Does Multitasking Computer Self-Efficacy Mitigate the Impact of Social Media Affordances on Overload and Fatigue among Professionals?

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Abstract

Purpose

This paper investigates the moderating role of multitasking computer self-efficacy on the relationship between social media affordances and social media overload as well as its moderation between social media overload and social media fatigue.

Design/methodology/approach

We hypothesize that social media affordances will have a positive impact on social media overload (i.e., information and communication overload). We also hypothesize that social media overload will affect social media fatigue. In addition, we hypothesize that multitasking computer self-efficacy will attenuate the effect of social media affordances on both information overload and communication overload. Similarly, we also hypothesize that multitasking computer self-efficacy will attenuate the effects of both information overload and communication overload on fatigue. We test this model by collecting two-wave data from 220 professionals using PLS techniques.

Findings

Social media affordances have significant impacts on information overload but not on communication overload. In turn, information overload and communication overload significantly affect social media fatigue. Multitasking computer self-efficacy was found to attenuate the effect of social media affordances on both information overload and communication overload. Furthermore, our study results suggest that multitasking computer self-efficacy attenuates the effect of information overload and reinforces the effect of communication overload on social media fatigue.

Originality/Value

Most prior literature focused on students rather than professionals. There is a lack of research that investigates how the affordances of social media relate to social media overload and fatigue. Furthermore, research that investigates mitigating mechanisms of social media fatigue has been rare. Our paper fills these important research gaps.

Keywords

Social media, Social media affordances, Information overload, Communication overload, Social media fatigue, Multitasking computer self-efficacy.

1. Introduction

It has been reported that one in four young people 'cannot live' without social media[1]. Similarly, it is predicted that by the year 2021, over 3 billion individuals will be social media users (Clement, 2019). One only has to look at a restaurant, bus, or even in a work environment to see people drawn to the likes of Facebook, WhatsApp, Instagram, and Twitter, usually through the smartphone. The negative consequences of the growing individual usage of social media has been widely recognized in the recent literature (e.g., Chen & Roberts 2019; Dhir et al. 2018, 2019; Laato et al. 2020a; Salo et al. 2018; Islam et al. 2020). One such negative consequence is *social media fatigue*, which refers to the subjective and self-evaluated feeling of tiredness from social media use (Lee et al. 2016). The wider adoption and use of social media, along with its affordances, have exposed people to a massive amount of information and communication demands that may require energy and cognitive processing beyond their capabilities. This phenomenon is called *social media overload* (Lee et al. 2016; Whelan et al., 2020b; Zhang et al. 2016; Laato et al., 2020b), which can lead to physical and psychological strain (Chen & Wei 2019; Lee et al. 2016).

Most prior literature on social media overload and fatigue focused on students rather than professionals. Although the unintended consequences of social media usage among professionals have been discussed in the recent IS literature (Chen & Wei 2019; Cao and Lu 2019), there is a lack of research that investigates how the affordances of social media relate to social media overload and fatigue. Social media fatigue may deteriorate mental and psychological strength of professionals, which in turn may lead to decreased performance and withdrawal from the service. Thus, understanding and mitigating social media overload and social media fatigue will help promote healthy social media usage – a focal issue of the technostress stream of IS research (Ayyagari et al. 2011; Maier et al. 2015a; Maier et al. 2015b).

The present study advances the extant research on problematic social media use through the affordance perspective (Gibson 1977). Affordances are a user's perception of an object's utility, that is, possible actions linked to its features (Treem & Leonardi, 2013). Whereas previous studies place the properties of people and/or technology central to undesired social media outcomes, affordances are composed in relationships between people and the materiality of technology (Treem & Leonardi, 2013). The affordances perspective may be beneficial to social media research (Chen et al., 2019). It can provide new insights into how technology use shapes user processes and interactions, and how technology use is shaped by the user's perceptions and needs.

We also aim to understand why some social media users, when overloaded with content, are more susceptible to fatigue than others. Specifically, we test how multitasking computer self-efficacy, a belief that a computer user can perform multiple tasks concurrently efficiently on the same computing device, reduces or reinforces social media overload and fatigue. Social media provide an opportunity for multitasking, i.e.

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[1] https://www.rsph.org.uk/about-us/news/instagram-ranked-worst-for-young-people-s-mental-health.html

performing two or more tasks at the same time (Brooks 2015). Prior research suggests multitasking can increase productivity for simple tasks (Speier et al. 2003). However, multitasking can also have a detrimental effect on productivity, as higher multitaskers are more susceptible to irrelevant interference (Brooks 2015). However, not all users have the same multitasking capability. Some computer users believe that they are efficient in multitasking and capable of completing a number of tasks concurrently in an efficient manner. Such users may have better capabilities to cope with social media overload and fatigue. Prior literature suggests that people with higher levels of self-efficacy are more comfortable with IT use (e.g., Agarwal et al. 2000; Fagan et al. 2004). However, it was also found to drive problematic Internet use (Ceyhan & Ceyhan 2008), as it is likely that users who believe that they have higher capability for computer usage will be drawn in deeper into the maladaptive aspects of usage. Therefore, we investigate the role of multitasking computer self-efficacy in mitigating or reinforcing the negative consequences of social media.

We collected data from 220 professionals and analysed the data using partial least squares (PLS) in order to test the proposed research model. The key findings are as follows. First, social media affordances have a significant influence on information overload but not on communication overload. Second, both information overload and communication overload affect social media fatigue; however, communication overload plays a more critical role in predicting social media fatigue. Third, multitasking computer self-efficacy attenuates the effect of social media affordances on both information overload and communication overload. Finally, multitasking computer self-efficacy attenuates the effect of information overload, but reinforces the effect of communication overload on social media fatigue.

The rest of the paper is organized as follows. In section 2, we describe the theoretical background. Section 3 is dedicated to the hypotheses' development. In section 4, we describe the data collection and analysis. In section 5, we describe the theoretical and practical implications of the paper. In section 6, we note the limitations and avenue of future research. Finally, section 7 concludes the paper.

2. Theoretical foundation

2.1 Social media affordances

The concept of *affordances* was originally introduced by Gibson (1977) in the natural environment. According to Gibson (1977), affordances of the environment are what it *offers* the animal, what it *provide*s or *furnishes*, either for good or ill. In other words, affordances are all action possibilities available in an environment. As an example, distinct animals could use a tree very differently because each animal would perceive a particular set of activities for which the tree would be useful – shelter, food, protection, vision, heat, etc. Thus, affordances are preconditions for activity. People do not interact with an object prior to or without perceiving what the object is good for (Treem & Leonardi 2012). According to Gibson (1977), affordances are independent of a person's ability to recognize them and dependent on his/her capabilities. Importantly, affordances exist whether they are perceived or not, whether a person cares about them or not, even if perceptual information for them exists or not (Pozzi et al. 2014). Norman (1988) later extended

the concept and argued that affordances are not only dependent on the capabilities of an individual, but also on his/her objectives, values, and beliefs, as well as prior experiences.

Similar to animals and a tree, different users will perceive social media as affording distinct possibilities for action. One user might perceive how a particular social media feature could be used, in a way unintended by the designer, to filter out irrelevant communications, while another user may use the same feature in the standard non-filtering manner. Though they use the same social media feature, the experience of each user could be quite different. Static measures of social media usage, as employed in existing studies (Mäntymäki & Islam 2016), do not capture this important distinction.

Social media scholars have found great utility in the affordance concept because it provides new insights into the relationship between the system and the user. The affordance perspective enables a nuanced understanding of when, why, and how social media influences user outcomes (Majchrzak et al. 2013). For example, Islam et al. (2019) conceptualized self-promotion as a social media affordance, which can have both positive and negative impact on individuals. In particular, they found that self-promotion had positive effects on both subjective vitality and addiction. In regards to an enterprise social media platform, the affordances of visibility and editability were found to ease the sharing of complex knowledge (Pee 2018). Likewise, affordances explain the quality of interactivity in social media e-commerce sites, which facilitate social ties and repurchase intentions (Dong and Wang 2018).

In another study, Rice et al. (2017) conceptualized, developed, and validated a scale for measuring organizational media affordances. In their study, media affordances were measured using pervasiveness, editability, self-presentation, searchability, visibility, and awareness. Here, we adapt Rice et al.'s (2017) conceptualization to social media affordances - that is, we conceptualize social media affordances using pervasiveness, editability, self-presentation, searchability, visibility, and awareness. Consequently, we define social media affordances as *relationships among action possibilities to which users perceive they could apply a medium (or multiple media), within its potential features/capabilities/constraints, relative to the user's needs or purposes, within a given context* (Rice et al. 2017). This definition highlights that because people have diverse needs or purposes, they perceive the social media as affording distinct possibilities for action (Islam et al. 2019). Specifically, our objective in this study is to apply the affordances lens to reveal the nuances of why overload is experienced more intensely by some social media users over others.

2.2 Information and communication overload

Many positive outcomes have been linked to social media engagement, such as increased social capital (Ellison et al. 2007), job satisfaction (Zhang et al. 2019), and improved employee performance (Song et al. 2019). However, an inverted U-shaped relationship has also been detected between social media use and psychological wellbeing (Islam & Patil 2015). Technology-mediated overload can explain why more digital

technology does not always result to higher subjective well-being (Chai et al. 2019) and productivity (Karr-Wisniewski & Lu 2010). Once social media use passes an optimum level, maladaptive outcomes begin to emerge (Karr-Wisniewski & Lu 2010).

Prior research has proposed that technology overload has three dimensions: information, communication, and system feature overloads (Karr-Wisniewski & Lu, 2010). Information overload occurs when the information that needs to be processed exceeds one's information processing capabilities. Communication overload occurs when one is engaged by too many communications demands that exceed his/her communication capacities. Finally, system feature overload occurs when the given technology is too complex for a given task, or the addition of new features is outweighed by the impact of technical resources and the complexity of use. Maier et al. (2015b) describe social overload as another kind of social media overload and defined it as the negative perception of social media usage when users receive too many social support requests and feel they are giving too much social support to other individuals embedded in their virtual social network.

Similar to the approach of Cao and Sun (2018), we conceptualise information overload and communication overload as the components of social media overload. System feature overload may have little importance in the social media use context as established social media service providers like Facebook have been widely adopted among a variety of users due to the ease of use of these services. The social media operators continuously aim at improving the user experience by developing more user-friendly interfaces (Islam et al. 2017). Thus, the users are unlikely to suffer from system feature overload in the social media context. We also argue that social overload can be already captured using communication overload as the social support requests may come as communication requests. Based on the above, we adopt information overload and communication overload in order to conceptualize social media overload in this paper.

While prior research studies have investigated the antecedents of information and communication overload in the social media context, they have tended to focus on demographic and usage characteristics (Maier et al., 2015b), or system and information characteristics (Cho, Ramgolam, Schaefer, & Sandlin, 2011; Lee et al., 2016). We extend this body of work by adopting an affordances perspective to determine how different users *perceive* the possibilities offered by social media, and how these perceptions relate to overload and fatigue. To the best of our knowledge, no study exists in leading communication technology journals linking a person's perception of social media affordances to maladaptive outcomes. Viewing social media overload through the affordances lens, as opposed to static measures of social media use, has the potential to offer an altogether different explanation as to why some people suffer from the information and communication cascade more than others. Such insights will be crucial in determining how we must adapt to mitigate the effects of technology-mediated overload.

In terms of the consequences of social media overload, it has been well documented that negative outcomes such as exhaustion (Maier et al., 2015b), mental health problems (Chen & Lee, 2013), and decreased performance (Cao et al., 2018; Turel & Qahri-Saremi, 2016) emerge once social media use surpasses an

optimal level. Studies have also confirmed the connection between social media overload and fatigue (Cao et al., 2018), a topic which we now turn to.

2.3 Social media fatigue

Fatigue is a complex concept with multiple definitions. Piper et al. (1987, p. 19) defined fatigue as "a subjective, unpleasant feeling of tiredness that has multiple dimensions varying in duration, unpleasantness and intensity". Additionally, Lewis et al. (1992) defined it as a lassitude or exhaustion of mental and physical strength resulting from bodily labour or mental exertion. A common theme in these definitions is a general malaise and sapping of the drive to continue the activity.

Given that increasing amounts of online time is spent on social media, it follows that many users may feel fatigue symptoms. Social media fatigue can come from variety of sources (Bright et al. 2015). First, it can come from interpersonal interactions. For example, social network users can reach out to old friends and acquaintances, post about current activities, provide rhetoric on worldly politics, share photos, etc. Similarly, more recent research identifies online social comparison and self-disclosure as significant predictors of social media fatigue (Malik et al. 2020). Second, interactions with companies and brands can also create fatigue. Brands continue to promote products on social media and get opinions about their products and services (Islam et al. 2019). Third, changes in the interface or introduction of new features may create fatigue to the users who have to learn a new way of interaction.

Fatigue is an individual's feeling based on subjective experiences. Consequently, we define social media fatigue as a subjective and self-evaluated feeling of tiredness from social media usage (Lee et al. 2016). Several prior studies have investigated antecedents of social media fatigue. Lee et al. (2016) found that information overload, communication overload, and system feature overload directly affect social media fatigue. Zhang et al. (2016) echoed the same findings. Bright et al. (2015) reported social media confidence, social media self-efficacy, privacy concern, and social media helpfulness as the determinants of social media fatigue. Additionally, Maier et al. (2015a) identified several technology-related stressors that may influence social media exhaustion. However, these prior studies did not consider the moderating variables, which may influence the relationship between overload and fatigue, an important gap in our knowledge which we address in this paper.

Social media users reduce their usage when they feel social media fatigue. This can occur when the user becomes overwhelmed with too many sites, too many pieces of content, too many friends and contacts, and too much time spent keeping up with these connections (Bright et al. 2015). Users can face difficulties in managing the massive amount of information and communication from others and feel fatigued (Lee et al. 2016). In turn, fatigue may lead to dissatisfaction (Zhang et al. 2016) and discontinuance of social media (Ravindran et al. 2014; Zhang et al. 2016). However, there is yet to be a study published which examines how users' multitasking abilities influence social media fatigue. Social media, especially social networking, has been identified as a multitasking-heavy technology (Bannister & Remenyi, 2009).

2.4 Multitasking computer self-efficacy

Multitasking refers to performing two or more tasks at the same time (Stephens & Davis 2009). Multitasking "has become synonymous with the communication technology–infused workplace of today" (Turner and Reinsch 2007, p. 36). Prior literature has found both positive and negative results as a result of multitasking. For example, Speier et al. (2003) suggest multitasking may improve one's productivity in simple tasks. However, Jacobsen & Forste (2011) found that multitasking via electronic media had a negative relationship with GPA among college students.

Self-efficacy (Bandura 1986) refers to the belief of one's capability to perform a certain behaviour. Compeau & Higgins (1995) adapted it to the context of computing and defined computer self-efficacy (CSE) as one's belief about his/her capability to use computing devices. CSE has been widely used in IS literature, where it has been regarded as a motivator for IT adoption and use (e.g., Agarwal et al. 2000; Fagan et al. 2004; Scott & Walczak 2009). CSE is significantly related with problematic Internet use (Ceyhan & Ceyhan 2008), as it is likely that users who believe that they have higher capability for computer usage will be drawn in deeper into the possibilities that the Internet provides.

Combining these two concepts, multitasking computer self-efficacy is defined as a person's perception of the ability to perform and ease of computer use regarding concurrent execution of two or more tasks by using a single central processing unit (Basoglu et al. 2009). In short, multitasking computer self-efficacy is the belief that a computer user can efficiently perform multiple tasks concurrently on the same computing device. In prior research, higher levels of multitasking self-efficacy have been found to help reduce cognitive load in an interruption-filled environment (Basoglu et al. 2009).

3. Hypotheses development

3.1 Direct effects of social media affordances on social media overload

Social media affords the opportunity to access a massive amount of information. Social media provides a number of features that afford access to diverse types of information. For example, there is information related to personal lives, news, events, brand related promotion, and group conversations. Indeed, with search functions, users can search for the relevant information they need. However, users also pay attention to information that is not relevant for them. Using social media applications in smartphones allows users access information anytime, anywhere. Access to this large volume of information can cause information overload. Information overload occurs when the amount of input to a system exceeds its processing capacity (Milord & Perry 1977). Too much information on social media can quickly cross users' cognitive limits in processing information and make them feel overwhelmed (Karr-Wisniewski & Lu 2000), leading to information overload. Consequently, we propose the assessment of affordances offered by social media will have a direct bearing on information overload.

H1. The aggregate dimension of social media affordance will have a positive influence on information overload.

We posit that users who perceive social media as affording them with the ability to get responses to their requests quickly (i.e. pervasiveness), see the number of others who have "liked" or linked to the same content (i.e. visibility), or keeping up-to-date with developments (i.e. awareness), are likely to have many social media contacts whom they engage with frequently. Prior research has demonstrated a strong link between the number of social media friends, the extent of social media usage, and social overload (Maier et al. 2015b). Likewise, in the workplace, the communication visibility affordance of social media has made employees more aware of what others know (Leonardi, 2014), yet as the inverted-U concept shows (Islam & Patil 2015), too much communication visibility is likely to result in overload. Recent research concludes that communication visibility positively moderates the inverted U-shaped relationships between enterprise social media use and social overload (Chen and Wei, 2019).

Exploring social media through an affordances lens led Majchrzak et al. (2013) to expose the helpful and hindering aspects of the technology on productive knowledge conversations, with one of the hindrances being the attention draining costs of constant interruption. These interruptions may distract them from their primary tasks, and also may cause the user to become overwhelmed, as they can't deal with the situation effectively. Interruptions can exacerbate communication overload in two ways. First, they take time away from working on on-going work activity, potentially resulting in a feeling of time pressure and, ultimately, overload (Speier et al. 1999). Second, the interruptions themselves can place greater demands on cognitive processing and result in an increase in information load and task processing demands (Norman & Bobrow 1975). Therefore, we propose the following hypothesis.

H2. The aggregate dimension of social media affordance will have a positive influence on communication overload

3.2 Direct effects of overload on social media fatigue

Lee et al. (2016) describe information overload and communication overload as two major stressors that can have increased impacts on strains such as social media fatigue. Being in a state of overload consumes the cognitive resources the person could allocate to other tasks. Hence, these additional tasks do not get completed, compounding the feelings of fatigue. According to Miller's law (Miller 1956), the human brain can only hold roughly seven chucks of information in a short time period. When the cognitive load placed upon the individual exceed this level, they experience stress and mental fatigue (Mizuno et al. 2011). Information overload can lead to dysfunctional consequences such as information anxiety (Wurman 1989), information fatigue (Lewis 1996), stress (Misra & Stokols 2011), and distract users from other important activities (Eppler & Mengis 2004). In the social media context, several prior studies reported that not only is the intensity of social media use a strong predictor of fatigue (Malik et al. 2020), but also the user's perception of information overload emanating from that usage (e.g., Bright et al. 2015; Lee et al. 2016; Zhang et al. 2016). Therefore, we propose the following hypothesis.

H3. Information overload will have a positive influence on social media fatigue

Most professionals use multiple social media platforms to stay connected with their peers. This opens up the possibilities to receive more communication requests from different channels. Each communication request interrupts the work or activity one has been doing. Too many interruptions can go beyond one's communication capacities, which can lead to communication overload. This is related to the theory that humans are limited in the number of social relationships they can maintain, with 150 considered to be the maximum (Dunbar 1992). Overextending our communication abilities is a significant stressor (Podsakoff et al., 2007), which manifests as exhaustion for social media users (Maier et al. 2105a). Prior literature has found that communication overload can have negative consequences such as decreased work productivity (Mcfarlane & Latorella 2002) as well as increased fatigue (Klapp 1986). In the social media use context, several prior studies reported communication overload as a major source of social media fatigue (see Lee et al., 2016; Whelan et al., 2020a). Consequently, we hypothesize the following.

H4. Communication overload will have a positive influence on social media fatigue

3.3 Moderating role of multitasking computer self-efficacy

Although the concept of multitasking computer self-efficacy has been rarely used in relation to social media (Islam et al. 2018), self-efficacy has been investigated in relation to social media use. For example, Wang et al. (2008) conducted a study to investigate the role of general and specific computer self-efficacy in relation to continued Facebook use. Lampe et al. (2011) found self-efficacy predicted Facebook use among students for classroom-related collaborative activities. Another study (Krämer and Winter 2008) found self-efficacy had influence on the level of profile detail, extent of the contact list, and style of the profile picture. A more recent study (Li 2019) reports that self-efficacy moderated the effect of upward social comparison on depressive symptoms as well as the effect of envy on depressive symptoms. Self-efficacy has also been investigated in the context of the dark side of social media; those with greater self-efficacy suffered from greater social media fatigue (Bright et al. 2015).

When a person encounters a new task, they try to apply their existing schemas, defined as "an abridged, generalized, corrigible, organization of experience that serves as an initial frame of reference for action and perception" (Weick 1979, p. 50), in order to make sense of the new task. We argue that people with higher multitasking computer self-efficacy possess better schemas and knowledge that can be used for problem solving using a computer. In other words, a person's belief in their ability to use a computer for multitasking determines the extent of cognitive processing they must employ to successfully execute a task. Those with lesser belief in their ability must use more cognitive resources to process the requirements of the task and even more to understand how to use the computing device to achieve the goal. People with higher multitasking computer self-efficacy are expected to be more efficient in recognizing information that fits with the problem in hand (Islam et al. 2018) as well as cope with multiple communication interrupts that one receives from social media, thus requiring fewer resources and effort to process the new task.

Based on the above discussion, we suggest that people with higher multitasking computer self-efficacy will experience lesser social media overload from their use. Therefore, we propose the following hypotheses.

H5. Multitasking computer self-efficacy will negatively moderate the relationship between the aggregate dimension of social media affordance and information overload

H6. Multitasking computer self-efficacy will negatively moderate the relationship between the aggregate dimension of social media affordance and communication overload

Prior studies of self-efficacy have considered its relationship to stress (Makara-Studzinska et al., 2019; Garu et al. 20001). For example, Grau et al. (2001) suggest that control is a key factor in moderating stress as it can mitigate the adverse effects of stressors. When exposure to stressors occurs without control on the part of the subject, it may lead to adverse outcomes. As self-efficacy is essentially concerned with control, Grau et al. (2001) proposed and empirically validated the moderating effects of both generalized and professional self-efficacy on the stressor-strain relationships. In the context of social media, Lee et al. (2016) suggested information and communication overload as stressors, with social media fatigue as the resulting strain. Yet, when in a state of overload, different users are likely to experience different levels of fatigue. Given its relationship to stress, one's self-efficacy may moderate the relationships between information and communication overload and social media fatigue. Furthermore, literature on multitasking also shows that an individual's preference for shifting between different ongoing tasks, rather than focusing on one task at a time until completion may lead to improved well-being and job performance (see Kirchberg and Roe, 2015).

Based on the above discussion, we argue that individuals who possess a higher level of multitasking computer self-efficacy will have more control to mitigate the risks from stressors. This implies that they will experience lesser fatigue from information and communication overload compared to those with lower multitasking computer self-efficacy. Consequently, we hypothesize the following.

H7. Multitasking computer self-efficacy will negatively moderate the relationship between information overload and social media fatigue

H8. Multitasking computer self-efficacy will negatively moderate the relationship between communication overload and social media fatigue

The overall research model is shown in Figure 1.

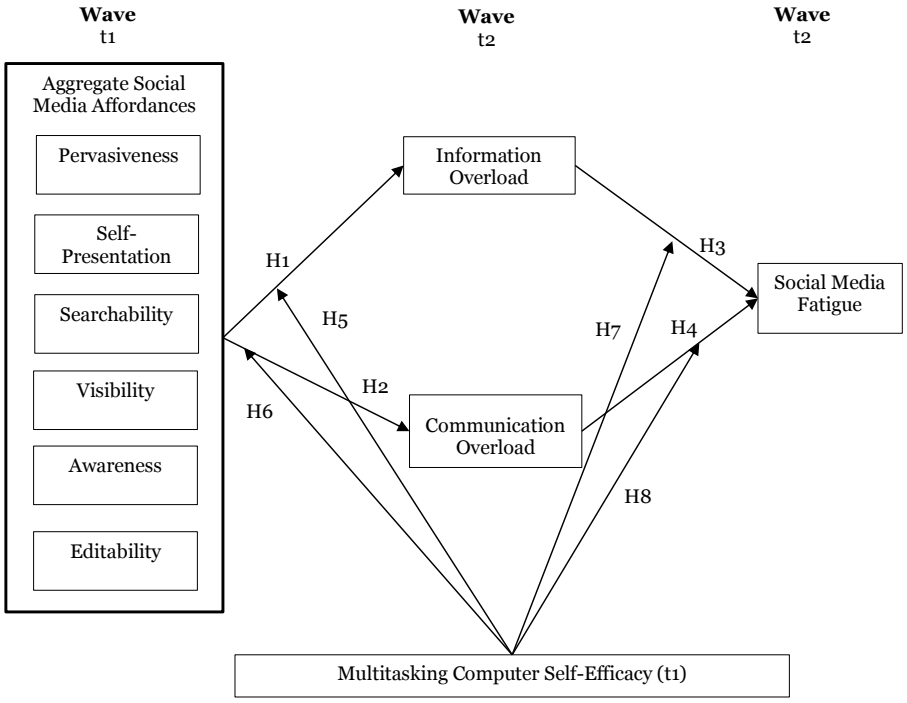

Figure 1. The Research Model

4. Study design

4.1 Data collection and analysis

To evaluate our research model, we developed a measurement instrument (shown in Appendix 1) and conducted a survey. The measures for social media affordances, information overload, communication overload, social media fatigue, and multitasking computer self-efficacy were adopted from prior literature and were measured on a seven-point Likert scale with response choices ranging from "Strongly disagree (1)" to "Strongly agree (7)". Data was collected from 220 professionals from a major telecommunication service provider in South Asia in two waves (t1 and t2 as shown in Figure 1). In wave 1, we collected data on the dimensions of social media affordances and multitasking computer self-efficacy. In wave 2, we collected data on information overload, communication overload, and social media fatigue. To identify the respondents of this research, we cooperated with Xtelecom (a pseudonym of the telecommunication company) from a country in the South Asian region. Xtelecom was interested to investigate the effects of social media on their employees. Xtelecom hosted the survey and the link was sent to 1000 randomly

selected employees by the company's communication unit. At the first wave, 365 respondents completed the survey. After two weeks, these 365 professionals were asked to respond to the questions of wave 2 (information overload, communication overload, and social media fatigue). 220 respondents completed wave 2. Therefore, we used data from these 220 respondents to test our research model. This yielded a response rate of 22%. Approximately, 65% of the respondents were male. Approximately, 60% professionals had job titles that relate to technical work (e.g., engineers, technical team lead), whereas, 30% relate to marketing and business professionals (marketing manager, business analyst). The average age of the respondents was 36 years, and ranged from 23 years to 49 years. We asked the respondents to report the social media platforms they use. All respondents reported that they use internal enterprise social media platform as well as Facebook and LinkedIn. 95% respondents reported that they use WhatsApp, 90% reported that they use Viber, 84% reported that they use IMO, and 43% reported that they use Instagram.

The analysis utilized the PLS approach with SmartPLS software (Ringle et al. 2005). PLS-SEM is an appropriate method to use when the goal of the study is both to evaluate the validity of a research model, and to test the hypothesised relationships within that model (Hair *et al.* 2017), as is the case for this present study. While the covariance based (CB-SEM) approach could also have been used for thus study, PLS is more appropriate when the research aims to extend existing theory and predict key target constructs (Hair *et al.* 2017). When the research model contains circular relationships, or the goal is a comparison of laternative theories, then CB-SEM is more appropriate. For these reasons, PLS-SEM was deemed a better fit for this study's objectives over CB-SEM.

We followed Gefen & Straub's (2005) procedure to test convergent and discriminant validity. Convergent validity indicates the extent to which items on a scale, which are theoretically related, are also related in reality. We evaluated the convergent validity by examining item loadings, composite reliabilities (CRs), and average variance extracted (AVE) values. With regard to item loadings, Fornell & Larcker (1981) have recommended values of at least 0.7 to be acceptable. The loadings are shown in Appendix 2. The composite reliabilities being above 0.8 and AVE values exceeding 0.5 further support satisfactory convergent validity (Fornell and Larcker 1981). The CRs and AVEs are shown in Table I.

	Composite Reliability	**AVE**
Awareness	0.83	0.71
Communications Overload	0.88	0.64
Fatigue	0.92	0.69
Information Overload	0.88	0.70
Multitasking Computer Self-Efficacy	0.92	0.80
Self-Presentation	0.86	0.68

Pervasiveness	0.80	0.57
Searchability	0.86	0.68
Editability	0.88	0.79
Visibility	0.91	0.67

Table I. Construct Composite Reliabilities and Average Variance Extracted Values

Discriminant validity refers to whether the items measure the construct in question or other (related) constructs (Gefen and Straub 2005). We evaluated the discriminant validity by comparing the square roots of AVE values to the inter-construct correlations (Fornell and Larcker 1981). Table II shows the correlation matrix with the square root of AVE values presented diagonally. As can be seen from the table, the square roots of the AVE values for the variables are consistently greater than the off-diagonal correlation values, suggesting satisfactory discriminant validity between the variables.

	1	2	3	4	5	6	7	8	9	10
Awareness (1)	**0.84**									
Communications Overload (2)	0.10	**0.80**								
Fatigue (3)	0.03	0.70	**0.83**							
Information Overload (4)	-0.09	0.68	0.65	**0.84**						
Multitasking Computer Self-Efficacy (5)	0.22	0.43	0.24	0.33	**0.89**					
Self-presentation (6)	0.35	0.03	0.01	-0.01	0.14	**0.82**				
Pervasiveness (7)	0.33	0.27	0.13	0.15	0.51	0.41	**0.75**			
Searchability (8)	0.13	0.37	0.22	0.42	0.48	0.20	0.46	**0.82**		
Editability (9)	0.06	0.28	0.13	0.35	0.45	0.26	0.33	0.68	**0.89**	
Visibility (10)	0.22	0.34	0.26	0.38	0.48	0.32	0.47	0.70	0.70	**0.82**

Table II. Correlations between latent variables (square root of AVEs bolded in the main diagonal)

We further verified discriminant validity by examining item cross-loadings, presented in Appendix 2. All items load higher on their assigned latent construct than on any other construct (Fornell and Larcker 1981). This indicates that discriminant validity at the item level is met for all the constructs (Gefen and Straub 2005). We have observed that the values ranged from 1.9 to 5.1, which is below the suggested cutoff value of 10 (Hair et al., 1998). Therefore, we concluded that multi-collinearity was not a serious concern for our study. We also looked at HTMT assessment to ensure multi-collinearity was not an issue i.e. we observed HTMT values are below 0.85 threshold. This further indicated discriminant validity was present in our data (Henseler et al., 2015).

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We used the goodness-of-fit (GoF) and standardized root mean square residual (SRMR) statistics (Henseler and Sarstedt 2013) in order to investigate how well the data fit with our model as well as detect possible model misspecification. We calculated GoF using the equation by Wetzels et al. (2009) and obtained a value of 0.39. Based on the criteria provided by Wetzels et al. (2009) (small = 0.1, medium = 0.25, and large = 0.36), our model had good fit. We also calculated the SRMR and obtained a value of 0.07. According to Hu and Bentler (1999), SRMR below 0.10 or, more conservatively, 0.08 indicates good model fit. Therefore, we conclude that our model exhibited good fit to the data.

We employed a longitudinal measurement, which mitigates the risk of CMB (Podsakoff, MacKenzie, & Lee, 2003). However, to evaluate any residual CMB in our data, we conducted several tests. First, we conducted Harman's single factor test. We conducted a principal component analysis and found no single construct accounted for a majority of the total variance. Second, we conducted a test that Liang et al. (2007) describe. We included a common method factor by reusing all the indicators from the principal constructs in the PLS model. We then calculated each indicator's variances substantively explained by the principal construct and by the method factor. The results demonstrate that the average substantively explained variance of the indicators was 0.65, and the average method-based variance was 0.01. Given the small magnitude of method variance, we conclude that the CMB is unlikely to be a serious concern for this study.

4.2 Structural model test

We modeled the aggregate dimension of social media affordance as a second order construct using six dimensions: pervasiveness, self-presentation, searchability, visibility, awareness, and editability. The path coefficients between first and second order construct are shown in Table III.

1st order constructs	**Weight to 2nd order construct (i.e. social media affordances)**
Pervasiveness	0.20***
Self-presentation	0.20***
Searchability	0.28***
Visibility	0.47***
Awareness	0.10***
Editability	0.002 ns

Table III. Path Coefficients between 1st order constructs and aggregate social media affordances (* - p<0.05; ** - p<0.01; *** - p<0.001)

As shown in Table 3, out of the 6 affordance dimensions, 5 had significant path coefficients. The editability dimension of affordance had non-significant path coefficients with the aggregate social media affordances. Next, we test our proposed hypotheses. Figure 2 shows the results of the structural model test.

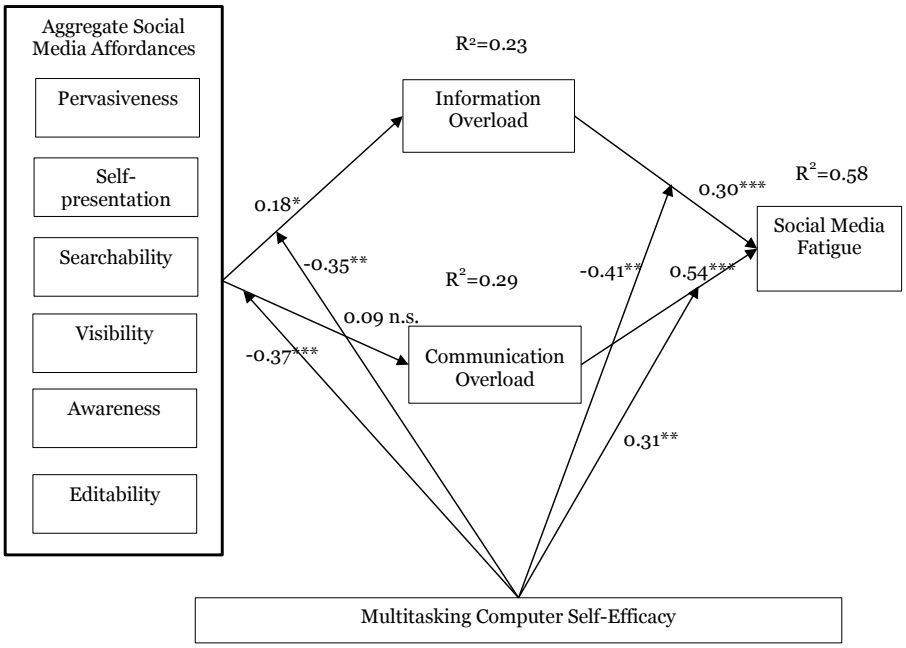

Figure 2. PLS results *(* - p<0.05; ** - p<0.01; *** - p<0.001)*

The aggregate social media affordance (β=0.18, p<0.05) had a significant direct effect on information overload. Hence, H1 was supported. H2 was not supported as we observed that the aggregate social media affordance (β=0.09, n.s.) had a non-significant influence on communication overload. In turn, information overload (β=0.30, p<0.001) and communication overload (β=0.54, p<0.001) had significant effects on social media fatigue, supporting H3 and H4. The average score of multitasking computer self-efficacy was 5.01 (S.D. = 1.15). The interaction term of aggregate social media affordance and multitasking computer self-efficacy (β=-0.35, p<0.01) had a significant negative effect on information overload. Similarly, the interaction term of aggregate social media affordance and multitasking computer self-efficacy (β=-0.37, p<0.01) had a significant negative effect on communication overload. Therefore, H5 and H6 are supported. As hypothesised in H7, the interaction term of information overload and multitasking computer self-efficacy (β=-0.41, p<0.01) had a significant negative influence on social media fatigue. Finally, H8 was not supported as the interaction term of communication overload and multitasking computer self-efficacy (β=0.31, p<0.01) had a significant positive effect on social media fatigue.

We used age and gender as the controls on our final dependent variable, social media fatigue. Both age and gender were non-significant in predicting social media fatigue. The model explained 23% and 29% of the variance of information overload and communication overload, respectively. We also observed that the model explained 58% of the variance of social media fatigue.

5. Discussions and implications

This study investigated whether multitasking computer self-efficacy mitigates the effects of social media affordances on social media overload and social media fatigue. By collecting data from 220 social media users, we tested our proposed research model and observed several interesting findings. We found that social media affordances had positive direct impact on information overload but not on communication overload. Furthermore, we also found that multitasking computer self-efficacy attenuates the effect of social media affordances on both information overload and communication overload. To the best of our knowledge, no prior literature revealed these two relationships. Therefore, our paper identifies new predictors of social media overload and contribute to the literature on social media overload (Lee et al. 2016; Maier et al. 2015a, 2015b).

5.1 Theoretical contribution

To demonstrate our study makes a significant theoretical contribution, we follow the advice of Leidner (2020) who purports; "*The key to shining in the area of theory is to offer a new perspective or a new way of interpreting a phenomenon, thus offering insights that are unexpected, surprising, or counterintuitive (e.g., nonobvious) and making individuals pause to reflect about something that they would not otherwise have thought about and about which they are glad that they did." (pg. 240).* Following this logic, the central theoretical contribution our study makes is to offer a new perspective as to why some social media users experience higher overload and fatigue than others. Existing studies of social media overload explain the phenomenon by investigating the predictive value of actual usage of the technology (Maier et al., 2015b), or system and information characteristics (Cho, Ramgolam, Schaefer, & Sandlin, 2011; Lee et al., 2016). We introduce the theoretical lens of affordances to argue, and ultimately validate, the efficacy of technology perceptions in explaining information overload associated with social media. This insight challenges conventional wisdom that the interaction between load of information itself and the user's ability to process that information, are ultimately what drives perceptions of overload. Information overload is a more nuanced concept and can materialize based on how the user perceives the possibilities afforded by social media. This insight can inspire new avenues to explore the dark side of IS (Salo et al. 2018) by determining the role user perceptions of technology play in explaining maladaptive outcomes.

Though we hypothesized that multitasking computer self-efficacy would attenuate the effect of communication overload on social media fatigue, our results show that it can actually reinforce this effect. This insight is unexpected requiring us to recalibrate our notion of how both information overload and communication overload are experienced. Communication overload occurs due to interruptions by too many communication demands, and thus may need different coping abilities than information overload.

For example, one may interrupt dinner to send a "quick email" related to work from his/her phone, post a status on Facebook, tweet a photo of his/her dinner, and so on. This way, an individual opens up the possibilities of too many communication requests. In such situation, individuals with higher multitasking computer self-efficacy believe that they can deal with the communication demands, but later realize that dealing with the unnecessary communication requests reduce their efficiency and become fatigued.

Furthermore, the relationship between social media engagement and outcomes such as overload and fatigue, do not exist in a vacuum. However, existing studies social media overload tend to focus direct relationships between predictor and outcome variables. One notable exception is Chen and Wei's (2019) study which validated the moderating effect of communication visibility on the relationship between social media use and overload. In an additional theoretical contribution, our study extends previous work by offering a new theoretical explanation, based on multitasking computer self-efficacy, as to how and why social media affordances leads to overload, and why overload leads to fatigue. Our results suggest that multitasking computer self-efficacy attenuates the effect of information overload and reinforces the effect of communication overload on social media fatigue. Some prior literature does indirectly support our conclusion. For example, in an experiment on student performance, Kononova et al. (2016) found that those who had higher preference for multitasking (i.e. higher polychronics) recognised online article content more accurately than those who had lower preference for multitasking (i.e. lower polychronics) in both forced and voluntary multitasking conditions. Lower polychronics showed that checking Facebook freely while reading online was cognitively demanding in compare to higher polychronics. This supports the notion that higher polychronics are better equipped in coping with information overload-related fatigue due to their higher multitasking skills. In sum, our results help research on social media overload progress from investigating the general association with negative consequences, such as fatigue, toward more detailed and specific explanations of when, or under what conditions, social media overload leads to maladaptive outcomes.

5.2 Practical implications

Social media users need to be aware that feelings of overload and fatigue are likely to emerge from engagement with these platforms. However, these maladaptive sensations are not just a manifestation of how one actually uses social media. Our study suggests one's perceptions of the opportunities the platform affords them, and of their own multitasking abilities, are prominent in explaining why some users experience higher information overload and fatigue. While it is tempting to view platforms like Twitter to as a mechanism to keep informed of the latest news, and to search and to distribute that news to shape followers' opinions, based on our findings, these heightened expectations of what social media provides will lead to information overload and fatigue. Thus, one practical implication from our study is that when it comes to staying informed, social media users should narrow their expectations of what the platform affords them. Setting more realistic expectations of what can be done through social media should help users avoid spreading themselves too thin, thus avoiding the state of overload.

Additionally, we suggest that users need to be aware that multitasking computer self-efficacy could be a double-edged sword. We found that it can both attenuate and reinforce the effects of social media on social media overload and social media fatigue. They should know that improving multitasking computer self-efficacy alone will not help in dealing with social media fatigue that is created from communication overload. In fact, it may increase fatigue if it is not managed and utilized carefully. Thus, we recommend that practitioners improve their multitasking computer self-efficacy, but also realize that they are not necessarily capable of handling too many communication requests just because they have developed higher multitasking computer self-efficacy. This improvement will likely materialise as the users experience and practice with different social media platforms grows. They should set personal strategies like defining the rules of engagement to communication requests. Not all communication requests are equally important; thus, they could make a priority list of communication requests based on their objectives and expectations. We also suggest social media operators help users manage communication requests. For example, they can provide users with a more controllable environment that helps building the priority lists of communication requests as well as providing optional filters to content and communication requests that they do not find particularly interesting.

Social media providers should strive to understand the different affordances users find with regards to the available features. If users are finding ways to use features in unintended ways, it could allow for increased overload and fatigue. By placing tighter controls on the abilities and social media features, or by creating new tools and features that are meant to be used in the ways that other features currently are, the unintended uses would be cut. Social media platforms and content providers should also be reminded that providing more communication requests or information to their users will cause fatigue and likely lead to discontinuance.

6. Limitations and future research

As with any other empirical research, the present study is subject to a number of limitations. However, the limitations could serve as avenues for further research. First, this paper collected data from the professionals of a single industry of single country. Therefore, future research should collect data from other industries as well as other countries. This wider-ranger subject pool would increase the generalizability of this study's findings, or would provide insight into specific categories of industry and/or cultures that have differing effects.

Second, it may be that information and communication overload are mediating the effects of affordances on social media fatigue. However, in this paper, we only investigated the moderating effects of multitasking self-efficacy. Therefore, we suggest future research to investigate if these relationships are mediated moderated.

Third, this study employed self-reported data to test the research model. Self-reported data inherently suffers from biases. Therefore, future research should employ a research design to additionally collect

objective data to validate the proposed relationships. The combination of objective and subjective data could help inform the differences between reality and belief in a user's social media overload and multitasking ability.

Fourth, the driver of multitasking may vary depending on situations. For example, in an organizational setting, multitasking is mandatory. In a user's personal life, multitasking may be voluntary. Thus, future research should investigate the dynamics of multitasking computer self-efficacy in affecting social media overload and fatigue in different settings. Additionally, multitasking could affect users differently when they are using social media for utilitarian reasons, such as workplace duties, as compared to hedonic reasons.

Fifth, delving deeper into the interactions with multitasking computer self-efficacy should provide interesting, nuanced insights. Specifically, comparing the difference between a user's multitasking computer self-efficacy with their actual ability to multitask with a computer. Within the four possible outcomes of this, namely 1) high self-efficacy/high ability, 2) high self-efficacy/low ability, 3) low self-efficacy/low ability, and 4) low self-efficacy/high ability, more specific recommendations could be made for how to mitigate the negative effects of overload.

Finally, another area of future research should be in investigating the effects of innovative social media features on information overload, communication overload, and social media fatigue. For example, it would be worth investigating to what extent optional filters to content and communication requests help mitigate communication overload and social media fatigue. The results of this inquiry could inform managers and individuals of steps that they can take to reduce these negative outcomes.

7. Conclusion

This paper investigated whether multitasking computer self-efficacy attenuates or reinforces the effect of social media on overload and fatigue among professionals. In order to achieve the objective, we used social media affordances as the determinant of information and communication overload. In turn, we placed information and communication overload as the determinants of social media fatigue. We utilized multitasking computer self-efficacy as the moderator in the model. We collected data from 220 professionals to test the research model. Our findings suggest that multitasking computer self-efficacy indeed mitigates the effect of social media on information overload and social media fatigue. However, at the same time it can reinforce the effect of communication overload on social media fatigue.

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Appendices

Appendix 1: Questionnaire items

Construct	Item
Information Overload (Karr-Wisniewski & Lu 2010)	IO1: I am often distracted by the excessive amount of information in social media
	IO2: I find that I am overwhelmed by the amount of information that I process on a daily basis from social media
	IO3: Usually, my problem is with too much information to make sense of, instead of not having enough information to make decisions
Multitasking Computer Self-Efficacy (Brooks	MSE1: I believe I have the ability to work effectively on more than one task on a computer at once

2015)	MSE2: I believe I have the ability to shift from task to task effectively on a computer
	MSE3: I believe I have the ability to do several things at once on a computer
Social Media Fatigue (Lee et al. 2016)	Fat1: I find it difficult to relax after continually using social media
	Fat2: After a session of using social media, I feel really fatigued
	Fat3: Due to using social media, I feel rather exhausted
	Fat4: After using social media, it takes effort to concentrate in my spare time
	Fat5: During social media use, I often feel too fatigued to perform other tasks well
Communication Overload (Karr-Wisniewski & Lu 2010)	CO1: I feel that in a less connected environment, my attention would be less divided allowing me to be more productive
	CO2: I often find myself overwhelmed because technology has allowed too many other people to have access to my time
	CO3: I waste a lot of my time responding to messages that are not directly related to what I need to get done
	CO4: The availability of electronic communication has created more of an interruption than it has improved communications.
Searchability (Rice et al. 2017)	The social media that I mostly use allows me to …search for information or people by entering search words.
	…search for information or people by following links from the posted contents.
	…search for tags or keywords that someone else has added to content.
Editability (Rice et al. 2017)	…edit my information after I have posted it
	…create or edit a content collaboratively
Pervasiveness (Rice et al. 2017)	…get responses to my requests from others quickly
	…communicate with others while moving, commuting, traveling
	…communicate with infrequent or less important work relationships
Visibility (Rice et al. 2017)	…see other people's answers to other people's questions
	…see who has interactions or links with particular people or their information
	…see the number of others who have "liked" or linked to the same content
	…receive notifications about other information or updates that are similar to what I have just been looking at
	…receive notifications about other people's information or updates
Self-presentation (Rice et al. 2017)	…include the information, photos, and other content that present my personal identity
	…adjust my profile to my preferences
	…have my information or comments stay available after I post them
Awareness (Rice et al. 2017)	…be aware of the information my peers have
	…be aware of activities, opinions, or locations of others

Appendix 2: Loadings and Cross loadings

	1	2	3	4	5	6	7	8	9	10
Perv1	0.30	0.05	-0.03	-0.01	0.16	0.47	**0.73**	0.23	0.18	0.29
Perv2	0.29	0.02	0.00	-0.03	0.15	0.34	**0.75**	0.21	0.17	0.29
Perv3	0.19	0.44	0.26	0.30	0.69	0.18	**0.77**	0.52	0.36	0.44
Aware1	**0.84**	0.08	0.03	-0.04	0.18	0.36	0.29	0.07	0.06	0.18
Aware2	**0.85**	0.08	0.02	-0.11	0.19	0.24	0.27	0.14	0.05	0.18
MSE1	0.20	0.37	0.27	0.33	**0.90**	0.13	0.38	0.40	0.38	0.43

MSE2	0.17	0.42	0.19	0.33	**0.93**	0.16	0.54	0.50	0.42	0.48
MSE3	0.23	0.35	0.17	0.22	**0.85**	0.08	0.44	0.37	0.41	0.36
CO1	-0.00	**0.85**	0.64	0.66	0.40	0.04	0.26	0.38	0.32	0.33
CO2	0.06	**0.83**	0.62	0.59	0.32	-0.03	0.21	0.27	0.18	0.26
CO3	0.11	**0.76**	0.38	0.44	0.36	0.06	0.21	0.25	0.21	0.20
CO4	0.17	**0.76**	0.58	0.43	0.28	0.04	0.17	0.27	0.16	0.28
Fat1	0.07	0.63	**0.82**	0.50	0.27	0.01	0.16	0.29	0.09	0.23
Fat2	0.06	0.51	**0.86**	0.44	0.12	-0.00	0.08	0.08	0.02	0.12
Fat3	0.03	0.58	**0.88**	0.55	0.17	-0.06	0.06	0.11	0.07	0.18
Fat4	-0.001	0.65	**0.84**	0.65	0.27	0.10	0.16	0.27	0.25	0.35
Fat5	-0.03	0.52	**0.76**	0.51	0.09	-0.00	0.049	0.084	0.07	0.14
IO1	-0.08	0.60	0.50	**0.84**	0.36	0.11	0.25	0.47	0.41	0.43
IO2	-0.07	0.62	0.61	**0.87**	0.26	-0.12	0.03	0.26	0.23	0.27
IO3	-0.07	0.45	0.51	**0.79**	0.19	-0.04	0.05	0.30	0.19	0.21
Self1	0.32	0.00	0.00	0.00	0.10	**0.86**	0.38	0.20	0.19	0.31
Self2	0.31	0.07	0.08	0.00	0.09	**0.87**	0.38	0.12	0.18	0.30
Self3	0.24	0.00	-0.07	-0.04	0.17	**0.73**	0.24	0.17	0.29	0.16
Sea1	0.01	0.41	0.24	0.43	0.43	0.22	0.41	**0.87**	0.66	0.67
Sea2	0.16	0.21	0.09	0.27	0.42	0.03	0.26	**0.74**	0.41	0.44
Sea3	0.16	0.28	0.18	0.32	0.34	0.20	0.43	**0.85**	0.57	0.67
Edit1	0.05	0.17	0.01	0.28	0.37	0.23	0.27	0.60	**0.88**	0.58
Edit2	0.06	0.31	0.22	0.34	0.43	0.23	0.32	0.60	**0.89**	0.66
Vis1	0.21	0.33	0.28	0.33	0.41	0.24	0.44	0.63	0.55	**0.86**
Vis2	0.20	0.23	0.20	0.27	0.32	0.19	0.38	0.56	0.41	**0.81**
Vis3	0.22	0.24	0.15	0.22	0.31	0.28	0.29	0.56	0.65	**0.76**
Vis4	0.21	0.27	0.20	0.34	0.45	0.20	0.31	0.58	0.65	**0.83**

Vis5	0.06	0.31	0.22	0.38	0.46	0.38	0.47	0.65	0.61	**0.83**

1: Awareness
2: Communications Overload
3: Fatigue
4: Information Overload
5: Multitasking Computer Self-Efficacy
6: Self-Presentation
7: Pervasiveness
8: Searchability
9: Editability
10: Visibility