

Red Alert: The Impacts of Mobile Instant Messaging Use in Managing Work on Communication Overload and Personal Well-Being

Research-in-Progress

Shamshul Bahri

Ali Fauzi

Nur Syazwani Ahmad

Abstract

Mobile instant messaging (MIM) applications have a massive number of users worldwide. Businesses and organizations are attracted to their capabilities, making them the apps of choice for the formation of virtual groups and communities. While this development is plausible, there are possible overlooked disadvantages. Most MIM studies occur in social settings, not in the workplace. Technostress studies are limited to information workload compared to communication overload, which is more relevant to the MIM applications. Very few studies have investigated the impact of communication overload on the well-being of the employees. This research intends to study the impact of MIM usage for managing work. First, we want to determine the level of communication overload faced by employees using MIM for managing work. Second, we aim to identify the factors that are closely related to communication overload. Third, we want to gauge the relationship strength between communication overload and personal well-being.

Keywords: *Mobile instant messaging (MIM), technostress, communication overload, personal well-being*

Introduction

Mobile instant messaging (MIM) shares some similarities with text messaging and instant messaging technologies. MIM is similar to text messaging because both allow users to compose and send a brief, electronic message, image, video and sound content between two or mobile phones (Wu et al., 2017). However, in terms of the network used to relay the messages or images, MIM is more similar to instant messaging (Viber, 2018). While text messaging relies on the phone network, MIM uses the Internet to achieve the same outcome. However, instant messaging users are confined to their desktops and notebooks while MIM users are mobile because they can access the applications from anywhere using their mobile phones. Among the most popular applications for MIM are WhatsApp, WeChat, and Telegram that are downloadable from Apple's and Google's App Stores.

MIM applications have attracted a massive number of users worldwide due to its advantages over the older SMS and previous versions of instant messaging applications which are mostly personal computer (PC) based. According to Statista (2018a), WhatsApp had 1.5 billion users around the world in December 2017. Malaysia demonstrates the second highest use of WhatsApp with a reported population share of 68 percent (Statista, 2018b). There are several reasons for its popularity. First, the applications are free to download and use from Apple's and Google's App Stores. Hence, users are not constrained by mobile phones and their operating systems such as iOS, Android or Windows. Second, the ubiquity of mobile phones makes MIM the preferable application as users are not constrained by space and time to transmit and receive messages (Gao & Bai, 2014). Third, the decrease in the cost of mobile data has led more people to subscribe to data services and eventually use applications that rely on Internet technologies such as MIM for their daily purposes (Sutikno et al., 2016). Fourth, the current technologies allow MIM applications to seamlessly transmit and share images, audios, and videos, hence making them the apps of choice for the formation of virtual groups and communities (WhatsApp, 2018).

The last advantage has attracted the attention of business and organizations. They have been increasingly using MIM applications for internal communication and documents' sharing. These organizations use these applications to disseminate information to their employees. They also employ MIM to give instructions to their employees. Some of them even conduct meetings over MIM applications and came up with a decision that is enforceable over the technology.

While this development is plausible, there are possible disadvantages that business and organizations may have overlooked. In South Korea, there are concerns that the use of technology has infringed on employees' time outside office hours (Guardian, 2016). In Malaysia, many employers are using MIM willy-nilly to communicate with their employees outside office hours that led to one trade union proposing the government to develop legislation to ban such practice (World of Buzz, 2018).

In academia, there is a scarcity of studies focusing on the impact of MIM usage for managing work on organizations. Most MIM studies occur in the social setting, not in the workplace. Technostress studies that can enhance the understanding of the phenomenon is limited to information workload compared to communication overload which is more relevant to the MIM applications. Also, very few studies have investigated the impact of communication overload on the wellbeing of the employees.

This study intends to overcome the scarcity of studies on the impact of MIM usage for managing work. First, we want to determine the level of communication overload faced by employees whose organizations use MIM for managing work. Second, we aim to identify the factors that are closely related to communication overload. Third, we want to gauge the relationship strength between communication overload and personal wellbeing.

Literature Review

Mobile Instant Messaging

Most of the studies on MIM can be divided into four streams: adoption and continued usage of the application, building customers' relationship with businesses, security and privacy concerns, and work management.

The first stream focuses on the adoption of MIM and its continued usage by users (Sun et al., 2017; Kim et al., 2017; Gan, 2016). For example, Yoon, Jeong, and Rolland, (2015) reveal that technical characteristics (convenience), individual characteristics (computer playfulness), and social influence (perceived critical mass) factors play an essential role in MIM adoption. Tseng, Pham, Cheng and Teng (2018) in their study demonstrate that user loyalty to MIM depends on the ability of MIM providers to satisfy three needs (competency, autonomy, and relatedness) of the user.

The second stream looks at how the application allows businesses to build relationships with customers (Padmavathy et al., 2018; Vazquez et al., 2017; Marino and Lo Presti, 2018). Padmavathy et al. (2018) found that users choose MIM due to its ability to send and receive messages, create groups and post information, and enable video and voice calls for interactions. These functions increase the reputation of MIM apps in social interactions and at the same time satisfy users who love to bridge relationships, create bonding, and maintain relationships in virtual communities. Research by Vazquez et (2017) demonstrates that perception of a channel or app as media-rich can lead to feelings of involvement.

The third stream of the studies focuses on how the use of MIM affects the security and privacy of users (Wang et al., 2018; Siddiqui et al., 2017). Research by Wang et al., (2018) proposed Elliptic Curve Cryptosystem secure instant messaging to meet the requirements of protecting the received data. Siddiqui et al., (2017) found that some instant messaging applications are extremely secure such as WhatsApp and Viber. However, apps like ooVoo, Telegram, QQ, Facebook Messenger and Mo+ as are not as secure and do not provide full privacy.

The fourth stream that focuses on the use of MIM for managing work has been few and has a positive outlook at the technology artifact. For example, Mahatanankoon (2016) asserts that MIM has a vital role to play in enhancing work groups' memory and eventually, groups' effectiveness. Cui (2016), meanwhile identified four modes of workplace interaction through MIM: general information exchange, experience articulation, technical support, and sympathetic companionship. While these studies are timely, none had a look at the dark side of its usage. Technologies employed inappropriately can lead to stress among users.

Technostress and Communication Overload

Tarafdar et al. (2007) defined technostress as 'a problem of adaptation that an individual experience when he or she is unable to cope with, or get used to, ICTs.' Mayank and Amarjit (2015) define technostress as a 'negative psychological and physical link between people and the introduction of new technologies.' For example, the high usage of technology such as mobile apps in today's organization for managing work has contributed to the technostress problem among users. Research by Tarafdar et al. (2007) found that technostress has lowered productivity and job satisfaction, and decreased commitment of users. One of the important concepts highlighted in the technostress study is overload. Work overload has been identified as one of the stressors in technostress. Work overload caused by work exceeds an individual's capability or skill level (Moore 2000).

One of the most important concepts related to technostress is technology overload (Karr-Wisniewski and Lu, 2010). It consists of three dimensions: information, communication and system features. Currently, most overload studies are on information overload. Information overload happens when people are exposed to more information than they can handle, i.e., more than what they can process at

a certain point of time (Lee et al., 2016). One study suggests that information overload can influence students' participation and levels of cognitive processing in online discussions (Chen et al., 2012). One other study suggests that mobile technologies have helped eased information overload by "spreading the load" over more people (Allen and Shoard, 2005).

A lesser number of studies have been dedicated to communication overload. Communication overload occurs when communication messages received by users exceed their capacity to either manage or correctly interpret the meaning of the messages, or both (Marques and Batista, 2017). One study suggests that communication overload can create problems to librarians when it detracts them from assisting their users competently (Burns and Bossaller, 2012). Another study suggests that communication overload can affect job satisfaction, depending on organizational identification (Cho et al., 2011). Despite these studies, communication overload has been under-conceptualized. One of the possible causes is the tendency to combine communication with information overload (Lee et al., 2016).

One of the most prominent studies to conceptualize the communication overload concept is Stephens et al.'s (2017). Using the Q-method to capture the subjective perspectives of people who experienced communication overload, they have conceptualized it into seven formative dimensions. They are:

- Compromising message quality
- Having many distractions
- Using many ICTs
- Feeling responsible to respond
- Pressuring for decisions
- Overwhelmed with information
- Piling up of messages

Personal Well-Being

Personal wellbeing can be defined as people's satisfaction with their abilities and lifestyle (Gough & Allister McGregor, 2007). It consists of two domains: specific life and personal characteristics. A survey study conducted on 212 Chinese international college students in Germany found that the intensity of MIM use (WeChat) is positively linked with wellbeing and life satisfaction (Pang, 2018). Specific life domains can be classified as working life, private life and surrounding environment while personal characteristics are classified as capabilities, psychological functioning, culture and beliefs (Castellacci and Tveito, 2018).

Personal well-being can be **further classified** into two levels: subjective and objective well-being. well-being can be defined as individuals' feelings about themselves and evaluations of their lives. It is related to users' experiences or feelings of happiness and their sense of satisfaction with life (Dantu, 2016). Users may have emotions of anxiety, worry, stress, or happiness depending on their situation and condition. Bordi et al. (2018) conducted studies about information ergonomics of organizational factors related to technology use, such as technology itself, infrastructure, social aspects, and individual habits. The study emphasizes that well-being at work is about users' experiences regarding working with technologies. Meanwhile, objective well-being is as the extent to which individuals realize their inner potential, for instance, capabilities. Capabilities can be defined as the set of opportunities that individuals have to carry out a series of functioning and everyday activities (Castellacci & Tveito, 2018).

Theoretical Framework: The Affordances Theory

Affordance is the relational perception and use of objects in particular ways by an actor or a set of actors (Gibson, 1986). A single object could serve different purposes to different people; these different uses are the affordances of the objects. Taking notes and printing signatures are different uses afforded by using a pen. Affordances exist separately from but are activated by perception

(Schmidt, 2007). Individuals interpret affordances by perceiving different uses, but they do not create affordances by perceiving it. Gibson (1986) considers seeing in one's environment to be automatically linked with the perception of utility. Gaver (1991) however suggests there exists "hidden affordances" that are not perceived by the use of objects. Norman (1999) similarly distinguished between "affordances" and "perceived affordances." Later studies are driven to describing how particular technologies shape social action began to describe "social affordances" (Bradner, 2001; Wellman et al., 2003). Social affordances were also described as "how the intrinsic properties of communication technologies may factor in their adoption and use" Jeff Boase (2008). Continued usage of technologies would draw particular affordances. Gaver (1996) suggest that individuals explore and predict outcomes of technology use. Most of these studies situated affordances within human communication research and investigated both perception and outcomes of affordances.

Affordances are thought to exist in the interaction between an individual's subjective perception of utility and objective qualities of technology. Thus, Relational perspective on affordances was also emphasized (Fulk & Yuan, 2013; Leonardi, 2013; Majchrzak et al., 2013; Treem & Leonardi, 2012). Majchrzak et al. (2013) define affordances as a potentiality activated by certain groups rather than innate capabilities of technology. Affordances are useful to describe how technology alters communicative practices (Vitak and Ellison 2012).

Mobile media technologies such as MIM have provided to users of four affordances: portability, availability, locatability, and multimediality (Schrock, 2015). Portability refers to the size and weight of the mobile devices that allow users to carry them wherever they are going. It can also refer to the ability of the technology to allows users to perform many things at one time such as reading their emails and posting Instagram pictures. Availability, meanwhile, can be interpreted as a combination of multiplexity, direct contact, and increased frequency. Multiplexity is the availability of various communication techniques on the device such as texting, voice calls, and social media. Direct contact is the ability of one person to contact another person exactly where he/she is while increased frequency is the increasing amount of communication occurring, usually through frequent short bursts (Schrock, 2015).

On the other hand, locatability refers to the devices ability to enable users to be located wherever they are. This ability enables users to hold impromptu meetings that could scale up to groups or communities. Finally, multimediality is the multiple media features that exist in today's mobile devices such as taking pictures, capturing videos, and recording audios (Schrock, 2015).

Research Method

The Research Hypotheses and Model

The portability of MIM applications has made them the medium of choice for work communication within an organization. Additionally, the technology allows administrators to form discussion groups among fellow workers. It is not unusual for one employee to be involved in many groups in the same organization. As a result, users will be receiving a massive number of messages that eventually lead them to feel overwhelmed. Hence, this hypothesis is offered:

H1: There is a positive relationship between being in multiple MIM groups at work with communication overload.

The decreasing cost of mobile data and the pervasiveness of Wi-Fi technology have increased the availability of Internet connection among users in many parts of the world. This development has made it extremely easy for users to receive and send messages from and to other fellow workers. It reaches an extent where users are expected to respond to messages received almost instantaneously. This pressure to respond immediately can be overwhelming, especially when the number of messages is enormous and most of them are deemed essential. Hence, this hypothesis is offered:

H2: There is a positive relationship between the need to respond immediately to MIM messages concerning work and communication overload.

Because of the ease in sending and receiving messages through MIM, many users put little thought about the need to send a message in the first place. Furthermore, the technology was initially developed for social and pleasure purposes, making it difficult for people to adjust its use in an organizational setting. It is usual for workers to receive sometimes up to hundreds of messages a day. Eventually, the unread messages will pile up. Although the workers do not need to respond to all of them, the ability of the technology to highlight unread messages and to notify new ones can help unease users. Furthermore, the pile-up of messages makes it more difficult for users to identify the more important ones. Hence, this hypothesis is offered:

H3: There is a positive relationship between the pile-up of MIM messages and communication overload.

MIM is increasingly employed by organizations to discuss and eventually come to a decision on work issues. While this usage is laudable when the workers are out of the office for field work or conferences; it can intrude into the workers' personal lives outside office hours. The locatability affordance of MIM enables workers to be located with pinpoint accuracy after working hours. As a result, the workers are forced to discuss work issues and come up with decisions instantaneously even when they are supposed to be relaxing with their families or friends. The pressure to come up with a decision outside office hours can put a strain on the workers and their close ones. Hence this hypothesis is offered:

H4: There is a positive relationship between the pressure to make decisions and communication overload.

The multimediality affordance of MIM allows users to share many types of digital files. It is common to see users share images, audios, and video files among each other. Eventually, the users are inundated with all sorts of files that require their attention and interpretation. It is a formidable task as different file's format requires a different interpretation technique. Hence, this hypothesis is put forward:

H5: There is a positive relationship between being overwhelmed with information and communication overload.

Communication overload can negatively affect personal well-being. Users who experienced communication overload may feel less satisfied with their lives because they are overwhelmed with so many work-related messages. Furthermore, many of these messages arrived outside office hours when the users expected to spend that time with their families and friends. Depriving them of this leisure may lead to frustration, anger, and sadness. Hence, this hypothesis is offered:

H6: There is a negative relationship between communication overload and personal well-being.

The research framework is shown in Figure 1.

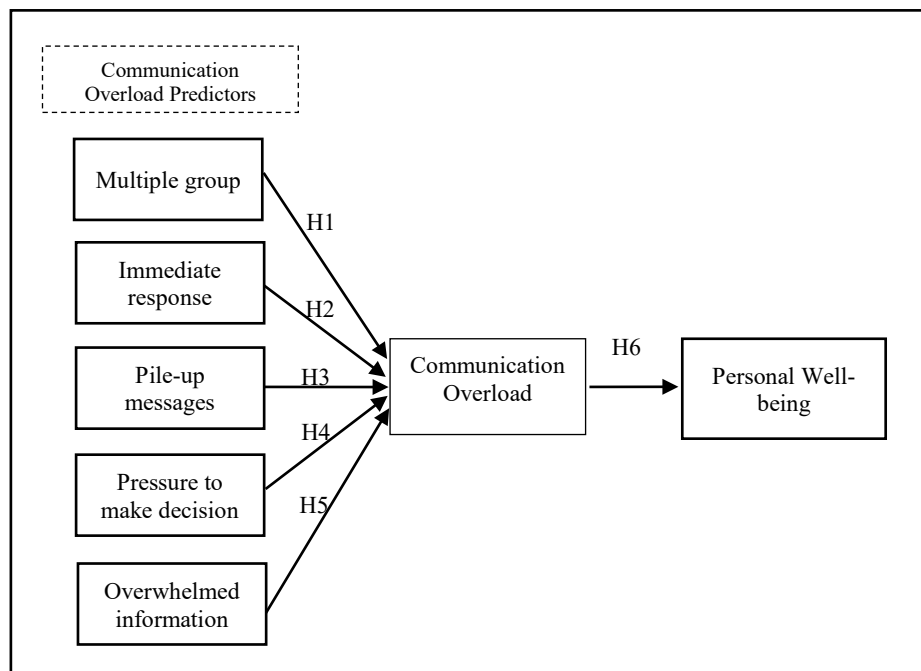


Figure 1. Research

Table 1. Operational Definition

Variable	Operational Definition	Sources
Multiple groups	Having more than one group discussion or conversation in MIM	Ballard and Seibold (2006); Cho et al. (2011); Karr-Wisniewski and Lu (2010);
Immediacy of responses	Ability to respond to MIM messages quickly	Ballard and Seibold (2006); Karr-Wisniewski and Lu (2010);
Pile-up of messages	The extent where there are too many messages to handle in MIM discussions.	Ballard and Seibold (2006); Stephens et al. 's (2017)
Pressure to make decisions	The extent to which the users are pressured to make decisions in MIM	Ballard and Seibold (2006); Stephens et al. 's (2017)
Overwhelmed information	Uncomfortable with the information shared in MIM group discussions.	Ballard and Seibold (2006); Cho et al. (2011); Stephens et al. 's (2017)
Communication overload	Communication messages received by users exceed their capacity to either manage or correctly interpret the meaning of the messages.	(Marques and Batista, 2017)
Personal well-being	People's satisfaction with their abilities and lifestyle	(Gough & Allister McGregor, 2007)

Data Collection

This study will adopt a questionnaire survey approach. There are several advantages of questionnaires approach highlight by (Bill, 2007). First, it saves time and money. The researcher can send out thousands of questionnaires using email or internet platform. Second, its more flexible and quickly, respondents are free to answer the questionnaire any time and require less time compared to other methods such as interviews. Third, the analysis of answers is relatively straightforward. The researcher can prepare the analysis sheet in advance before conducting the survey. Finally, respondent anonymity. The value of ‘anonymity’ encourages more respondents to participate in the survey.

For this study, survey questions will be designed to identify the relationship between communication overload and personal well-being. The questionnaire consists of three sections which are demographics, communication overload, and personal well-being. It will be design based on past studies shows in Table 1.

Data for this study will be collected from employees who use MIM actively for managing work. This includes using MIM for discussion, giving instruction, and monitoring work progress. The questionnaire will be distributed through electronic mail, social media, instant messaging applications, and face-to-face method.

Data will be analyzed using Structural Equation Modeling (SEM). It is a multivariate statistical analysis technique to analyze structural relationships. SEM technique is the combination of factor analysis and multiple regression analysis, and it is used to analyze the structural relationship between measured variables and latent constructs.

Conclusion

This study possesses some theoretical and practical contributions. Its most important theoretical contribution is the development of a model of communication overload from the use of MIM for managing work. The model will identify the strength of the relationship between the predictors of communication overload and the communication overload faced by the users. The study’s minor theoretical contribution would be determining the strength of the relationship between communication overload and personal well-being. Practically, this study will determine the level of communication overload faced by employees in the workplace. The level of overload and the strength of its predictors will hopefully raise the awareness of the employers on the possible backlash of using MIM for managing work. We are also hopeful that findings from this study will lead to possible guidelines that employers can use to ensure proper use of the technology.

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