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Does the proactive personality mitigate the adverse effect of technostress on productivity in the mobile environment?

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ABSTRACT

Reliance on mobile phones as the major communication medium in our lives has become pervasive in recent years. This study extends existing technostress theory by looking at the effect of two stress sources (techno-overload and communication overload) and the accessibility on productivity of mobile phone users. Two dimensions of the proactive personality were part of the extension to examine how such a personality mitigates the effect on stress. The results show that techno-overload was more of an "enhancer" to one's productivity, rather than what was found in some other studies. Communication overload lowered one's level of productivity, but its effect was lessened by the presence of one form of the proactive personality – the ability to confront situations. Managerial implications relating to these findings are provided.

1. Introduction

The market of handheld devices has grown at an exponential rate with 172 million devices being sold in 2009 and a yearly market growth of about 20% (Magni et al., 2010). Modern mobile phones, a form of handheld devices, can be used both as a mobile telephone and as a handheld computer that can potentially integrate more than 100 specific features (Haverila, 2012). End users are free to install mobile applications that allow them to complete work that was once only possible using a full size computer. The mobility provided by handheld devices far surpasses that of the laptop and desktop computers, making such devices a close part of our lives. As a result, ubiquitous computing through mobile devices is gradually becoming a reality (Ferreira et al., 2011).

In 2013, worldwide adoption of mobile handsets and basic mobile services has reached over 6.8 billion subscribers. The mobile-cellular penetration rate stands at 96% globally; 128% in developed countries; and 89% in developing countries. Statistical data shows that the number of mobile phone users all over the world increased by almost 5 billion between 2005 and 2013; there are almost as many mobile-cellular subscriptions as people in the world (International Telecommunication Union (ITU), 2013).

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Although, as global mobile-cellular penetration approaches 100% and market saturation is reached, growth rates have fallen to their lowest levels worldwide. However, mobile broadband adoption continues at a high growth rate (International Telecommunication Union (ITU), 2013). Survey data also indicates that mobile phone users who use mobile broadband to access the Internet in America accounted for about 50.4% of the market in March 2012 with a rising tendency (Nielsen, 2012). Mobile-broadband subscriptions have climbed from 268 million in 2007 to 2.1 billion in 2013. This reflects an average annual growth rate of 40% (International Telecommunication Union (ITU), 2013).

While mobile phones facilitate inter-human communication and accelerate the dissemination of information (Sutter and Holtgraves, 2013), they are also a source of stress due to their omnipresence and intrusiveness in our lives. This phenomenon is known as "technostress" (Ragu-Nathan et al., 2008; Tarafdar et al., 2007; Wheeler and Riding, 1994). Studies have also suggested that the multiple connection capabilities of mobile devices are the key to their omnipresent nature (Mallat et al., 2004; Nah et al., 2005; Tsalgatidou and Pitoura, 2001). As a result, users immerse themselves in a ubiquitous mobile technology that ultimately blurs the distinction between work and private life (Cousins and Varshney, 2009). Such technological use can lead to intrusiveness of work into one's private life where users find themselves engaging in work activities after office hours.

Past studies on technostress show that the stress derived from ubiquitous computing devices is mainly caused by unfamiliarity with the technology and a feeling of uncertainty and insecurity regarding the use of it. Following increased information technological competence and the rising use of it in the workplace, the key factors leading to technostress are no longer the unfamiliarity but rather the extended exposure to it. The literature does not yet offer insights into this form of technostress.

Additionally the concept of omnipresence as the main cause of technostress is different from the traditional understanding of it. Generally speaking, a pressure-laden work environment creates a negative perception of the organization on the part of the staff and also negatively affects their work performance. Past studies point out that people with a proactive personality may experience less difficulty adjusting to a high-pressured work environment (Crant, 2000; Fugate et al., 2004; Savickas and Porfeli, 2012). They tend to identify opportunities and act on them; they also show initiative, take action, and persevere outwardly (Bateman and Crant, 1993). It is therefore worth researching the effect of the proactive personality on the technostress created by the omnipresence of mobile devices.

However, the literature is still quite limited in correlating the proactive personality with technostress. Fuller and Marler (2009) completed a comprehensive review of research conducted between 1993 and 2009 concerning the relationship between proactive personality traits and other variables, such as the proactive personality and career success (e.g., Byrne et al., 2008; Erdogan and Bauer, 2005; Fuller et al., 2007; Ng et al., 2005; Seibert et al., 2001), job performance (e.g., Chan, 2006; Ones et al., 2007), proactive behavior (e.g., Crant, 1995; Crant, 2000; Parker et al., 2006; Seibert et al., 2001), motivation (e.g., Major et al., 2006; Ng et al., 2005; Wayne et al., 1999) and mobility/adaptability. (e.g., Fugate et al., 2004; Karaevli and Tim Hall, 2006; Ng et al., 2005). This overview shows clearly that no study has researched the correlation between proactive personality traits and the technostress stemming from mobile technologies. It is still unclear whether employees with proactive personalities can adjust more easily to a work environment that is characterized by pervasive technostress than those with differing personality types.

Based on the overview of the current research trends provided in the preceding paragraphs, we designed this study with two objectives. First, the technostress derived from continued mobile technology use is studied for its effect on productivity. This allows us to study technostress at all user experience levels, which extends the existing research that has focused primarily on technological unfamiliarity as the main source of technostress. Second, the role of the proactive personality on the above relationship is further studied to uncover insights on the effect of it. The resulting work is expected to extend the existing technostress theory with further generalizability into personality moderated technostress.

2. Literature review

2.1. Characteristics of mobile technologies

Mobile technologies have brought portability, reduction of space and time constraints, and multi-way interaction to a higher level (Sarker and Wells, 2003; Zhou et al., 2012) that enable possibilities to transform traditional business communication (Rahmati and Zhong, 2012). The key benefits of mobile technologies, as identified by Siau et al. (2001), include (1) ubiquity: communication without time and space constraints, (2) personalization: tailor-made information and customized services, (3) flexibility: multiple forms of communication (videoconferencing, email, chat, etc.) in one device, and (4) dissemination: timely multi-way delivery of business messages to intended customers. Similarly Liang and Wei (2004) outlined two other characteristics of mobile technologies, namely mobility and reachability. Reachability is further divided into personalization, convenience, instant connectivity, ubiquity, and localization. Therefore, mobile technologies can facilitate communication that not only helps save a significant amount of time, but also greatly shortens the time required to respond to customer needs, and provide feedback.

2.2. Technostress

The term "technostress" was coined by Brod (1984). He defined technostress as "a modern disease of adaptation caused by an inability to cope with the new information and communication technologies (ICTs) in a healthy manner." Khosrowpour