliness in online social networks. Relating this to the office environment, where both introverts and extroverts perform their jobs and engage with networking sites. Introduction while performing tasks and engaging in the excessive use of SNSs will definitely cause distraction.

Mayfield and Moss (1989) examined how music tempo can distract employees. The task was to choose and collect stock prices, and then calculate the percentage changes in price from one week to another. One group performed the task in silence, another group listened to fast-paced music, and the third group only performed the task under the influence of slow-paced music. The researchers were unable to find differences in the quantity and quality of the work produced by the company. A second replicative study conducted under the same conditions resulted in higher subject performance during fast-paced music. The subjective distraction level was higher, but this could not fully explain the unreliable findings; however, it was concluded that managerial tasks that seem complex are probably best performed under silent conditions. Roberts (1959) examined the role of music in the workplace, which increased employee morale, resulting in fewer absentees and low employee turnover. Music that seems pleasing to our ears makes the time pass slows dow (Kellaris & Kent, 1992). Music plays the role of a stress buster that arises from routine work, but also plays the role of a distracter in complex mental work (Smith, 1961).

None of the aforementioned studies discussed personality trait differences among participants (Eysenck, 1981) Introverts and extroverts seem to exhibit differences in their cortical arousal. Introverts have a lower ideal excitement edge and, subsequently, do not need to worry about stimulation before reaching their ideal working level. Extroverts have higher ideal excitement edges and, in this manner, will in general look for excitement or animating circumstances (Eysenck, 1967). According to Gao et al. (2017) individuals with an extroverted personality were asked to refrain from using SNSs, and they responded with irrational behavior. Furnham and Strbac (2002) conducted experimental studies with introverts and extroverts performing their jobs under normal environmental conditions, and found there was no difference in their performance. Belojevic et al. (2007) showed that in noisy or distractable environments such as social media, the cognitive performance of introverts was negatively affected, while Kou et al. (2017) explained that while using SNSs in an arousing environment, cognitive performance remained unaffected (Choi & Lim, 2016) Extroverts have the ability to blend in because of their socialized nature, while introverts are shy about socialization and openness (Furnham & Strbac, 2002) Fig. 1 presents a graphical representation of the hypothesized model.

Based on the above, we hypothesize the following:

H3: Personality type (introverted) significantly positively moderates the relationship between excessive use of SNSs and task distraction.

H4: Personality type (extroverted) significantly positively moderates the relationship between excessive use of SNSs and task distraction.

Methodology

Sample and procedure

Our study used a hypothetical deductive technique to analyze the moderated mediation framework and validate our hypothesis. The current study used a snowball sampling approach to reach the target sampl (Asad et al., 2019) which was the service industry, including software houses in China and Pakistan, based on budgets and social ties. We contacted a high-tech software company in China that specializes in network planning and software development. In Pakistan, the information was obtained from software companies in Islamabad and Lahore. The following factors play a major role in why software companies are used as data sources. First, social networking use is widespread in software companies, making it easy for us to monitor excessive use. Second, there is a potential that task distraction may occur as a result of social networking site use. Owing to the use of social networking sites, it was simple to identify individuals with introverted or extroverted personalities. The data were collected using a structured questionnaire. Each questionnaire started with a cover letter that included the consent section, explanation of the research goal, and confirmation of participants' confidentiality. The pre-remedial strategies recommended by Spector and Brannic (1995) were adopted to address the potential issue of common-method bias. For example, participants were asked to answer honestly, guidelines for completing the survey, and instructions that questions had no right or wrong answers. After the cover letter, the next section contained questions about employees' excessive use of social networking sites, task distraction, cognitive performance and personality types. The last section collected demographic information about the participants (gender, education, age, service sector, income, frequently used networking sites, and average daily duration and frequency of SNS use at work). We developed the questionnaire by laterally adopting each variable's cited, reliable, and valid measurement scales. The first draft of the questionnaire was shared with 40 academicians to ensure the scale's face and content validity. The academicians suggested some changes to improve the participants' questionnaire clarity and helped finalize the survey. We also converted the original English scales into Chinese using a translation-back-translation method (Brislin, 1970). Unless otherwise stated, a 7-point Likert scale was used to measure the items.

The higher authority of each company was contacted using personal references to seek permission for data collection The general manager and the HR manager both gave us excellent comments when we first presented our research study and its goal to them before we conducted the poll. Subsequently, we asked the HR manager to choose 400 persons at random from among our potential participants using a random number generator. Thereafter, we contacted the selected employees to solicit their involvement and lay forth the rationale behind our study. Finally, we obtained data from 327 employees who participated in the study. To reduce or eliminate the potential for common method bias, we used a three-wave methodology. We sent our survey questionnaire to the employees in the first wave, gathering information on their demographics, the independent variable "T1: excessive use of social networking sites and task distraction," and the mediating variable. In total, 286 complete responses were obtained. Additionally, we gathered data on the dependent variable "T2: cognitive performance" in the second wave from the same subjects who had supplied replies in the first wave after a one-month

Table 1
Demographic analysis.

Demographics	Items	%
Gender	Male	63.6
	Female	36.4
Age	23−25 Years	16.9
	26−30 Years	38.8
	Above 30 Years	44.2
Education	Graduate	55.0
	MS/MPhil	32.6
	Ph.D.	12.4
Country	China	63.4
	Pakistan	36.6
SNS most frequently used	Google+	20.2
	LinkedIn	27.5
	Twitter	25.5
	Instagram	10.3
	Telegram	16.5
Average daily duration of SNS use at work	Rarely	2.6
	Less than 1h	13.0
	1−2h	20.9
	2−3h	20.4
	More than 3h	43.0
Average daily frequency of SNS use at work	Rarely	3.5
	1−3 times a day	15.2
	4−6 times a day	19.6
	7−9 times a day	9.6
	More than 10 times a day	52.2

break, and we got 293 valid responses. Third-wave data for the moderating variable "T3: personality type" was then gathered, and 277 responses were obtained. Forty-seven incomplete surveys were excluded due to missing data, 47 incomplete surveys were eliminated. After eliminating incorrect replies, 266 questionnaires, with a response rate of 69%, were selected for the final analysis.

The demographic results showed that (63.6% of) participants were male, and more than 36.4% of the employees worked in the service sector (software houses). This shows that participants were well aware of networking sites and were better positioned to respond to questions. The detailed results of the respondents' demographics are presented in Table 1.

Measurements

The constructs of the current study were adapted from the existing literature and measured on seven-point Likert scale (1= "strongly disagree" to 7= "strongly agree"). We chose this scale because it reduces participants' annoyance and enhances data quality (Nauman et al., 2019; Ali et al., 2020). Numerous steps were taken to select measurement items. All measurement scales were finalized after the modification suggested by academics at the pretested stage to confirm that the scales were the best fit to the study context. We also confirmed the constructs' validity and reliability through composite reliability and confirmatory factor analysis. Table 2 presents the reliabilities of the pilot tests.

- Excessive use of SNSs

Table 2
Pilot-test Results.

Variables	Cronbach's alpha
Excessive use of social networking sites	0.92
Cognitive performance	0.88
Task distraction	0.84
Personality type (introvert/extrovert)	0.85

The scale used to measure SNS use was adopted from Moqbel and Kock (2018) and had seven points.

- Task distraction

To measure task distraction, we adopted the Zwarun and Hall (2014) scale, which had five items based on a seven-point scale.

- Cognitive performance

For measuring cognitive performance, we have adopted the 16-item scale from the short form of the informant questionnaire on cognitive decline in the elderly by (Jorm, 1994). The original version by Jorm and Jacomb (1989) also contains other questions. All items are measured on a seven-point Likert Scale.

- Personality type (introvert/extrovert)

The introversion-extroversion scale consisting of 18 questions (Richmond & McCroskey, 1998) was administered in this study. It differs somewhat from other scales of introversion and extroversion because it does not include items for assessing communication apprehension. Items for this variable were also measured on seven-point Likert scale. We calculated personality type based on group analysis by performing the following steps: In step 1, we added the scores from items 1 and 4. In Step 2, the scores of items 2, 5, 7, 8, 10, 11, 13, 14, 16 and 18 were calculated. The third step was to subtract 12 by adding the scores obtained in steps 1 and 2. The score ranged between 12 and 60. Individuals scoring above 48 are considered highly introverted; those scoring below 24 have low introversion, meaning they are extroverted; and those between 24 and 48 are considered in the moderate range, which we call ambiverts.

Data analysis and results

The core purpose of this section is to provide an analysis of the study, which includes descriptive statistics of reliability and validity, as well as the outcomes of the hypothesis tests. Findings were drawn based on the analysis of data collected from service sector employees, which also includes software house employees. Based on our proposed research structure and hypothesis, structural equation modeling (SEM) was used to analyze the gathered data. The main reason behind choosing structural equation modeling to analyze our data was that we undertook a number of observed constructs in our study to measure one unobserved construct and analyze the structural relationship between our proposed variables and the impact of personality types on our model. Keeping this in mind, we implemented a two-way approach to analyze the gathered data. First, a measurement model is used to calculate the reliability and validity of the data. A structural model was tested to verify our research hypotheses (Anderson & Gerbing, 1988) Furthermore, we used a multigroup analysis (MGA) to check the moderating role of personality type.

Common method bias

We used different pre-remedial measures suggested in the literature (De Clercq et al., 2013; Podsakoff et al., 2003; Spector & Brannick, 1995) to address the potential problem of common method bias. First, we attached a cover letter to each questionnaire to ensure respondents' awareness of the purpose and scope of the study. Second, respondents were asked that participation in the survey was voluntary, there was no right or wrong answer, and that their information would be treated with strict confidence. The results are reported in aggregate form. Third, we used well-established scales to measure the variables, collected data on different timescales, and placed the variables separately on the questionnaire. Furthermore, we use a single Harman test to confirm that common method bias

does not exist, as the statistics show that a single factor explains only 28.73% of the variance, which is within the threshold value.

Measurement model analysis

We used SPSS 21 to perform exploratory factor analysis to determine factor loadings higher than the minimum threshold level of 0.4 (Hair et al., 2014) As mentioned below, all factor loading values exceeded the minimum threshold level, indicating that all factor loading values were in accordance with the criterion values, thus validating our proposed model. The degrees of freedom (df), CFI, NFI, IFI, PNFI, PCFI, SRMR, and RMSEA were evaluated.

Confirmatory factor analysis (CFA) was conducted to check reliability, including items, internal consistency reliability, and validity concerns, including convergent and discriminant concerns, for our data to calculate the adequacy of the measurement model. All values of factor loadings were above this level, so they were sufficient to move further and apply structural equation modeling (SEM) technique. Furthermore, a principal component analysis technique was adopted to evaluate all constructs. Additionally, reliability tests were performed, and the values of internal consistency reliability showed that Cronbach's alpha values were higher than 0.7, demonstrating high reliability and portrayal of the proposed constructs (Anderson & Gerbing, 1988; Hair et al., 2008) The average variance extracted (AVE) and composite reliability were selected to test the instrument's convergent validity. The results showed that all index values were above 0.5, indicating good CV for the instrument (Fornell & Larcker, 1981) The results shown in Table 5.2 validates square root values of AVE were higher than all correlations between variables, confirming convergent validity in our data.

In Table 3, all measured values exhibit consistent results as per the recommended values or criteria (Hair et al., 2014) Hair et al. (2010) suggested the use of absolute fit indices such as chi square, goodness-of-fit index (GFI), Root Mean Square Approximation (RMSEA), Tucker-Lewis index (TLI), normed fit index (NFI) index, and parsimonious fit indices over degrees of freedom to determine the goodness of the model. In the table, all calculated values show predictable outcomes according to the suggested criteria (Cangur & Ercan, 2015).

The fact that RMESA value was 0.072, CMIN/DF, CFI, and SRMR values were 0.054 further showed goodness fit of our model 2.267 respect 0.951, and recommendations (Anderson & Gerbing, 1988; Hair et al., 2008; Choi & Lim, 2016) Acceptable values are listed in Table 3.

Convergent validity. To check CV, AVE and composite reliability were adopted for our study, showing that values of our indices were above 0.5, displaying good convergent reliability for the instrument (Fornell & Larcker, 1981) According to Hair et al. (2010) average variance extracted values should be larger than 0.5, indicating good convergent validity. Table 4 shows that the values are in accordance with the standard criterion, indicating good convergent validity for our model.

Table 3
Measurement model fit indices.

Measure	Estimate	Threshold	Interpretation
CMIN	253.866	—	
DF	112.000	—	
CMIN/DF	2.267	Between 1 and 3	Excellent
CFI	0.951	>0.95	Excellent
SRMR	0.054	<0.08	Excellent
RMSEA	0.072	<0.06	Acceptable

Note: CFI= Comparative fit index; RMSEA = root mean square error of approximation; SRMR = Standardized Root Mean Square Residual.

Table 4
Factor loadings Cronbach and composite reliability.

Items	Estimate	AVE	CR
SNSs			
ESNS1	0.929		
ESNS2	0.895		
ESNS3	0.817		
ESNS4	0.807	0.7457	0.92118
Task distraction			
TD1	0.799		
TD2	0.848		
TD3	0.824		
TD4	0.842		
TD5	0.707	0.64906	0.90205
Cognitive performance			
CP1	0.688		
CP2	0.76		
CP3	0.784		
CP4	0.762		
CP5	0.728		
CP6	0.704		
CP7	0.794		
CP8	0.708	0.55044	0.90716

CFA model fit indices

Discriminant validity. This suggests that the difference between the factors determining variance among the variables was obtained from the square root of AVE. Results in Table 5 also support that the square root values of AVE were higher than all the correlations between constructs, thus confirming convergent validity in our data. Table 5.3 shows the measured values, and the results suggest that all our values are reasonable, guaranteeing the discriminant validity of the instrument used in this study.

Structural model analysis

Prior to analyzing the structural model, it is critical to evaluate whether there should be any collinearity issues in the model. Thus, the VIF scores for each construct were assessed to determine the limit of collinearity among the predictor variables, which could influence the precision of our regression model (Hair et al., 2010) Most standards suggest that VIF values less than five are acceptable (Chai-terjee & Price, 1991) The table below shows that the VIF values of all the variables were below 10 indicating that there was no collinearity issue in our research model (Diamantopoulos & Siguaw, 2006).

AMOS was used to further evaluate the goodness of fit of our model measurements and structural model, and the level of significance of our proposed hypothesis was evaluated. These multiple categories of indices are usually used to measure the goodness of fit of the model, and the values, along with their accepted criterion values, are listed in Table. The results showed that the RMESA, CMIN/DF value 2.422, CFI value 0.945, SRMR, and P-close values were 0.076, 2.422, 0.945, 0.055, and 0.000, respectively. The results further demonstrated the goodness of fit of our model with respect to previously accepted values and recommendations (Anderson & Gerbing, 1988; Hair et al., 2008; Choi & Lim, 2016) Based on our results, we conclude that both structural and measurement models are acceptable. Table 6 presents the structural model results.

Table 5
Discriminant validity — Fornell-Larcker criterion.

Variable	Mean	SD	A	ESNS	TD	CP
ESNS	4.19	1.63	0.92	(0.863)		
TD	4.32	1.40	0.88	.253	(0.806)	
CP	3.67	1.42	0.84	-0.276	-0.574	(0.741)

Table 6
Structural model analysis.

Measure	Estimate	Threshold	Interpretation
CMIN	273.736	—	—
DF	113.000	—	—
CMIN/DF	2.422	Between 1 and 3	Excellent
CFI	0.945	>0.95	Acceptable
SRMR	0.055	<0.08	Excellent
RMSEA	0.076	<0.06	Acceptable
P-Close	0.000	>0.05	Not estimated

Note: CFI= Comparative fit index; RMSEA = root mean square error of approximation; SRMR = Standardized Root Mean Square Residual.

Hypothesis testing

All the proposed hypotheses were evaluated by analyzing the validity of our model. Results of those hypothesis suggested that excessive use of social networking sites (β = -0.22, t = -3.656, $p < .0000$) according to the Table 7 showed significant and negative impact on cognitive performance. Direct path of our variables showed that ESNS→TD has (β = 0.37, t = 5.485, $p < .0000$) while in another path from TD → CP has (β = -0.61, t = -8.14, $p < .0000$) upon performing analysis. These findings support H1, which shows that there is a significant negative relationship between the proposed variables.

Mediation analysis

To analyze the indirect effect of excessive social networking site use on cognitive performance through task distraction, we performed data analysis. Table 8 shows that both indirect and direct path is significant showing that task distraction partially mediates the relationship between excessive usage of social networking sites and cognitive performance (β = -0.230, $p > 0.001$), (β = -0.45, $p > .001$). The relationship between ESNSU and task distraction and between task distraction cognitive performance was also significant. This means that TD negatively mediates the relationship between EUSNS use and CP due to a negative indirect effect. Furthermore, the direct path of EUSNS use towards CP is also negative and significant, so the mediation of task distraction here is partially mediated and not fully mediated.

Moderating effect of personality type (introvert/extrovert)

We investigated how personality types influence the relationship between excessive SNS use of social networking sites and cognitive performance using hierarchical regression analysis. We used AMOS to analyze the moderating impact to see which personality type gets

more distracted by using networking sites excessively while at work, along with group analysis for this variable. The results showed that individuals with introverted personality types were in the middle of the table as they were distracted. At the bottom were extrovert-personality-type individuals who were greatly distracted by the use of SNS while working. Figs. 2−4 show ambiverts, introverts, and extroverts' distraction patterns for the excessive usage of SNSs.

An interesting factor that arose was that there was another group of individuals who were least distracted by social networking sites, named ambiverts, as we have given in detail below in the discussion section as to why each of these personality types was distracted. From the group analysis performed through AMOS, ambiverted individuals were the least distracted from the excessive usage of social networking sites, meaning that their cognitive performance remained unaffected. The introverts were in the center of the spectrum while getting less distracted from excessive usage, and the most distracted personality type among these was the extrovert. Although extroverts are known to have an ability to socialize at any time but excessive indulgence in SNS usage beyond an optimum level creates task distraction for them, resulting in a negative impact on their cognitive performance and giving rise to other psychological problems which include stress, anxiety and negative behavior problems.

Discussion

The first hypothesis proposes that the excessive use of social networking sites has a significant impact on cognitive performance. The result of testing this hypothesis explains that individuals who use SNSs excessively suffer from cognitive performance problems. Our study also explored how high SNS usage stimulates cognitive performance, making it a strong predictor. In our study the negative impact of SNSs on the cognitive performance of employees deny findings of previous studies which states that social networking sites use have in working environment might have positive impact on the work performance (Cao et al., 2016; Hou et al., 2019) and excessive usage of SNSs does not always leads to negative consequence (Zheng & Lee, 2016; Asad et al., 2019).

The results of this study show that individuals employed in offices are exhausted because excessive SNS use does not provide enough time, energy, and resources to complete a given task on time, which results in a constant deterioration of cognitive performance (Yu et al., 2018; Cao & Yu, 2019) Similarly, the excessive use of SNSs for the purpose of amusement produces task distraction, negatively affecting employees' cognitive performanc (Cao & Yu, 2019) The findings of our study add to the literature on how excessive usage of SNSs leads to an increase in task distraction, causing cognitive performance to deteriorate.

The negative association between excessive use of networking sites and cognitive performance can be explained by the outcomes of SNS stimuli-producing clusters in the minds of users through frequent or excessive SNS use; social patterns are linked with responding to that cluster. For instance, newsfeed, statuses, labeling, and sharing of pictures by companions and associates, as well as reacting to such actions, brings about the reactivation of this cluster. Such stimulant signals and the reactivation of clusters upgrade the reaction rate towards posts, messages, and notifications, along these lines expanding the craving for social networking site use, which requires
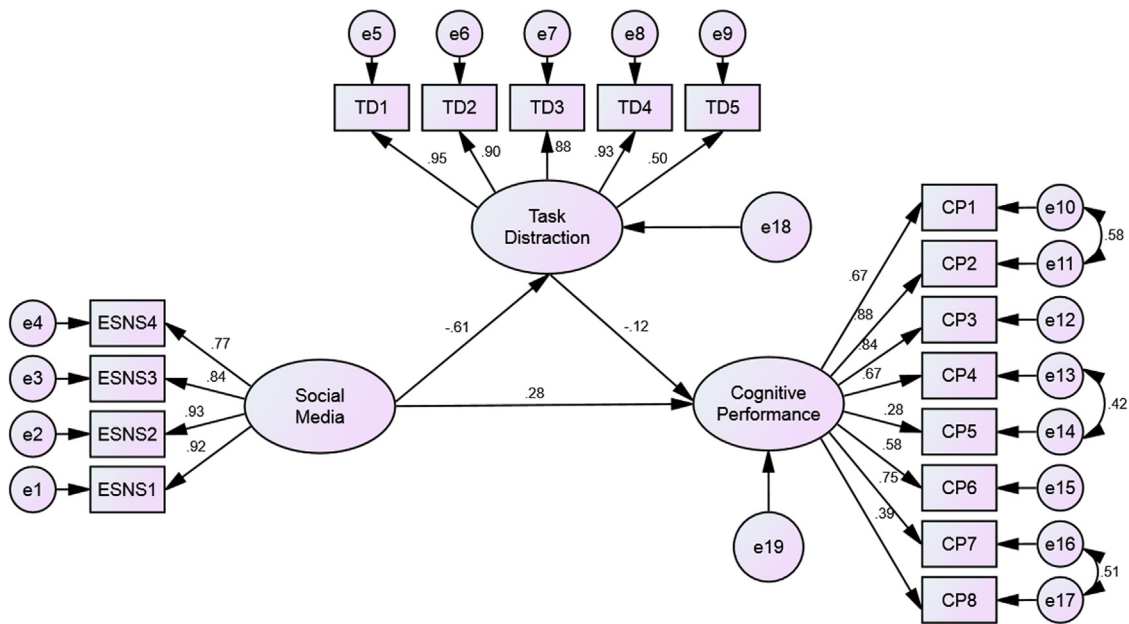
Table 7
Hypothesis testing.

Hypotheses	Estimate	SE	CR	P-value	LLCI	ULCI
ESNS → TD	0.37	.048	5.485	0.0000	.230	.508
ESNS → CP	-0.22	.042	-3.656	0.0000	-0.340	-0.093
TD → CP	-0.61	.076	-8.144	0.0000	-0.725	-0.485

ESNS: Excessive Use of Social Networking Sites; TD: Task Distraction; CP: Cognitive Performance.

Table 8
Mediation analysis.

Hypotheses	Direct beta w/o mediator	Direct beta with mediator	Indirect beta	Decision (mediation type)
ESNS → TD→ CP	-0.45***	-0.22***	-0.230***	Partial mediation

*** = Significant at 0.001.

Fig. 2. Moderation analysis for ambiverts.

appropriate measures of time, energy, and emotional involvement. Therefore, the absence of emotional and behavioral stability due to excessive SNS use can result in stress, anxiety, and other psychological problems, causing distraction with tasks at han (Zheng & Lee, 2016; Patel et al., 2017; Yu et al., 2018; Cao & Yu, 2019) Consequently, these conflicts and psychological problems together affect the cognitive capabilities of individuals using networking sites, which in turn reduces their cognitive performanc (Aaron & Lipton, 2018; Hou et al., 2019).

According to the second hypothesis, task distraction significantly mediates the relationship between excessive use of social networking sites and employees' cognitive performance. The results of the study illustrate that the usage regarding social networking sites enables critical business data to move speedily along with the mass

transmission of SNS's irrelevant notifications (Aagaard, 2015) Using social networking sites is a prolonged activity that frequently forces employees to engage in idle tasks that they will not otherwise find interesting (Aaron & Lipton, 2018) Barley et al. (2011) study shows that employees are generally not very captivated by notifications affiliated with SNSs.

Workers use social networking sites to communicate excessively and end up with issues such as being distracted from primary tasks, making themselves technologically overloaded, increasing workload, and deteriorating cognitive performance (Barley et al., 2011; Aagaard, 2015; Aaron & Lipton, 2018) Excessive use of technology causes work deviation or task distraction, leading employees to become overloaded with work, which is associated with a high risk of burnout and sleep disorders (Akbulut et al., 2017).
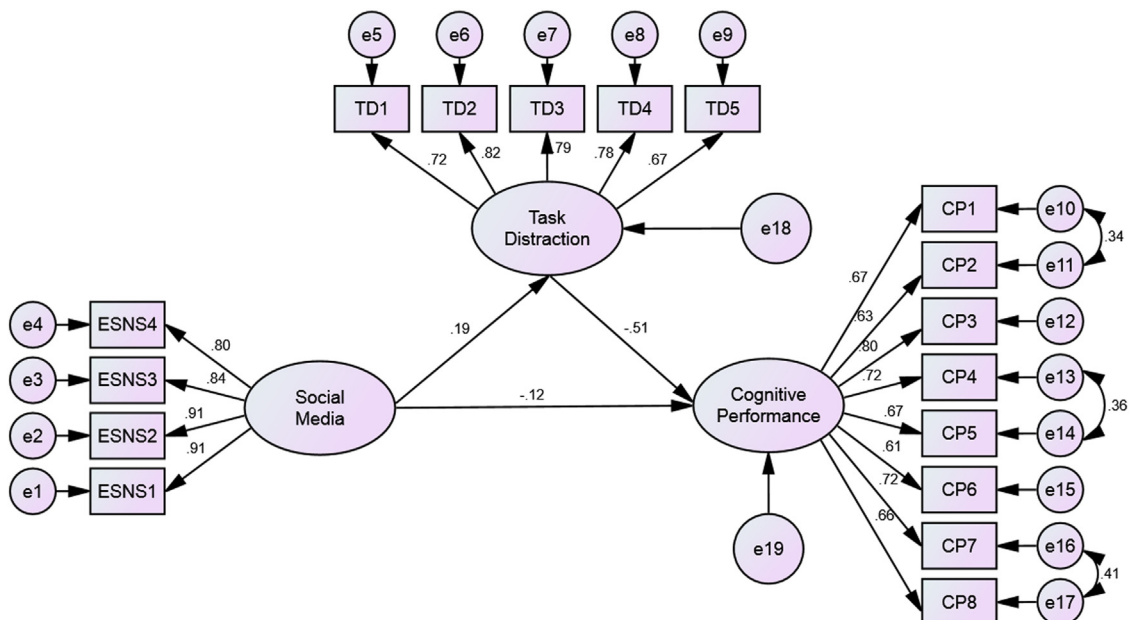

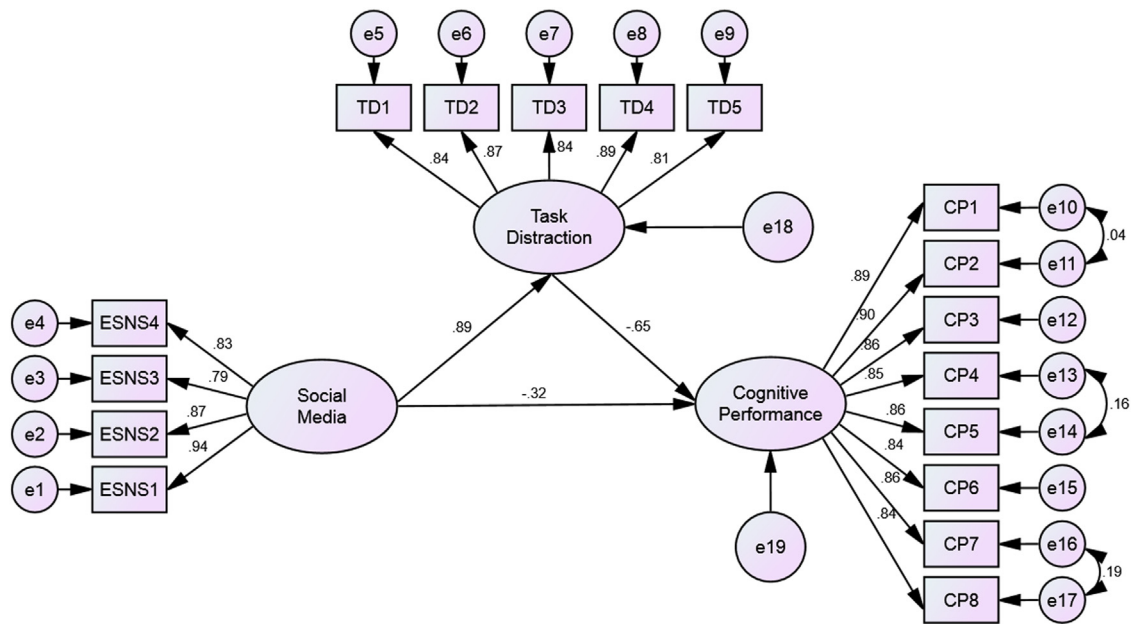**Fig. 3.** Moderation analysis for introverts.

Fig. 4. Moderation analysis for extroverts.

This is a scenario in which an employee's health is directly affected while cognitive performance declines. Employees with technology addiction continue to flit back and forth between devices and social platforms, which is definitely distracting and time-consuming (Aaron & Lipton, 2018) resulting in less sustained attention towards focused and specific tasks, along with low cognitive performance (Chen et al., 2014) Employee performance can be severely affected while dealing with task distraction because large amounts of energy and time are lost; therefore (Chen et al., 2017) distraction is unhealthy for the mental and physical health of an employee (Chowdhury et al., 2017).

Socially connected employees use SNSs during work activities, allowing them to integrate with their work activities. Engagin Chen et al. (2017) in primary activities regarding official work makes it impossible for distractions to resist, leading to employee attention diverting to i (Chen et al., 2014) resulting in a decline in cognitive performance, burnout, and stres (Chowdhury et al., 2017) Today, SNSs are constantly and easily available, which is a source of surging work-life conflicts and task distraction that drain out peace from an individual's life and associate him with anxiety, stress, and negative psychological disorder (Chowdhury et al., 2017).

Employees addicted to social networking experience technology-work conflict and deviation, which is an obstacle for them in performing their duties efficiently and properly, resulting in adverse performanc (Zheng & Lee, 2016) Further, this conflict between technology and work can be intensified if employees continue to use social networking sites excessively, because it prohibits them from performing their tasks with motivation and dedication while consuming time and energ (Asad et al., 2019).

Ford (2013) and McCoy found that (2016) employees are bullied, misinterpreted, and insulted more through social networking sites than through face-to-face communication (Ugur & Koc, 2015) Today, with the worldwide surge in SNS use, cyberbullying and online harassment have extended beyond workplaces, causing intense damage to individuals' lives while damaging their overall capability to perform wel (Park, Keil, Bock, & Kim, 2016) Conflicts are more likely to escalate via SNS because it is arduous to interpret messages that lack eye contact and are not supplemented by voice tone and inflectio (N.A. Khan, A.N. Khan, M.A. Soomro, & S.K. Khan, 2020; Xie, Ma, Zhou, & Tang, 2018; X. Zheng, 2016).

Task distraction emerging from addictive behavior on social networking sites has a strong and influential adverse impact on the overall work environment (Kuss & Griffiths, 2017) Socially active employees easily lose interest in work and task attention because they excessively use SNSs, as these platforms are easily accessible through portable devices (Pitafi, Kanwal, Ali, Khan, & Ameen, 2018).

Distracted employees' dedication to their work activities is less because they contribute less time and attention to their organizational goals (Qahri-Saremi et al., 2020) Employees who use too many social networking sites are not capable of performing job tasks well, resulting in a decline in their overall work performance because of their constant mental attachment to SNSs (Kirschner & Karpinski, 2010; Kuss & Griffiths, 2017; Khan et al., 2020).

Employees who use social networking sites excessively during their work hours cloak them from their leader's eyes, resulting in counterproductive behavior, spending too much time on SNS, and engaging in prohibited online activities leads an employee towards low cognitive performance and task distraction (Asad et al., 2019; Aaron & Lipton, 2018; Aagaard, 2015) Task distraction undoubtedly negatively impacts performance, leaving employees with overdue tasks and excessive workload (Qahri-Saremi et al., 2020) If a person is constantly overusing SNSs while performing job tasks, then their individual performance is lowered (Kirschner & Karpinski, 2010; Kuss & Griffiths, 2017; Khan et al., 2020). Halder et al. (2017; 2011) found that the behaviors of individuals who excessively use SNSs are affected either directly or indirectly according to their various personality types.

Hypothesis 3 proposes that introverted personality significantly moderates the relationship between excessive SNS use and cognitive performance. Individuals are less active on social media online than extrovert (Liu & Larose, 2008) Introvert's usage of social media is mostly utilitarian in nature, on the other hand extrovert's usage is utilitarian and hedonic (Halder & Chakraborty, 2017). Huang et al. (2019) found that introverts are independent learners, use social media to strengthen their social ties, and prefer online to face-to-face communication with new acquaintances (Barclay, 2010; Huang et al., 2019) Online engagement allows introverts to construct a well-thought-out response without the pressure to think on the spot, as they would in face-to-face discussions (Devlin & Andrade, 2017; Asad et al., 2019; Naz et al., 2019).

Individuals with introverted personality types also avoid excessive use of social networking sites, mainly because they distract them from other goal (Butt & Phillips, 2008) Individuals with introverted personalities are mostly deep thinkers and work-oriented with pending goals that need to be achieve (Liu & Larose, 2008) Social networking platforms provide opportunities to develop and maintain online relationship (Baxter, 2009) Lower consumption of social networking sites by introverts keeps them perfectly focused on their work, preventing them from having behavioral or other negative psychological disorder (Habes et al., 2018; Hou et al., 2019).

The observation, listening, and processing nature of introverts, coupled with their ability to thrive in solitude, makes them extraordinarily talented at work and communicating with other (Wang et al., 2015) Communicating authentically while holding attention through work-related discussions in an era of information overload is a stimulant to an introverted personality (Naz et al., 2019) They tended to listen more closely and observe the events that unfolded and worked according to the (Halder & Chakraborty, 2017) The ability of introverts to capture attention through work, sharing ideas, and thoughts gives an edge to extroverts, who may not feel comfortable surfing social networking sites solo for longer period (Phua et al., 2017).

The introverted brain is wired differently in that its reward systems are triggered by different stimuli, aren't as motivated as extroverts by external rewards such as recognition or professional advancement, giving introverts an authentic edge (Gao et al., 2017; Habes et al., 2018; Phua et al., 2017).

The fourth hypothesis proposes that extroversion significantly moderates the relationship between excessive SNS use and cognitive performance. The results illustrate that extroversion strengthens the relationship between excessive Internet use and cognitive performance during task distractions. Personality type plays a crucial role in the addictive use of social networking site (Ryan et al., 2014) Addiction to SNS use can be classified as a behavioral disorder, defined as the inability to control SNS us (Hou et al., 2019) Individuals with high levels of extroversion have high SNS addiction, whereas introverts have low SNS addictio (Wang, 2017).

Extroverts can become highly addicted to the use of SNSs because of their innovative and creative minds (Correa et al., 2010) They create virtual relationships by using social networking sites excessively. To maintain their relationships and virtual connections, extroverts spend more time on SNS, resulting in distraction even in the workplace, which deteriorates their cognitive performance (Wang et al., 2015) Extroverts increase the level of psychological dependency on SNSs causing other negative psychological disorders such as stres (Barrett et al., 2017) anxiety (Devlin & Andrade, 2017) emotional instabilit (Gao et al., 2017) and mood swings, as well as technology-work, family and personal health friction (Moqbel & Kock, 2018; Habes et al., 2018) High levels of cognitive failure and lower levels of sleep quality also result from the abundant use of SNSs, leading to a decline in individual performance and lack of concentration on the assigned task (Huang et al., 2019).

Individuals can easily access social networking sites due to the availability of smartphones and low-priced Internet packaging (Leung, 2015; Patel et al., 2017; Asad et al., 2019) Extroverts' use of SNSs creates cognitive-emotional distraction, which reduces their work performance (Huang et al., 2019; Halder & Chakraborty, 2017) While exploring new information and trends, extroverts tend to become distracted from primary task (Hou et al., 2019).

Extroverts utilizing SNSs can develop relational connections and bring more motivation to work compared with introvert (Wang et al., 2018) According to Gao et al. (2017) individuals with extroverted personalities show irrational behavior when asked to avoid using SNSs. Irrational behavior causes problems with extraverts' desire to use SNSs resulting in problematic behavior and psychological problem (Correa et al., 2010; Sei et al., 2011; Wang et al., 2018).

Individuals who are between the two extremes of introversion and extroversion are known as ambiverts. Ambiverts have the ability to adjust themselves to every situation most of the time in the workplac (Barclay, 2010; Chen et al., 2017) An ambivert is an individual who exhibits qualities of both introvert and extrovert, flipping into either depending on mood, context, and goal (Houston, 2021) These individuals are moderately comfortable with groups and social interactions on SNSs but also relish their time alone away from the crowd. Having a unique ability to adapt, they can fit into any context, depending on the situation. Just as in the case of using SNSs, they will spend hours engaged, but at the same time, while at the workplace, they will blend in according to the situation, prioritizing and properly allocating resources, time, and energy for work and surfing social websites, maintaining a balance between them.

Thus, ambiverts have an edge in being the least distracted while using SNSs either during work or their spare time. These results illustrate that ambiverts can manage work, use SNSs simultaneously, and become less distracted than introverts or extroverts. They can allocate resources more efficiently than others can. An individual with an ambivalent personality type knows how to create a balance between their need to use social networking sites and work. Ambiverts are emotionally stable individuals with personalities not influenced by external or internal factor (Butt & Phillips, 2008; Naz et al., 2019) They have the ability to regulate behaviors according to the situation, becoming a person who loved surface social sites and then changing it to a person who admires alone time just like and extroverted.

Implications

Based on the results of this study, several practical and theoretical implications are suggested. In first portion theoretical implications, followed by a discussion of the practical and managerial implications in the second portion.

Practical implications. This study offers helpful insights for enhancing the cognitive performance of individuals who use social networking excessively in the office/work environment. The findings of our study suggest that excessive SNS use is not sufficient to stimulate symptoms of technological addition; however, the (dark) adverse consequences of excessive SNS usage should be reflected in practical life. Since an individual's excessive SNS use negatively impacts cognitive performance through task distraction, few therapies may be designed to regulate the effect of such individual attitudes toward excessive social networking sites usage.

First, the implementation and use of digital well-being apps in the workplace to monitor and control the use of SNSs for each individual, either from personal devices or company-given devices, can provide details on what particular app an individual is using and for how much time. Digital well-being apps can also monitor a device's overall use as to when, where, and how long a device has been used and how much time it has been connected to the Internet by providing monitoring reports based on weekly, monthly, biannual, or annually according to its adjusted settings.

Due to functionality and easy accessibility, we as a society have made social networking sites as an integral part of our daily routine, with their use increased dramatically in past couple of year (Mark et al., 2015) SNSs serve as gateways to a social world full of possibilities in which an individual can move anywhere without limitations. Applications for digital well-being have not been extensively evaluated by prior researchers, and it is not yet clear how effective they are in monitoring and controlling the use of social networking sites (Kaye et al., 2020).

Different digital well-being applications are available online on Goggle Play and Apple's App Store. As mentioned in Table 9, a digital well-being app can provide an individual with a brief report on his/her overall device and, in particular, social networking app (site) usage. These features include self-monitoring and automatic

Table 9
Digital wellbeing app features.

	Category	Features
Self-monitoring	Tracking	Phone unlocking, screen time, app time, app checking
	Data presentation	Phone summary, app summary, charts, daily/widgets recap, social comparison
Interventions	Phone interventions	Phone timers, phone blockers, take a break, redesign UI
	App interventions	App timers, app blockers, notification blockers
	Extra features	Motivational quotes, rewards, automatic interventions

interventions by the digital well-being app itself when an individual notices unusual addictive behavior during working hours. Table 9 presents the features of the application of digital well-being.

The idea of a digital well-being app is to have a digital assistant that alerts an individual in terms of noticing addictive behavior. An increasing number of smartphone applications allow users to track and regulate their social networking sites usage. Such applications include those that are provided at the operating system level, iOS Screen Time, Android Digital Well-being, Forest: Stay Focused and Moment. According to Abeele (2020) digital well-being is an individual's subjective experience of an optimal balance between benefits and drawbacks obtained from mobile connectivity. In our case, we can relate it to the connectivity of excessive social networking sites. Digital well-being can be useful in controlling and monitoring individuals' use of SNSs. Trailing recent developments in operating systems and exposure to and possible adoption of applications created to support digital well-being are now widespread possibilities. With the help of digital well-being applications and software, individuals can track the time spent on various social networking site applications, along with the device's overall usage.

Social networking technology has substantially increased the autonomy of daily routines (Abeele et al., 2018) People can play out their social roles, deal with their social networks, and access confidential data whenever and wherever by deftly acclimating to circumstances or activities (Abeele, 2020, 2018) Presenting conceptual model of digital well-being into workplace as a powerful framework can be advantageous, in a route by diminishing the danger of making flawed or distorted circumstances and effect judgements.

Experiences related to digital well-being are not based on temporality and characteristics (based on individuals' personal experiences) ; in any case, they rely upon an unpredictable constellation of conceivably related components. We are giving a glimpse of a model that does not reduce digital well-being to the problem of mentally predisposed individuals who are already using networking sites

excessively. We live in a profoundly mediatized world in which networking sites have a double nature as objects or an occurrence of material culture (Miller, 2014; Orben et al., 2019; Orben & Przybylski, 2020).

Digital well-being can assist in controlling psychological problems related to mental health and in creating a balance between them. The dynamic system approach to implementing digital well-being can help managers and employees understand how well it can balance the use of social networking sites during work without creating any psychological or stress-related factors. Stable variables may impact a person's system components and various digital well-being experiences following long-term benefits for a person's well-being. Embracing such an approach, antecedents and results matter. For deep insight into the in-situ experiences of individuals, device logs can be examined as snapshots to probe users to reflect on their digital well-being (Kaufmann & Peil, 2019; Kaye et al., 2020) The implementation of such hybrid offline-online digital spaces can reveal how individual (user) app features and person- and device-specific factors work together (Loid et al., 2020; Abeele, 2020; Kaye et al., 2020) Experiences emerging from communication among people, devices, and contexts can be empirically displayed and tested. A powerful systems approach, such as digital well-being, can add new knowledge to mechanisms that often lead people to encounter issues with unnecessary and excessive usage of social networking sites during work. Furthermore, it can highlight the perspectives of interventions on digital well-being, just as digital detox projects or screen time devices are quite effective.

Managers of organizations can play an important role in the implementation and use of digital wellbeing apps at work stations. They can devise a policy of turning on a wellbeing app the moment an employee sites on work desk at the start of the day. The monitoring time period can be set by the manager or supervisor for weekly, monthly, biannually or yearly periods. Upon the completion of the given period, each individual must submit report generated by the wellbeing app to their supervisor or any other superior for further processing. Results from the report can explain about respective individual as to how much time they used surfing social networking sites and which social app was used the most, how many times device was unlocked and how much time the device was used. Fig. 5 shows the graphical presentation of practical implications.

Second, executives can consider different strategies to regulate employee behavior. Apart from the use of digital well-being apps, managers can institute time restrictions and change policies that are in accordance with the cultural norms of the organization regarding how, when, and which SNSs can be utilized at the workplace by employees. Such strategies can be implemented by giving devices owned by the organization to every worker, training that permits efficient handling, and have checks conducted by the firm's IT subject matter experts.
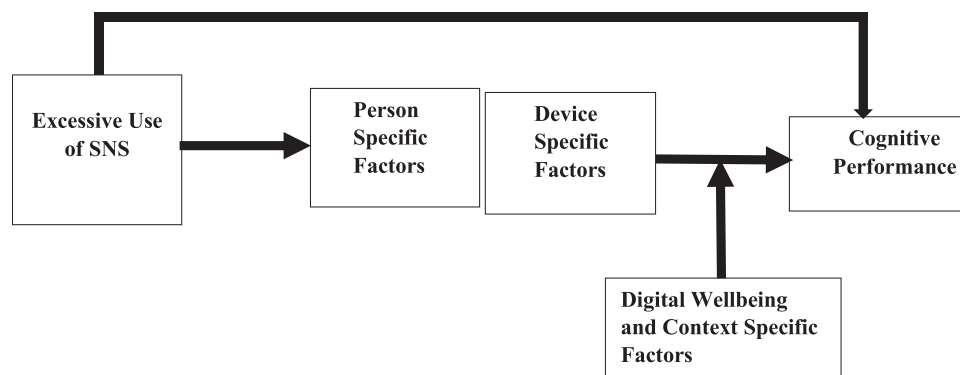

Fig. 5. Practical implications.

Third, to prevent the adverse effects of excessive usage of social networking sites leading to task distraction, penalties might be required to make the SNSs use cost more representative, and workshops ought to spread awareness among its excessive users. In the work situation in our study, organizations cannot ban the use of SNSs in the work environment, but such measures can help affirm how extreme use hampers cognitive performance.

Theoretical implications. This study has several theoretical implications. First, research scholars can utilize this literature, as many prior studies have only emphasized the positive aspects of social networking sites for knowledge purpose (Hassan et al., 2015) this study extends the research by focusing on the negative effects of excessive use of SNSs and its impacts on individuals in the workplace. We theoretically explain the deterioration in employees' cognitive performance caused by excessive use during work. This research also sheds light on identifying the critical role of personality type, introverts, and extroverts on how they tend to use social networking sites, how they use SNS to their benefit, factors playing part in deviating their attention from the task at hand, impacting mental health, and causing physical and psychological problems such as stress, anxiety, and strain.

Second, our study encompasses prior literature that has been limited in its theoretical approach to excessive SNS use, resulting from the scarcity of literature in this area. This study developed a theoretical model based on SCT and Eysenck's theory of personality to explain the excessive use of SNSs. Prior research has focused only on one or two reciprocal factors of Bandura's theory, instead of utilizing all three triadic factors that can impact an individual's surroundings —the behavior, environment, and people surrounding an individual — and has provided a detailed understanding (Turel and Serenko, 2011; Turel & Serenko, 2012; Turel & Qahri-Saremi, 2018) For instance, we examined how users' excessive social networking sites usage behavior impacted their cognitive performance in the workplace.

Third, our study extends the previous literature, which inadequately describes the consequences of excessive use of SNSs (Cao et al., 2016; Choi & Lim, 2016; Patel et al., 2017; Shanique et al., 2019) These effects have not been given due importance in previous research, which is remedied by this study, which highlights maladaptive cognitions that affect the cognitive performance of an individual in the form of task distraction, causing conflicts and anxiety, stress, and other psychological problems. We explored these conflicts to provide details about the mechanism, rather than zeroing, of the general impact on cognitive performance. Such proximal reasons for excessive use of SNSs as behavioral, environmental, and individual personal disorders should not be overlooked, given the fact that it is a blend of triadic factors with the cognitive aspects of social networking site users and significantly impacts productivity, deteriorating cognitive performance.

Limitations and future directions

Although there is room for improvement, our study has certain limitations that should be acknowledged in future research. The first limitation concerns the samples, and this study chose software-house employees belonging to the service sector. There are also other service sectors that can provide a good number of responses to empirically test this model further, which can also be checked by collecting responses from students. From the beginning of the COVID-19 pandemic, students have been forced to study online and they can easily become distracted while taking lectures through online modes. Future research can be conducted on students as well as in other service sectors.

Our sample size was based on service sectors located in the metropolitan cities of Punjab Province. Future research should consider all of China's and Pakistan's service sectors or educational institutes.

The COVID-19 restriction made it impossible for us to collect as many responses as we could because no one was ready to meet and participate in filling the questionnaire by hand. Sharing the questionnaire via Google forms was also not enough, so for future research, it will be advantageous to increase the sample size and collect data from metropolitan cities.

This study investigated the role of excessive SNS usage of social networking sites on employees' cognitive performance through task distraction and the moderating role of personality types. Future researchers can check the impact of supervisor support, which plays the role of a moderator, by empirically testing the impact. Supervisor support could be an important factor in reducing the excessive use of social networking sites in workplaces. Different forms of supervisor support can also be tested to see if individuals are more or less affected by various types of supervisor support.

The future direction of our research would be to include the concept of sustainable digital well-being in the current model, considering person- and device-specific factors. Context-related factors can also play a part, as the concept of sustainable digital well-being is new and its definition may vary from one place to another. We found that in our study, it can vary from one service sector to another, as different service sectors can provide a better understanding of how well this concept of digital well-being can help reduce individuals' extensive use of SNSs.

Conclusion

The aim of our study was to investigate the impact of excessive use of social networking sites on employees' cognitive performance through task distraction, using personality type as a moderator. This study uses a combination of the triadic factor of Bandura's notion of reciprocity, or the three parts of cognitive theory, along with Eysenck's theory of personality. While previous studies have also highlighted the benefits of using networking sites, research has also shown that the cognitive performance of employees who use SNSs excessively at work is significantly negatively impacted by task distraction. Employees with ambiverted personalities fit best in a work environment where they can balance their workload and continue surfing social networking sites. Introvert employees are somewhat less distracted from excessively using SNSs at workplace but among all of them are the extroverts who are mostly distracted from task and in result their cognitive performance deteriorates away. This study is also useful in way that it has highlighted the other perspective of social networking site which has been called the "dark side" or as our study has described it, the excessive use of SNSs. One of the major problems in China and Pakistan is that individuals usually seem to become distracted by the new trends on social networking sites, which can be for entertainment, news, or any other thing, causing deterioration of cognitive performance. As COVID-19 is on us, many individuals are in the working environment, which makes it even more complicated to fully focus on their work with all the distractions at the same time. Individuals can overcome the problem of excessive use by opting for digital well-being apps that can provide details about excessive SNS usage.

References

Aagaard, J. (2015). Drawn to distraction: A qualitative study of off-task use of educational technology. *Computers & Education*, 90-97.

Aaron, L. S., & Lipton, T. (2018). Digital distraction: Shedding light on the 21st-century college classroom. *Journal of Educational Technology Systems*, 363–378.

Abeele, V. (2020). Digital wellbeing as a dynamic construct. *Communication Theory*, 1–24.

Abeele, V., Wolf, D., & Ling (2018). Mobile media and social space: How anytime, anyplace connectivity structures everyday life. *Media An Communication*, 5–14.

Furnham, A., & Strbac, L. (2002). Music is as distracting as noise: The differential distraction of background music and noise on the cognitive test performance of introverts and extraverts. *Ergonomics, 45*(3), 203–217.

Akbulut, Y., D€onmez, O., & Dursun, €. (2017). Cyberloafing and social desirability bias among students and employees. *Computers in Human Behavior*, 87–95.

Alalwan, A. A. (2017). Social media in marketing: A review and analysis of the existing literature. *Telematics and Informatics*, *34*(7), 1170–1190.

Alloway. (2012). The impact of engagement with social networking sites (SNSs) on cognitive skills. *Computers in Human Behavior*, *28*(5), 1748–1754.

Anderson, & Gerbing (1988). Structural equation modeling in practice : A review and recommended two-step approach. *Psychological Bulletin*, 411–423.

Asad, J., Yasir, M., & Majid, A. (2019). Evaluating the effects of social networking sites addiction, task distraction and self-management on nurses' performance. *Journal of Advanced Nursing*, *75*(12), 1–14.

Banbury, S. P., Macken, W. J., Tremblay, S., & Jones, D. M. (2001). Auditory distraction and short-term memory: Phenomena and practical implications. *Human Factors*, *43*, 12–29.

Barclay, J. (2010). The effect of personality styles on social media use. *Elon Journal Undergraduate Research Communications*, 30–35.

Barley, S., Meyerson, D., & Grodal, S. (2011). E-mail as a source and symbol of stress. *Organization Science*, 887–906.

Barrett, P., Davies, F., Zhang, Y., & Barrett, L. (2017). The holistic holistic impact of classroom spaces on learning in specific subjects. *Environment and Behavior*, *49*(4), 425–451.

Baxter, A. (2009). Are social networking websites better for.

Belojevic, G., Slepcevic, V., & Jakovljevic, B. (2007). Mental performance in noise: The role of introversion. *Journal of Environmental Psycology*, *21*(2), 209–213.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 185–216.

Buchanan, H., Markson, L., Bertrand, E., Greaves, S., & Parmar, R. A. (2014). Effects of social gaze on visual-spatial imagination. *Frontier Psychology*, *5*(671).

Butt, & Phillips (2008). Personality and self reported mobile phone use. *Computers in Human Behavior*, 346–360.

Cangur, S., & Ercan, I. (2015). Comparison of model fit indices used in structural equation modeling under multivariate normality. *Journal of Modern Applied Statistical Methods*, 152–167.

Cao, & Yu (2019). Exploring the influence of excessive social media use at work: A three-dimension usage perspective. *International Journal of Information Management*, 83–92.

Cao, G., Vogel, & Zhang (2016). Exploring the influence of social media on employee work performance. *Internet Research*, 529–545.

Cao, X., & Ali, A. (2018). Enhancing team creative performance through social media and transactive memory system. *International Journal of Information Management*, *39*, 69–79.

Caoa, X., & Yub, L. (2019). Exploring the influence of excessive social media use at work: A three dimension usage perspective. *International Journal of Information Management*, *46*, 83–92.

Caplan, S. (2010). Theory and measurement of generalized problematic internet use: A two-step approach. *Computers in Human Behavior*, *26*(5), 1089–1097.

Caplan, S. E., & High, A. C. (2006). Beyond excessive use: The interaction between cognitive and behavioral symptoms of problematic internet use. *Communication Research Reports*, *23*(4), 265–271.

Chai-terjee, & Price (1991). *Regression analysis by example* (2nd ed.). New York: John Wiley & Sons.

Chen, C., Zhang, K. Z., Gong, X., Zhao, S. J., & Lee, M. K. (2017). Examining the effects of motives and gender differences on smartphone addiction. *Computers in Human Behvaior*, 891–902.

Chen, L., Nath, R., & Insley, R. (2014). Determinants of digital distraction: A crosscultural investigation of users in Africa, China and the US. *Journal of International Technology and Information Management*, 145–171.

Choi, S. B., & Lim, M. S. (2016). Effects of social and technology overload on psychological well-being in young south korean adults: The mediatory role of social network service addiction. *Computers in Human Behavior*, *61*, 24–254.

Chowdhury, N. S., Livesey, E. J., & Blaszczynski, A. A. (2017). Pathological gambling and motor impulsivity: A systematic review with meta-analysis. *Journal of Gambling Studies*, 1213–1239.

Correa, T., Hinsley, A., & De Zuniga, H. (2010). Who interacts on the web? The intersection of users' personality and social media use. *Computers in Human Behavior*, 247–253.

Karaiskos, E. T. D. (2010). P02-232 - social network addiction: A new clinical disorder? *European Psychiatry*, *25*(1), 855.

Das, B., & Sahoo, J. S. (2011). Social networking sites—a critical analysis of its impact on personal and social life. *International Journal of Business and Social Science*, *2*(14), 222–228.

Devlin, A. S., & Andrade, C. C. (2017). *Quality of the hospital experience: Impact of the physical environment*. Springer International Publishing.

Diamantopoulos, A., & Siguaw, J.A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. 263–2828.

Dijksterhuis, A., & Aarts, H. (2010). Goals, attention, and (un) consciousness. *Annual Review of Psychology*, *61*, 467–490.

Dula, C., Martin, B., Fox, R., & Leonard, R. (2011). Differing types of cellular phone conversations and dangerous driving. *Accident Analysis & Prevention*, *43*(1), 187–193.

Dwyer, C., Hiltz, S. R., & Passerini, K. (2007). *Trust and privacy concern within social networking sites: A comparison of Facebook and Myspace*. Colorado: Keystone.

Eysenck, H. (1967). *The biological basis of personality*. Springfield, IL: Thomas.

Eysenck, H. (1981). *Know your own IQ*. Harmondsworth: Penguin.

Eysenck, H. (1982). *Personality, genetics, and behavior: Selected papers*. New York, NY: Praeger.

Fornell, & Larcker (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 39–50.

Forster, S., & Lavie, N. (2011). Entirely irrelevant distractors can capture and captivate attention. *Psychonomic Bulletin & Review*, *18*(6), 1064–1070.

Furnham, A., & Strbac, L. (2002). Music is as distracting as noise: The differential distraction of background music and noise on the cognitive test performance of introverts and extraverts. *Ergonomics*, *45*(3), 203–217.

Gao, W., Liu, Z., & Li, J. (2017). How does social presence influence SNS addiction? A belongingness theory perspective. *Computers in Human Behavior*, *77*, 347–355.

Gazzaley, A., & Nobre, A. C. (2012). Top-down modulation: Bridging selective attention and working memory. *Trends in Cognitive Sciences*, *16*(2), 129–135.

Gilbert, C. D., & Li, W. (2013). Top-down influences on visual processing. *Nature Reviews Neuroscience*, *14*(5), 350–363.

Haagsma, M. C., Caplan, S. E., Peters, O., & Pieterse, M. E. (2013). A cognitive behavioral model of problematic online gaming in adolescents aged 12-22 years. *Computers in Human Behavior*, *29*(1), 202–209.

Haapakangas, A., Hallman, D., Mathiassen, S., & Jahncke, H. (2019). The effects of moving into an activity-based office on communication, social relations and work demands – a controlled intervention with repeated follow-up. *Journal of Environmental Psychology*, *66*, 1–8.

Habes, M., Alghizzawi, M., Khalaf, R., Salloum, S., & Ghani, M. (2018). The relationship between social media and academic performance: Facebook perspective. *International Journal of Science and Research (IJSR)*, 12–18.

Hair, B., Babin, & Anderson. (2010). Multivariate data analysis.

Hair, H., Georgia, & College (2008). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 106–121.

Hair, S., Hopkins, & Kuppelwieser (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 106–121.

Halder, S. R., & Chakraborty, P. (2017). The influence of personality traits on information seeking behavior of students. *Malaysian Journal of Library and Information Science*, 41–53.

Han, S., Min, J., & Lee, H. (2015). Antecedents of social presence and gratification of social connection needs in SNS: A study of Twitter users and their mobile and non-mobile usage. *International Journal of Information Management*, *35*(4), 459–471.

Hassan, N., & Wade (2015). Linking dimensions of social media use to job performance: The role of social capital. *The Journal of Strategic Information Systems*, 65–89.

Horrey, W. J. (2017). Distraction and task engagement: How interesting and boring information impact driving performance and subjective and physiological responses. *Applied Ergonomics*, *58*(1), 342–348.

Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*.

Houston, E. (2021). Introvert vs extrovert: A look at the spectrum and psychology.

Huang, Y., Li Kuang, W., Wang, J., Cao, L., & Xu (2019). Association between personality traits and risk of suicidal ideation in Chinese university students: Analysis of the correlation among five personalities. *Psychiatry Research*, 93–99.

Jahncke, H., Hongisto, V., & Virjonen, P. (2013). Cognitive performance during irrelevant speech: Effects of speech intelligibility and office-task characteristics. *Applied Acoustics*, *74*, 307–316.

Javed, A., Yasir, M., Majid, A., & Ahmed, S. H. (2019). Evaluating the effects of social networking sites addiction, task distraction, and self-management on nurses' performance. *Journal of Advanced Nursing*, *75*(11), 2820–2833.

Jones, West, & Estell (2006). The Mozart effect: Arousal, preference, and spatial performance. *Psychology Aesthetics Creativity Arts*, *S1*, 26–32.

Kane, G. C., Fichman, R. G., Gallaugher, J., & Glaser, J. (2009). Community relation 2.0. *Harvard Business Review*, *87*(1), 45–50.

Roper, KO., & Juneja, P. (2008). Distractions in the workplace. *Journal of Facilities Management*, *6*(2), 91–109.

Kaufmann, & Peil (2019). The mobile instant messaging interview (MIMI): Using WhatsApp to enhance self-reporting and explore media usage in situ. *Mobile Media and Communiction*, 229–246.

Kaye, O., Ellis, H., & Houghton. (2020). The Conceptual and Methodological Mayhem of "Screen-time".

Kellaris, J. J., & Kent, R. J. (1992). The influence of music on customer's temporal perception. *Journal of Consumer Psychology*, *4*, 365–376.

Kexin Wang, Y. L. (2018). Relationship between extroversion and social use of social networking sites. *Social Behavior and Persoanlity*, 1597–1610.

Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. *Computers in Human Behavior*, *26*(6), 1237–1245.

Konstantinou, N., Beal, E., King, J. R., & Lavie, N. (2014). Working memory load and distraction: Dissociable effects of visual maintenance and cognitive control. *Attention, Perception, & Psychophysics*, *76*(7), 1985–1997.

Kou, S., McClelland, A., & Furnham, A. (2017). The effect of background music and noise on the cognitive test performance of Chinese introverts and extraverts. *Psychology of Music*, *46*(1), 125–135.

Kun, A., Palinko, O., Medenica, Z., & Heeman, P. (2013). *On the feasibility of using pupil diameter to estimate cognitive load changes for in-vehicle spoken dialogues*. (pp. 3766–3770). Interspeech.

Küssner, M. B. (2017). Eysenck's theory of personality and the role of background music in cognitive task performance. *Frontiers in Psychology*, *8*.

Lavie, N. (2010). Attention, distraction, and cognitive control under load. *Current Directions in Psychological Science*, *19*(3), 143–148.

Lee, Z. C. (2015). Massively multiplayer online game addiction: Instrument development and validation. *Information and Management*, *52*(4), 413–430.

Leung, K. (2015). The effect of distractions on task performance. Master's Theses.

Liebl, A., Haller, J., Jodicke, B., Baumgartner, H., & Schlittmeier, S.a. (2012). Combined effects of acoustic and visual distraction on cognitive performance and well-being. *Applied Ergonomics*, *43*, 424–434.

Liu, T., & Saito Oi, M. (2012). Distinctive activation patterns under intrinsically versus extrinsically driven cognitive loads in prefrontal cortex: A near-infrared spectroscopy study using a driving video game. *Neuroscience Letters*, *506*(2), 220–224.

Liu, X., & Larose, R. (2008). Does using the internet make people more satisfied with their lives? The effects of the internet on college students' school life satisfaction. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, *11*(3), 310–320.

Loid, T., & Rozgonjuk (2020). Do pop-up notifications regarding smartphone use decrease screen time, phone checking behavior, and self-reported problematic smartphone use? evidence from a two-month experimental study. *Computers in Human Behavior*, 22–30.

Majid, A., Yasir, M., Javed, A., & Parveen, A. (2020). From envy to social anxiety and rumination: How social media site addiction triggers task distraction amongst nurses. *Journal of Nursing Management*, *28*(3), 504–513.

Mansi, G., & Levy, Y. (2013). Do instant messaging interruptions help or hinder knowledge workers' task performance? *International Journal of Information Management*, *33*(3), 591–596.

Marcos, H. (2013). How social network sites (SNS) have changed the employer – employee relationship and what are the next challenges for human resource (HR)? *REGE - Management Magazine*, *23*(1), 2–9.

Mark, G., Iqbal, S., Czerwinski, M., & Johns, P. (2015). Focused, aroused, but so distractible: temporal perspectives on multitasking and communications. In *Proceedings of the 18th ACM conference on computer supported cooperative work & social computing (CSCW '15)* (pp. 903–916). New York: ACM.

Marlatt, G., & Gordon, J. (1985). *Relapse prevention: Maintenance strategies in the treatment of addiction behavior*. NY: Guilford Press, New York.

Masood, A., Luqman, A., Feng, Y., & Ali, A. (2020). Adverse consequences of excessive social networking site use on academic. *Computers in Human Behavior*, 113.

Mayfield, C., & Moss, S. (1989). Effect of music tempo on task performance. *Psychological Reports*, *65*, 1283–1290.

McKenna, K. Y., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the internet for personality and social psychology. *Personality and Social Psychology Review*, *4*, 57–75.

Merriam-Webster. (2013). Merriam-Webster.com. Retrieved March 15, 2013, from http://www.merriam-webster.com/dictionary/distraction>.

Miller, J. (2014). The fourth screen: Mediatization and the smartphone. *Mobile Media & Communication*.

Min, J. (2017). Effects of the Use of Social Network Sites on Task Performance: Toward a Sustainable Performance in a Distracting Work Environment. *Sustainability*, *9*(12).

Minbashian, A. (2014). Short-term and long-term within-person variability in performance: An integrative model. *Journal of Applied Psychology*, *99*(5), 898–914.

Minbashian, A., & Luppino, D. (2014). Short-term and long-term within-person variability in performance: An integrative model. *Journal of Applied Psychology*, *99*(4), 898–914.

Moqbel, M., & Kock, N. (2018). Unveiling the dark side of social networking sites: Personal and work-related consequences of social networking site addiction. *Information & Management*, *55*(1), 109–119.

Naz, S., Khan, M., Yasin, S., & Bibi, H. (2019). Moderating role of extraversion personality trait in emotional intelligence and cognitive styles among university students. *Pakistan Journal of Social and Clinical Psychology*, 31–37.

Nicholls, A. R. (2016). The applicability of self-regulation theories in sport: Goal adjustment capacities, stress appraisals, coping and well-being among athletes. *Psychology of Sport and Exercise*, *27*(1), 47–55.

Orben, & Przybylski (2020). Reply to: Underestimating digital media harm. *Nature Human Behaviour*.

Orben, D., & Przybylski (2019). Social media's enduring effect on adolescent life satisfaction. *Proceedings of the National Academy of Sciences*, 10226–10228.

Pasek, J., More, E., & Hargittai, E. (2009). Facebook and academic performance: Reconciling a media sensation with data. *First Monday*, *14*(5).

Patel, V. P., Zambrana, A., Walker, L. A., Herrmann, N., & Feinstein (2017). Distraction adds to the cognitive burden in multiple sclerosis. *Multiple Sclerosis Journal*, *23*(1), 106–113.

Spector, PE., Brannick, M. T., Cooper, C. L., & Robinson, I. T. (1995). The nature and effects of method variance in organizational research. *International review of industrial and organizational psychology*. John Wiley & Sons.

Phua, J., Venus Jin, S., & Kim, J. (2017). Gratifications of using Facebook, Twitter, Instagram, or Snapchat to follow brands: The moderating effect of social comparison, trust, tie strength, and network homophily on Brand identification, Brand engagement, Brand commitment, and membership intenti. *Telematics and Informatics*, 412–424.

Poolton, J. M. (2016). Multitask training promotes automaticity of a fundamental laparoscopic skill without compromising the rate of skill learning. *Surgical Endoscop*, *30*(9), 4011–4018.

Qahri-Saremi, H., Vaghefi, I., & Turel, O. (2020). Addiction to social networking sites and user responses: Toward a typological theory and its relation to users' personality traits. *Data Base for Advances in Information Systems Forthcoming*, 1–42.

Roberts, J. W. (1959). Sound approach to efficiency. *Personnel Journal*, *38*, 6–8.

Rodrigues, P. F., & Pandeirada, J. N. (2020). The influence of the visual surrounding environment in older adults and young adults' cognitive performance: An alternative paradigm. *Journal of Cognitive Psychology*, *32*(3), 332–343.

Rolfo, L., Eklund, J., & Jahncke, H. (2017). Perceptions of performance and satisfaction after relocation to an activity-based office. *Ergonomics*, *61*, 644–657.

Ryan, T., Chester, A., Reece, J., & Xenos, S. (2014). The uses and abuses of Facebook: A review of Facebook addiction. *Journal of Behavioral Addictions*, 133–148.

Saadé, R., & Bahli, B. (2005). The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: An extension of the technology acceptance model. *Information & Management*, *42*(2), 317–327.

Sanders, G. S., & Baron, R. S. (1975). The motivating effects of distraction on task performance. *Journal of Personality and Social Psychology*, *32*(6), 956–963.

Seddigh, A., Stenfors, C., Berntsson, E., Bååth, R., & Sikström, S. (2015). The association between office design and performance on demanding cognitive tasks. *Journal of Environmental Psychology*, *42*, 172–181.

Sei, C. J., Kyung, S. K., Jiekun, Y., Joung, A. P., & Zac, T. (2011). International students' acculturation information seeking: Personality, information needs and uses. In *Proceedings of the American Society for Information Science and Technology* (pp. 1–4).

Shanique, G. B., Andrew, P. T., LaMarre, & Georgia (2019). Performance while distracted: The effect of cognitive styles and working memory. *Personality and Individual Differences*, *138*, 380–384.

Smith, W. A. (1961). Effects of industrial music in a work situation requiring complex mental activity. *Psychological Reports*, *8*, 159–162.

Stieger, S., Burger, C., Bohn, M., & Voracek, M. (2013). Who commits virtual identity suicide? differences in privacy concerns, internet addiction, and personality between facebook users and quitters. *Cyberpsychology, Behavior, and Social Networking*, *16*(9), 629–634.

Syrek, C. J. H. (2018). Share, like, twitter and connect: Ecological momentary assessment to examine the relationship between non-work social media use at work engagement. *Work & Stress*, *32*(3), 209–227.

Tops, M., & Boksem, M. (2010). Absorbed in the task: Personality measures predict engagement during task performance as tracked by error negativity and asymmetrical frontal activity. *Cognitive, Affective Behavior Neuroscience*, *10*(4), 441–453.

Turel, O. A., & Serenko, N. B. (2011). Family and work-related consequences of addiction to organizational pervasive technologies. *Information & Management*, *48*(2–3), 88–95.

Turel, O., & Qahri-Saremi, H. (2018). Explaining unplanned online media behaviors: Dual system theory models of impulsive use and swearing on social networking sites. *New Media and Society*, *20*(8), 3050–3067.

Turel, O., & Serenko, A. (2012). The Benefits and Dangers of Enjoyment with Social Networking Websites. *European Journal of Information Systems*, *21*(5), 512–528.

Turkle, S. (2013). *Alone together. Why we expect more from technology and less from each other*. Philadelphia: PA: Basic Books.

Turkle, S. (2015). *Reclaiming conversation: The power of talk in a digital age*. New York: Penguin.

Vishwanath, A. (2015). Habitual facebook use and its impact on getting deceived on social media. *Journal of Computer-Mediated Communication*, *20*(1), 83–98.

Wais, P. E. (2014). External distraction impairs categorization performance in older adults. *Psychology and Aging*, *29*(3), 666–671.

Wang, K., Yuxiang, L., & Zhang, Z. (2018). Relationship between extroversion and social use of social networking sites. *Social Behavior and Personality*, *46*(10), 1597–1610.

Wang, C. W., Ho, R., Chan, C., & Tse, S. (2015). Exploring personality characteristics of Chinese adolescents with internet-related addictive behaviors: Trait differences for gaming addiction and social networking addiction. *Addictive Behaviors*, 32–35.

Wang, D. (2017). A study of the relationship between narcissism, extraversion, drive for entertainment, and narcissistic behavior on social networking sites. *Computers in Human Behavior*, 138–148.

Wang, J. L., Jackson, L., Wang, H. Z., & Gaskin, J. (2015). Predicting social networking site (SNS) use: Personality, attitudes, motivation and internet self-efficacy. *Personality and Individual Differences*, 119–124.

Wang, K., Yuxiang, L., & Zheng, Z. (2018). Relationship between extroversion and social use of social networking sites. *Social Behavior and Personality*, *46*(10), 1597–1610.

Weinberg, R. S., & Gould, D. (1999). Personality and sport. *Foundations of Sport and Exercise Psychology*, 25–46.

Yoshino, K., Oka, N., Yamamoto, K., Takahashi, H., & Kato, T. (2013). Functional brain imaging using near infrared spectroscopy during actual driving on an expressway. *Frontiers in Human Neuroscience*, *7*(882), 1–16.

Yu, C., Liu, & Wang (2018). Excessive social media use at work: Exploring the effects of social media overload on job performance. *Information Technology & People*, 1091–1112.

Zheng, & Lee (2016). Excessive use of mobile social networking sites: Negative consequences on individuals. *Computers in Human Behavior*, 65–76.