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A Conceptualization of Social Media Fatigue and Its Dimensions*

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Abstract

Purpose - This study aims to conceptualize the construct of social media (SM) fatigue.
Design/methodology/approach - A qualitative approach is employed to understand how SM users currently perceive (or interpret) the goals of SM usage and to conceptualize SM fatigue and its dimensions. We collected data through in-depth interviews of three SM users and group discussions among eighty SM users.
Findings - we draw a definition of SM fatigue from a resource view that excessive SM use might lead to SM fatigue by depleting the internal resources of SM users. Further, through the analysis of the qualitative data from interviews and group discussions, we find the multi-dimensional nature of SM fatigue and identify five dimensions of SM fatigue—fatigue from the social obligation to interact with people, the importance of self-appearance, the quality of information, the quantity of information, and undesirable events—and common sources of fatigue in each dimension.
Research implications or Originality - The conceptualization of SM fatigue elaborated in this study could enable scientific exploration of the role of SM fatigue in users' attitudes or behavior formation and change. On a practical front, this study would be valuable to companies by facilitating systematic investigations of their customers' fatigue through the lens of the SM fatigue dimensions.

Keywords: Construct Conceptualization, Social Media, Social Media Fatigue, Social Media Fatigue Dimensions

***JEL Classifications*:** M15, M30, O33

Ⅰ. Introduction

"Friends" are everywhere. Since the market launch of Facebook, social media (hereafter, SM) gained widespread popularity. About half the world's population uses some type of SM

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as of 2018 (Agarwal, 2018). As of March 2022, Facebook has over 2.9 billion monthly active users, and Twitter has 229 million active users.[1)]

In this paper, we define SM as Internet-based platforms that facilitate direct or indirect social interactions among users through active involvement (or participation). Social networking services (hereafter, SNSs; e.g., Facebook and Google+), blogs, microblogs (e.g., Twitter), and instant messaging services (e.g., KakaoTalk and WeChat) are popular examples of SM.

SM have become to play a central role not only in managing social life relations among users, but also in managing firm-customer relations by firms. Firms are increasing their Facebook activities and practices to interact with customers, resulting in more than 160 million businesses using Facebook for that purpose (Bagadiya, 2022). Sometimes, firms use SM for their reverse marketing tool, which generates online awareness and demand before seeking offline distribution. For example, when Heinz launched its new product, consumers could buy the ketchup only through the brand's Facebook page until the product began to appear in supermarkets (Newman, 2011).

Given that more and more firms are using SM to provide information on their products or services and to communicate with their customers, it is highly likely that the role of SM will be increasingly critical for business success. However, with the proliferation of SM, many users started to complain of fatigue in their daily usage of SM from the early stages of SM (Brogan, 2011). The phenomenon, so-called SM fatigue, remains unchanged, possibly leading to reducing SM usage time, not joining a new social network, or discontinuing their current SM use (Agarwal, 2018).

The negative potential of SM fatigue provides a new challenge for SM service providers and firms that try to capitalize on the services. To understand the phenomenon and address the challenge, research efforts have been made to investigate the antecedents and consequences of SM fatigue. Based on the limited capacity model, Bright et al. (2015) propose that information overload plays a critical role in SM fatigue and find that SM users' confidence in their ability to use SM effectively decreases SM fatigue. Zhang et al. (2016) adopt the stressor-strain-outcome framework to examine the antecedents and outcomes of social network fatigue. Their empirical results show that three stressors (antecedents), system feature overload, information overload, and social overload, positively influence social network fatigue, increasing discontinuous usage intention. With a similar theoretical lens of stressors-strain, Lee et al. (2016) consider overload (stressors) as a determinant of SNS fatigue (strain) and SNS characteristics as the antecedents of overload. Their analysis finds that information equivocality, an information characteristic of SNS, increased information overload while two system characteristics, system pace of change and system complexity, affect system feature overload positively. Further, the overload is shown to increase SNS fatigue. Dhir et al. (2019) also suggest a stressor-strain-outcome framework for SM fatigue, showing that privacy concerns, self-disclosure and parental mediation positively correlate with SM fatigue, which decreases the academic performance of students.

While these studies have contributed to our understanding of SM fatigue, there remain several limitations, mainly due to a current lack of a rigorous conceptual foundation of SM fatigue. First, most of the previous studies build on the stressor-strain-outcome framework, which implicitly implies that SM fatigue is a kind of stress. However, fatigue is a distinguished construct from stress (or techno-stress), so is SM fatigue. Second, SM fatigue is frequently measured with scales adapted from work-related fatigue measures (Lee et al., 2016; Zhang et al., 2016).

1) Available from https://wikipedia.org (accessed August 8, 2022)

Although this can be a satisficing approach to measuring the emerging construct, scales derived from theoretical conceptualization of the construct and thereby reflect its specificity would be more desirable. Finally, the overload perspective employed in the previous studies seems to be a narrow perspective to SM fatigue because, as we will show, SM users may experience fatigue even in the absence of some types of overload. Failures in adequately defining a construct lead to a number of problems that compromise "not only construct validity, but also internal validity and statistical conclusion validity" (MacKenzie et. 2011, p. 328).

This study aims to conceptualize the construct of SM fatigue. Specifically, based on related scholarly articles and in-depth interviews, and group discussions among SM users regarding their SM use and fatigue experience, we draw a definition of SM fatigue from a resource view that excessive SM use might lead to SM fatigue by depleting the internal resources of SM users.. Further, through the analysis of the qualitative data, we find the multi-dimensional nature of SM fatigue and identify five dimensions of SM fatigue—fatigue from the *social obligation to interact with people, the importance of self-appearance, the quality of information, the quantity of information, and undesirable events*—and common sources of fatigue in each dimension.

This paper could provide several important implications not only for researchers but also for practitioners. The conceptualization of SM fatigue elaborated in this study could contribute to our understanding of SM use by enabling further exploration of the role of fatigue and its interplay with other critical constructs in SM study. Given that rigorous conceptualization of a construct is a cornerstone for scale development (MacKenzie et., 2011), the five SM fatigue dimensions and corresponding common sources could be used to develop instruments to measure SM fatigue. On a practical front, this study would be valuable to SM service providers and firms that try to capitalize on SM since it could facilitate a systematic and deep investigation of their customers' fatigue through the lens of the SM fatigue dimensions.

The paper is organized as follows. In Section 2, we describe the research methodology adopted in this study. Then, we explore the motivations of SM usage based on the users' narratives in Section 3. In Section 4, we present the conceptualization of SM fatigue and derive its dimensions. Finally, we discuss the implications and limitations of the study in Section 5.

II. Research Method

In this study, we employed a qualitative and inductive approach to understanding how SM users currently perceive (or interpret) the goals of SM usage and to conceptualize SM fatigue and its dimensions. In addition to examining related literature, we collected data through in-depth interviews and group discussions.

First, we interviewed three SM users each of whom uses at least two SM services on a daily basis. Each interviewee was given two main questions, Q1: "Why do you use SM? What are the main purposes? What do you think are important in using SM?" and Q2: "Have you ever felt any pressure, obligations, or fatigue when using SM?" In answering the questions, the participants were asked to elaborate on specific situations of their SM use and provide detailed examples of user behaviors and/or fatigue experiences in the situations. The interview took around two hours per each. Through the interviews, we found three common purposes (or motivations) of SM use, consistent with the existing literature on SM use. Further, the interviews provided an initial set of three SM fatigue dimensions, each closed related to each of the SM use purposes.

Second, we organized group discussions among 80 university students in 10 groups. The discussion groups were asked to follow the same protocols as in the in-depth interviews regarding the questions and detailedness. One person in each group was entitled to lead the discussion, and another person was asked to write a discussion log. The discussion logs provided a rich set of examples for SM users' motivation and fatigue. Overall, the group discussions validated the results derived from the in-depth interviews.

Third, we elicited the users' narratives that explicitly stated SM use and fatigue instances from the interviews and group discussions logs. A total of 351 instances for SM user motivation and a total of 315 instances for SM fatigue were identified. We conducted a thorough review of the instances, revising and expanding the initial set of SM fatigue dimensions, thereby leading to five fatigue dimensions. In conceptualizing SM fatigue in section 4, we heavily rely on the users' narratives on SM fatigue. The followings are sample instances for SM user motivation and SM fatigue, respectively:

"I am sharing the information with my classmates (through Facebook) that they might want to know. For example, I frequently share information about unexpected drinking parties, part-time jobs, or buy-and-sell events."

"Whenever I access Facebook, I feel the pressure that I should read all the contents my friends have posted. I also should write something on my friends' Facebook that I haven't visited for a long time. These are a burden to me in using Facebook. Sometimes I feel like I want to quit Facebook. However, because most of my friends are using it to communicate with each other, I can't stop using Facebook."

Ⅲ. Social Media User Motivations

Before conceptualizing SM fatigue in the following section, we explore the motivations of SM usage based on the users' narratives. The user motivations are closely related to our focal construct, SM fatigue, and the relationship between SM user motivation and SM fatigue will be discussed later.

We define the motivation for SM use (SM user motivation) as the inner or outer drivers for a set of user behaviors conducted on SM. Based on the authors' in-depth interviews with SM users, group discussions among SM users, and a review of related literature, we propose three main dimensions of SM user motivation: ***building and developing social relationships***, ***presenting oneself***, and ***information search***.

First, we found the three dimensions of SM user motivation through the in-depth interviews. Second, we reviewed prior literature on SM use (e.g., Lampe et al., 2008; Lampe et al., 2012; Morris et al., 2010; Nadkarni and Hofmann, 2012), which confirmed the three motivations. Third, the analysis of the group discussion logs confirmed the presence of the three dimensions.

1. Building and Developing Social Relationships

We define the first user motivation dimension, building and developing social relationships, as the user motivation for initiating and enriching relationships on SM. Undoubtedly, building and developing social relationships is the primary reason that people use social networking

services. The blog also has been evolving to provide a platform for networking (Gaudeul and Peroni, 2010). For example, one of the primary reasons for writing in blogs is to gain readers or to maintain a circle of friends (Gaudeul and Peroni, 2010).

Generally, two distinct types of social relationships are pursued in social media, mirroring the offline world: interactions with close 'friends,' who can provide emotional support, sympathy, appreciation, and connections with acquaintances, who can provide non-redundant information (Granovetter, 1973) and new perspectives. From the social capital perspective, the former corresponds to bonding social capital, while the latter to bridging social capital (Putnam, 2001). Ellison et al. (2007) showed that SM use facilitates building the two types of social capital.

From the discussion logs, we identified a total of 148 instances related to this motivation and classified them into five types of behaviors. SM users make (or join) a community to enrich or not lose existing relationships; share (or tag) information (or event) to benefit friends; comment (or click the 'Like' button) to maintain or strengthen the relationships; contact (or send a message) to initiate or strengthen the relationships, and research friends for better offline relationships.

2. Presenting Oneself

We define presenting oneself as the user motivation for showing off oneself or expressing personal opinions on SM. Self-presentation is "the process by which individuals attempt to control the impressions others form of them" (Leary and Kowalski, 1990, p.34). Given the importance of others' perceptions in social interaction, people watch carefully how others regard them and, often, try to control the impressions people have of them (Leary, 1996).[2] Primary goals of self-presentation include increasing social (e.g., interpersonal) and material outcomes, enhancing self-esteem, and facilitating the development of desired identities (Leary and Kowalski, 1990). People become motivated to manage their impressions when the impressions they make are relevant to the goals which are essential to them, or when there is a discrepancy between one's desired and current social image (Leary and Kowalski, 1990).

From the discussion logs, we found a total of 101 instances related to this motivation, which were classified into four types of behaviors on SM. SM users put make-up on postings to construct a socially positive image (e.g., touching up pictures before uploading them); show off themselves to self-satisfy (e.g., write up a story that she recently received a present from her boyfriend); hide their weaknesses or faults to avoid a socially negative image (e.g., being nice and friendly to others on SM, even though he is not socially friendly); and express (or argue) their own opinions or preferences (e.g., "I am against the policy by the government.").

3. Information Search

We define information search as the user motivation for getting (or updating) information on (through) SM. People increasingly turn to social media for news, information, and knowledge. The blog has been established as a potential substitute for traditional media such as television and newspapers (Wattal et al., 2010). People rely on their online social networks

2) While self-presentation may appear deceptive, paying an appropriate degree of attention to others' impressions is sound and adaptive (Leary, 1996) and essential for the formation of close relationships (Derlega et al., 1993).

for information rather than formal channels like search engines when the information need is better satisfied "by information from people who know and are known by the information seeker" (Lampe et al., 2012, p. 3195). They capitalize not only on strong-tie relationships (Aral and Walker, 2011) but also on weak ties (Vitak and Ellison, 2013) in their social networks to get information. A survey of 624 Microsoft employees shows that half (50.6%) of respondents have used social networking sites like Facebook and Twitter to get helpful information (Morris et al., 2010). Further, technical platforms such as blog sand social search engines support the efficient search for information. Overall, we can find abundant evidence that social media function as an essential venue for seeking information.

From the discussion logs (a total of 102 instances related to this motivation), we found four types of behaviors on SM driven by this motivation. SM users seek new information by following up (subscribing to) recent trends (or news); checking schedules or plans to assure or update the information of interest; using SM for working- or learning-related information; and searching for products, places, or events on SM.

IV. Conceptualization of Social Media Fatigue

In this section, we conceptualize SM fatigue. First, we define the construct and then derive its dimensions based on the in-depth interviews and group discussion logs.

1. Defining Social Media Fatigue and Deriving Its Dimensions

Fatigue has drawn a lot of research effort from medical science, psychology, and organization studies.[3] As such, it has been applied not only to medical contexts but to the general population or work settings. The concept of fatigue involves the mental aspect as well as the physical aspect (Fisk et al., 1994). Common consequences of fatigue include reduced motivation and activity (Smets et al., 1995); thus, impairing both capability and willingness to perform a task (Craig et al., 2006). While fatigue has been measured in various ways, such as by antecedents affecting internal resources (e.g., situation specificity), by attitude on the fatigue status (e.g. mental fatigue, physical fatigue, overall fatigue), or by outcome variables when we feel fatigue (e.g. lack of motivation, reduced activity), the basic viewpoint on fatigue is a resource view, where we feel fatigue when our mental or physical resources are depleted (Gross et al., 2011; Sonnentag and Zijlstra, 2006).

Drawing on the definition of fatigue by Craig et al. (2006), we define SM fatigue as a persistent or easily-relapsing mental state of tiredness and reduced alertness of an SM user that has been generated in the course of SM use. Our definition focuses on the mental aspect of fatigue because SM use involves mainly mental activities. Further, the definition implies that SM fatigue is different from a short-term attitude such as losing interest in SM right after long use of SM; rather it is characterized by a long-term attitude incurred in using SM.

The resource view on fatigue naturally guides us that excessive SM use might lead to SM fatigue by depleting the internal resources of SM users. The logs of in-depth interviews and group discussions gave us confidence in that reasoning. Through several rounds of review

3) Defining SM fatigue construct in this section is based on and expands Section II-1 of the authors' previous work (Kim and Lee, 2018).

of the logs, we identified five dimensions of SM fatigue; fatigue from the *social obligation to interact with people*, fatigue from the *importance of self-appearance*, fatigue from the *information quality*, fatigue from the *information quantity*, and fatigue from *undesirable events*. We describe how we came up with those five dimensions.

First, bearing in mind the main dimensions of SM user motivation, we reviewed the logs and identified three dimensions of SM fatigue logically related to the motivation; using SM to build and develop social relationships may cause fatigue from the social obligation to interact with people; using SM to present oneself may cause fatigue from the importance of self-appearance; and using SM to information search may cause fatigue from information overload.

Then, we elicited the users' narratives that explicitly stated any pressure, obligations, or fatigue when using SM. A total of 315 instances of SM fatigue were identified. Through a careful review of the instances, the authors found out that SM users feel fatigue related to not only the quantity aspect of the information they obtain on SM but also the quality aspect of the information. For example, many discussants complained about highly repetitive, poorly organized, or irrelevant information on SM. Accordingly, we split the fatigue related to information search motivation (i.e., fatigue from information overload) into fatigue from the quantity of information and fatigue from the quality of information. Further, the authors identified from the instances another source of SM fatigue-fatigue from undesirable events such as unwanted notifications or contact requests.

As the final step, the authors independently classified the instances into the five SM fatigue dimensions. The inter-rater reliability for the classification was quite high (Cohen's Kappa=0.88). We re-examined together the instances that we classified differently and reached a consensus about the classification of the instances. Table 1 summarizes the classification results. Common instances are presented below each fatigue dimension in the table. The common instances can be viewed as common sources of fatigue in each dimension. The frequencies of the instances are shown in the right column of the table. Note that a single instance can contain several fatigue dimensions. We multiple-counted such instances.

Table 1. Dimensions of SM Fatigue and Their Common Sources

Classifications	Frequency of Instances
Dimension 1: Fatigue from Social Obligation to Interact with People	102
checking for updates about friends	17
writing comments on friends' SM postings	20
finding content for my SM site that can interest my friends	4
replying or reacting to friends' postings on SM	29
reading friends' postings on SM	8
keeping updating my SM site for the benefit of my friends	6
complying with SM etiquette	18
Dimension 2: Fatigue from Importance of Self-appearance	55
updating my profile or status	8
posting touched-up photos (or edited videos) on your SM page	19
writing about your experience on SM	12
finding contents to upload to your SM page	3
replying to others on SM	13
being part of different groups of friends on SM	18
Dimension 3: Fatigue from Quantity of Information	30
texts posted by friends on SM	4
fads, buzzwords etc. SM contain	7
videos or pictures posted by friends	19

Dimension 4: Fatigue from Quality of Information	48
fragmented or poorly organized information	3
irrelevant information on SM	14
(relevant and well-organized, but) not very helpful information on SM	5
unreliable information on SM	2
redundant information on SM	24
Dimension 5: Fatigue from Undesirable Events	106
unwanted notifications or emails	34
contact requests from individuals I am not interested in	24
postings by individuals I am not interested in	21
postings containing distasteful content	26
being hacked	1

2. Dimension 1: Fatigue from Social Obligations to Interact with People

The first dimension of SM fatigue, fatigue from the social obligations to interact with people, is related to the SM users' goal of building and developing social relationships on SM. It refers to the SM fatigue, which results from complying with the obligations incurred by others' expectations regarding interactions with them on SM. Table 1 shows seven common fatigue sources in this dimension (listed below Dimension 1 in the table).

Interactions are a vital component of social relationships. Just as in an offline interpersonal setting, building and developing social relationships on SM require mutual understanding and continual interactions such as showing interest in others, exchanging thoughts and emotions, and responding to the other party's events or achievements.

SM offers various technical features that afford users effective capabilities for interactions.[4] First, SM enables users to build new relationships, for instance, by adding friends on Facebook, following others on Twitter, or linking to other blogs. Several technical features help users with the tasks. For example, users can examine lists of friends or lists of commenters on their friends' SM pages for potential new connections. Further, SM usually offers search capabilities for profiles indexed by embedded search engines (e.g., 'Find Friends' on Facebook and Twitter). Links to the potential new connections are readily available. Technology itself even recommends additional associations (e.g., 'People You May Know' on Facebook and 'Who to follow' on Twitter).

Second, SM users can initiate interactions with current friends or connections through technical features on SM. They can find content for their SM pages and keep updating them to benefit friends. Currently, SM supports various formats of content, including text, picture, audio, and video. Users may also share (or tag) content they have found for friends. Their friends are informed of the new posting or tagging by the technology.

Finally, SM users can interact by responding to their connections' activities on SM. They can check for updates on their friends' pages, which may be notified of by SM, and read new postings on the pages. Further, they can provide friends with emotional support, sympathy, or appreciation using the technical features of SM. For example, they can write com-

4) In organizational settings, several affordances offered by SM have been suggested in Treem and Leonardi (2012) (e.g., visibility, persistence, editability, and associations) and in Majchrzak et al. (2013) (e.g., metavoicing, triggered attending, network-informed associating, and generative role-taking). Most of them can be applied to our research context.

ments on the posting or simply click 'Like' on Facebook or retweet on Tweeter. The responses need not be spontaneous because communication is persistent on SM in that it remains accessible after the users have finished their presentation of the responses (Treem and Leonardi, 2012).[5)]

While SM offers these effective capabilities for social interactions and the interactions are necessary for positive outcomes in social relationship (and thereby social capital) building, we argue that due to the very effectiveness, there may exist strong social obligations to interact with people on SM. As online relationships are building, so are the social obligations to interact with people on SM, to the extent that SM is easy to interact with. The following group discussion log illustrates this point:

"My name is exposed on SNSs quite often. SNSs provide a great easier means to communicate than the phone or messengers. As such, ironically, I feel a sense of duty to contact friends more frequently on SNSs than by phone or messenger."

Therefore, it seems that the easiness of interactions technical features of SM offers and the social obligations to interact are two sides of the same coin. Obligation and expectations are a major form of social capital. "If A does something for B and trusts B to reciprocate in the future, this establishes an expectation in A and an obligation on the part of B" (Coleman, 1988, p. S102). The obligations are frequently so strong that they can lead to fatigue in SM use. From the interview and discussion logs, we found seven types of sources of fatigue in this dimension that work in the course of interactions. Consider the following group discussion log.

L1: "Recently, I was very busy helping my mother with housework. So, I couldn't write on Twitter for a while. My friends kept sending me photos and video clips of star entertainers and asking how I was doing. I felt fatigued from the sense of duty that I should reply to them and get active online. I am frequently annoyed that it is not enough just to reply to friends' greetings. I should also post information or photos, and comment on their information or photos or favor and retweet them. Eventually, I am falling short of information and photos and continuously feel obligation to post something, which makes me fatigued. I feel severer fatigue with Kakaotalk. Friends keep sending messages, disturbing my concentration on classes or homework. I feel pressure to reply to them just not to make friends offended. Recently, I narrowly escaped from a Kakaotalk group. I was fed up with it when I found two hundred new messages had arrived while I was sleeping. I usually got dozens of messages for a few hours. It really exhausted me to check them. Finally, I made up my mind. I quit the group after I threatened my friends that they should treat me to a musical performance and a meal if they invite me to the group again. But, one of them seems to be trying to make me join them again. I have a splitting headache when I think that I may need to plan another escape."

The above log illustrates how SM users may feel fatigued from various sources, including *finding content for their SM pages that can interest their friends*, *keeping updating their SM pages for the benefit of my friends*, *checking for updates about friends*, *reading friends' postings*

5) Treem and Leonardi (2012) suggest that SM afford persistence because communication "remains accessible in the same form as the original display after the actor has finished his or her presentation" (p. 155).

on SM, *writing comments on friends' SM postings,* and *reacting to friends' postings on SM.*

Despite SM features enabling easy and flexible content publishing, it may not be easy for users to keep finding and updating content that could contribute to relationship building because it involves creative work and thereby requires mental resources (L2). When they do not want to do so at heart, they may regard the task as work rather than fun (L3).

L2: "… We share links, photos, or other stuff. We also do that by simply clicking the Like, which tells friends what I have liked. However, I should think over and over before I share or like something, because most of my close friends take time to see the contents."

L3: "Sometimes, I write posts for the good of my friends even though I don't want to post the contents. For example, if a friend treats me to a meal, I should write about it in return. It's to boost the friend's image and to show off our friendship as well."

Further, with subscriptions to multiple SM services, it requires additional effort to keep updating one's SM sites as the following log suggests:

L4: ".. What is worse is that while most of my friends are using Facebook, some are using Kakao-Story. When I post some writings or photos on Facebook, I have to post something on Kakao-Story too. Even posting the same thing on both is annoying."

The above logs (especially L1) show that it can be a daunting task for users to interact by responding to their connections' activities on SM, especially when the number of interactions required is substantial. However, the quantity is not the only problem; they may feel fatigued because they are interacting against their will as the following logs suggest:

L5: "I don't want to know every small thing about my friends, even my best friends. Some of my friends really post all details on Facebook. I don't feel like reading all of them, especially highly private stuff. It's bothering me a lot to read and write comments on those postings."

L6: "I feel indebted when my friends comment on or like my postings. I feel obliged to treat them the same way. Commenting on or liking posting that I don't like makes me tired."

The last source of the SM fatigue dimension involves compliance with SM etiquette. As online ecology, SM have developed various norms affecting users' behaviors. For example, instant gratification (L7) and reciprocity (L8) are popular norms on SM.

L7: "… If a friend likes something on my page, I feel pressure to make a response by liking something on his page as soon as possible."

L8: "I upload a posting. Then friends write comments on it. Then I comment on their comments, and so on. How complex! But I should respond to their comments. If I don't, they would feel disappointed."

To sum up, a close examination of the logs suggests that technical features of SM which enable effective interactions (e.g., easy content publishing and replying, notification of new

postings, etc.) may cause fatigue by generating substantial obligations of interactions on SM. Sometimes, the required interactions are too much of a problem for SM users. They may also need to interact against their will for the sake of relationship building. Given the social obligations that are supposed to be fulfilled to achieve the users' goal of building and developing social relationships and the prevalent norms of SM etiquette that enhance demand for interactions, it may not be easy, although not impossible, to compromise with SM use even when they become to feel fatigued.

3. Dimension 2: Fatigue from Importance of Self-Appearance

The second dimension of SM fatigue, fatigue from the importance of self-appearance, is concerned with the user's goal of presenting oneself (personal expression) on SM. It refers to SM fatigue which results from presenting oneself excessively. Contrasted with the fatigue from social obligations to interact with people, which comes from the expectation of others, this dimension comes from the intrinsic needs and entailed efforts to present oneself in a specific (usually positive) way. Table 1 shows six common fatigue sources in this dimension (listed below Dimension 2 in the table).

SM provides users with effective platforms for presenting selves to others. Various self-presentation tactics (Leary, 1996) are supported by SM artifacts such as user profiles (self-description tactic), pictures (physical appearance tactic), opinion or emotion postings (attitude statements tactic and emotional expressions tactic), and friend lists (social associations tactic). In addition to the anytime and anywhere access capabilities of the Internet, cyberspace allows users' greater control over both expressions given and given offs (Papacharissi, 2002). Reduced communication cues and potentially asynchronous communication in cyber space may enable users to engage in 'selective self-presentation' when they are motivated to do so (Walther, 1996). The following log shows a typical example of purposeful and selective self-presentation.

L9: "The Naver blog is the best SM to present myself. I post photos to cherish the memories of travels or fine dining. However, the biggest reason is to present myself. Rather than paint myself in my proper colors, I usually post only good things about me, for example, "I have been to foreign countries for trip"; "I eat expensive food like this"; "My boyfriend bought this present"; "I am happy." So, I take photos and upload posts on my blog when I go to fancy restaurants or have expensive food. But, I don't write when I eat daily food."

As a goal-directed behavior, self-presentation on SM often entails substantial mental efforts and resulting fatigue. Further, people's self-presentational concerns can interfere with their performance on other important tasks and cause them to feel anxious (Leary, 1996). The following logs illustrate how self-presentation concerning *updating the profile or status* may create fatigue and harm SM users' daily lives.[6)]

L10: "I am tired from devising a new description of me in my Facebook status. I usually have to spend a lot of time coming up with a great one and agonizing over what friends would think about it."

6) Previous research shows that self-presentation is involved even in the act of choosing an online name (Rafaeli et al., 2005).

L11: "What photo and what words should I use to update my profile on Facebook or KakaoTalk? I get frequently lost in thinking about how to appear unique in the cyberworld, losing concentration on my work or even forgetting about my work."

Further, SM users encounter difficulties in *finding content to upload to SM pages* for self-presentation. It seems that the difficulties are common regardless of whether the user has a clear desired identity image (L12) or not (L13). Matters are aggravated by the uncertainty of their efforts in successful impression construction (L14 and L15).

L12: "The main topic of my blog is brand-new devices. I post writings that qualify me as an early adopter. Very often, however, I take the trouble with getting information about newly launched devices."

L13: "I often get nervous to think that my postings are trivial or boring compared to friends. When one friend keeps a European travel journal, and another friend writes about his internship experience in a cool company, I am just talking about Starcraft, feeling myself so small. It causes me fatigued to try to come up with a great story."

L14: "When something good or pleasant happens, I am tempted to post about it. At the same time, I am worried that I may look posey. Certainly, I often intend to show off. But, since I don't want to be regarded a boaster, I think over whether to post it or not, which is stressful for me."

L15: "I have to care for friends who are green with envy. When I post something good to me, then it may arouse their jealousy. It really makes me crazy and wears me out. So I feel reluctant."

Besides finding material, creating postings also requires self-presentational efforts. Common tasks include elaborate writing of texts and touching up photos. The following logs show that these tasks can incur excessive efforts and work as a source of fatigue in self-presentation.

L16: "I take much time in proofreading when posting writing and in photoshopping when uploading a photo. I pay the greatest attention to ensure that there is nothing that may invite criticism or hurt others' feelings."

L17: "I take around thirty shots with subtle differences to get the most beautiful photo of me. The next step is to make my eyes bigger and smooth out the bumpy chin using a photo editing app. Whenever taking a picture to post, I feel fatigued a lot."

Like any goal-directed behaviors, self-presentation is accompanied by assessments of its effectiveness in achieving one's goals (Leary and Kowalski, 1990; Schlenker, 1985). Because how others *respond to one's self-presentational effort* is readily visible on SM,[7] users can assess the effectiveness quite easily and instantly. This may incur self-presentational concerns and fatigue in the user, and the fatigue increases with the gap between the intended and realized

7) Treem and Leonardi (2012) refer to this as the affordance of visibility.

impressions, as the following logs suggest.

L18: "I like to be sympathized with on Facebook. Today I posted a sad happening to me in a way that I could get the most pity out of my friends.[8] *I feel myself emotionally fragile when the reactions by Facebook friends just go below my expectation. For example, one of the comments on my posting was "are you begging for sympathy?" I feel tired from the situations like this."*

L19: "I feel tired from waiting for a reaction to my posting. I felt emotionally exhausted when friends regarded my posting as pretentious twaddle"

The final source of SM fatigue in this dimension involves *being part of different groups of friends on SM*, where multiple audience problems are commonly entailed. The problems usually occur when a person interacts with two or more target groups of people who value different impressions (Leary, 1996). When friends value different impressions of us, "we sometimes find it awkward to interact with two friends at the same time" (Leary, 1996, p. 109). Consider the following logs:

L20: "I feel somewhat tired from keeping neutral on religious or political issues on SNSs. Among more than 400 friends, some are strong supporters of the ruling party, while others distrust it. So, I try not to go beyond neutral postings such as vote encouragement. Some friends are devout Christians, but others are atheists. A careless posting may cause an endless dispute on my Timeline. I often feel like reproaching a pseudo-religion that bothers me or a repulsive politician, but I should put up with the urge. Even when a friend cast reproach on them, I never write a comment on the post or show my sympathy toward the friend."

L21: "For some of my writings on Facebook, I wish only my close friends read them. However, it's my concern that all my acquaintances in the friend list can read them. When I write a comment on a friend' page, friends of the friend can read it. So, I frequently think over how to write something that I want to deliver to my friends and I'm often reluctant to upload it."

As the logs show, SM users interact with many others on whom they may want to make different impressions. However, because of the SM's affordance of visibility, the user's self-presentation is usually made public to some of them, making audience segregation inapplicable. Further, the affordance of persistence precludes inter-temporal audience segregation. This distinct nature of SM exacerbates the multiple audience problem compared to self-presentation offline.

In summary, the discussion logs suggest six types of fatigue sources from the importance of self-appearance shown in Table 1. SM users' effort to present themselves may cause fatigue, coupled with several affordances of SM. They may experience fatigue in finding and crafting content consistent with their desired impressions and effective in building the impressions.

8) This corresponds to the supplication tactic in self-presentation, in which a person projects her or himself as weak and displays dependence to seek help from others or to make excuses for poor performance (Jones and Pittman, 1982).

Relatedly, because the effectiveness can be easily assessed on SM, users may be confronted with increased fatigue as a function of the discrepancy between the intended and realized impressions. Finally, multiple audience problems may be brought up when users try to be part of different groups on SM.

4. Dimensions 3 and 4: Fatigue from Quantity of Information and Fatigue from Quality of Information

In this subsection, we consider two dimensions of SM fatigue which are related to the SM users' goal of information search through SM- fatigue from the quantity of information and fatigue from the quality of information. They refer to SM fatigue which results from respectively overwhelming amount and poor quality of information on SM, which users are exposed to in their effort to get or update information and knowledge through SM. Table 1 shows three and five common fatigue sources in these dimensions, respectively (listed below Dimension 3 and Dimension 4 in the table).

It has been well established that social networks facilitate the diffusion of information (e.g., Granovetter, 1973). This capability is greatly enhanced in online SM by affording associations between individuals and between individuals and contents (Treem and Leonardi, 2012). The following log illustrates a typical use of SM as information source and suggests how fatigue can be incurred during the course.

L22: "I search Facebook and visit blogs quite often to get new information about fashion, my main interest. To name a few, I visit 'Sister's Sense,' which is my favorite fashion blog, at least once a day, no matter how late at night, to check new photos. I also access another fashion blog, 'Mantory' at least every two days. So, kind of my daily routine. But it takes much time and I often feel tired."

The log proposes that time and effort to search information is related to fatigue, again supporting the resource perspective to SM fatigue. Our review of the discussion logs reveals specifically the quantity and quality of information in SM is the main source of fatigue incurred in information search. This is consistent with the information overload literature. For example, in computer-mediated communications, information overload is related to conversational overload when too many messages are delivered beyond individuals' response capabilities-and information entropy-when incoming messages are poorly organized to be easily recognized and processed (Jones et al., 2004). The discussion logs suggest, in the context of SM, that technical features of SM facilitate effective information search on one hand, and contribute to related fatigue on the other hand.

We first examine fatigue from the quantity of information. SM users can satisfy their information needs by visiting or searching SM pages. Feeds and tags also support users' active search of information they are interested in. People can also ask friends for the information they seek, which can be supported by the SM's affordance of visibility that enables users to learn 'who knows what' and 'who knows whom' (Leonradi, 2015). Finally, users can be engaged in passive information search by being exposed to the information their friends networks share. Therefore, the technical features of SM afford users' information search both in active and passive ways and on a large scale. Given the potential of information search on a larger scale, other things being equal, users are likely to experience a higher degree of information overload

because it is an increasing function of the amount of information to be gathered and processed.

The following log suggests that various technical features of SM, such as feeding and sharing, can be involved in users' exposure to an excessive amount of *postings by their friends* to the extent that they experience fatigue.

L23: "Each day, many postings are put up on Facebook by my friends. Some are personal details about my friends but others are news articles or information. I need to follow up the articles and information because they are usually relevant and useful to me. Further, I feel I fall behind my friends if I don't understand the up-to-date issues or interests among friends. But the amount of postings is above my time and capability. I am worried about not keeping up with the trends and my peers. … I have 'liked' several companies on Facebook to subscribe to their recruiting or product information. My friends have also shared with me the information they liked. Too many postings from the companies to read. They are quite a burden to me."

Further, the above log hints that the user obsesses about information seeking on SM. We find many cases from the logs suggesting that SM fatigue in information seeking is accompanied by an obsession with catching up on new information and keeping knowledge updated. The following logs illustrate the obsession concerning *fads and buzzwords on SM.*

L24: "I am tired of catching up with buzzwords on Facebook. There are tons of buzzwords flying over the network, and it becomes impossible to follow them up. The fact that I am lagging also makes me tired."

L25: "I am not sensitive about trends. But my girlfriend says that I really don't care about booming up things and trends. So forcibly, I should watch and check recent movie clips, dramas, and events. Then I can talk with a girlfriend and anybody. Sometimes, I wanna be an analoger, no smartphone, no internet, …."

If SM were just an information media that is irrelevant to social interactions, the obsession would be less likely to be developed. Because SM users communicate, build a relationship, and self-present as well as search for information using the same media, obsession is easily created. For example, in L24, the user's concern that she is lagging behind can be attributed to her friends' communicating and self-presenting with buzzwords on SM. If the information of interest is from a purely informational channel such as newspapers, the concern would less likely result.

The following logs show how SM features that facilitate sharing of *videos or pictures by friends* can lead to fatigue when the users are exposed to the information excessively and unwillingly.

L26: "I am never a follower of trends. I feel tired when my friends keep sharing the hottest videos or pictures. Some people have set their privacy setting to share stuffs with friends of friends. Should I see the contents exposed on my page just because friends of my friends have liked or shared them? They make me really irritated."

L27: "I get mentally exhausted and feel like breaking with SNS friends when my page is

plastered with postings by them. I was sick and tired of shockingly excessive sharing of pop idols' pictures and videos by one of my friends. After all, I unfriended him. But, usually I suffer patiently (to continue the online relationships with the friends)."

To sum up, the technical features of SM afford large-scale search and learning of massive amount of information generated on SM. Given the possibility, while users satisfy their information needs actively, they are exposed to information continuously shared and delivered within their social networks driven by the technical features of SM. They often encounter information overload by the overwhelming quantity of information to process. Further, they often develop an obsession with catching up on new information or updating their current knowledge. They experience fatigue due to the combined effect of the amount of information, technical features, and obsession. As illustrated in the above logs, we identify three types of fatigue sources from the quantity of information -texts posted by friends, fads and buzzwords that SM contains, and videos or pictures posted by friends.

Next, we consider fatigue from the quality of information. Some information on SM is created by professional creators such as journalists or specialized organizations. However, most information on SM is user-generated content. Although those contents build on SM features that enable easy and flexible content creation and publishing, they are often poorly organized to successfully satisfy users' information needs Further, blogs and SNSs are lacking in central mechanisms that verify the quality and correctness of the contents, unlike, for instance, in Wikipedia. This implies that users themselves need to determine whether the information is trustworthy. The following log suggests that users feel fatigued when it takes them much time and effort to get the information required because the information is *fragmented* on SM (L28) or *unreliable* (L29, L30).

L28: "I am tired from gathering and processing information scattered throughout several blogs."

L29: "It is quite a headache to digest the vast amount of new information on SM in the right way. People share information that they think is valuable. However, it may be just wrong information far from the truth. I should tell right from wrong. It's quite confusing, … a hard task."

L30: "I find many company postings on promotional events. They are often tempting. But, I should think over and over because I suspect that they are really beneficial to the participating consumers. They may be just a means for promotion."

Even without the organization and reliability issues, users may incur fatigue when continuously exposed to the same information repetitively or to irrelevant information. The following logs illustrate the fatigue from *redundant* information on SM.

L31: "My friends share too many video clips, and my page becomes plastered with feeds by the sharing, which is an eyesore. I am tired from checking the new feeds, which are sometimes actually the same."

L32: "Hot contents on SM are parodied over and over again. Lately, my timeline is coated

with parody videos of the popular 'One plus One' video. I don't want to see them anymore."

The logs suggest that the redundancy of information may result from the spread of information over social networks and the expansive reproduction of the information by SM users. This is enabled by SM features that afford easy creation and sharing of information. The following logs show cases where feeds on SM deliver a stream of *irrelevant* information users are not interested in.

L33: "One month ago, I encountered a music video by one of my favorite artists on the artist's official Facebook page. I clicked the 'Like' and bought the album. After that, I was exposed to related Ads pages, his public appearance schedule, and autograph events from the page. I just liked the music video, but I didn't want the information about the autograph events. This case is not uncommon. If I click the 'Like' on a specific activity or product of a firm, I often suffer from all the stuff delivered subsequently, which makes me fatigued. I just come to learn stuff I don't need and want. Then, good feelings toward the page disappear and it appears spam to me."

L34: "I feel fatigued from information delivery I'm not interested in. Feeds are delivered unexpectedly through SNSs. I don't need all the information my friends are carrying with. I get a hell of a lot of information I don't want. It is forced upon me unwillingly."

Both redundancy and irrelevance of information can be related to limited filtering features of the current SM. Feeds are an efficient means for information acquisition. They enable individual users to specify information sources they appreciate. Thus, feeds are a sort of filtering mechanism. However, the above logs suggest that feeds may contribute to fatigue by delivering redundant or irrelevant information. Just specifying information sources may not be sufficient because all information by the sources may not be new and pertinent. Further, users may be exposed to a lot of unfiltered information that friends have just liked or chosen to share with them.

The last source of fatigue from the quality of information involves the helpfulness of information. The following logs show cases where even relevant and well-organized information may be *not helpful* to the recipients because it may cause concerns or stress as side effects.

L35: "I am worried that I develop a negative perspective on the society by various writings and pictures that are saying the world is in such chaos. As a result, it takes me more time to trust others. Further, I find myself casting a suspicious glance at those who do me favors rather than thank for the kindness. I should not have surfed the postings."

L36: "I am a Facebook fan of Vogue, Men's Health, and Esquire. By subscribing to the magazines, I am delivered to a continuous stream of information on attractive clothes and new products. Lots of items in my wish list, but no enough money! I just get stressed."

The preceding review of the logs shows how fatigue from the quality of information is incurred when users search information on SM, suggesting five sources of the fatigue dimension. SM features promote users' creation and sharing of information. However, the nature of

user-generation frequently results in information which is fragmented (or poorly organized) and unreliable. Further, sharing and subscription capabilities of SM, combined with limited filtering features, may facilitate users' continuous exposure to redundant or irrelevant information on SM. Finally, even when the information is free from those quality problems, users may encounter fatigue from the unhelpfulness of the information because it may cause negative mental side effects.

5. Dimensions 5: Fatigue from Undesirable Events

The four dimensions of SM fatigue we have covered above are directly linked with users' motivation for SM use. Each fatigue dimension largely consists of major difficulties and obstacles users may be faced with in their efforts to pursue the corresponding goal of SM use. Therefore, they need to overcome the difficulties and obstacles, possibly experiencing fatigue, to achieve the goals. For example, to build and develop social relationships, users should reply to or like others' posts, sometimes against their will. For effective self-presentation, they need to have a hard time finding proper contents consistent with their target images.

On the other hand, the last dimension of SM fatigue, fatigue from undesirable events, is largely irrelevant to the goals of SM use. Therefore, it is purely a side effect of SM use. Table 1 shows five common fatigue sources in this dimension. Consider the following log by a Twitter user.

L37: "It's a hassle to block those who want to follow me on Twitter but I don't want them to. Most of them are in adult goods businesses. Their profile photos are usually quite suggestive. I block them because I don't want such followers and I am anxious that they make other followers get me wrong. I guess that they find me on Twitter because I follow many celebrities across the world. They send spams a lot. They even tried to hack my account. It was quite unpleasant. I was once really hacked and spywares were sent to my followers via my account. I couldn't help apologizing to them one by one."

It illustrates how she experienced intrusion by the unknown on Twitter including *unwanted follower requests*, *distasteful contents* such as suggestive photos and spams, and *being hacked*. SM features serve to form relationship with others, sometimes with unwanted people, which might not have been possible offline, by making one's identity visible and suggesting new connections (e.g., 'People You May Know' on Facebook). Although most unwanted contact request cases in the logs concern requests from unknowns or just acquaintances, in some cases, interestingly, requests from close people can be a source of fatigue as the following log shows:

L38: "I feel burdened when I get a friend request from persons who I don't want to meet online. In fact, my aunt friend-requested on Facebook. I cannot be rude enough to reject it. But, I don't want her to read my postings. It would be really uncomfortable. So I'm still in a double bind."

Further, not only can denying be cumbersome, but the decision making may be tiring as L38 implies and L39 articulates.

L39: "I feel uncomfortable at denying friend requests from strangers. I don't recklessly deny

them. I think over whether I knew them before but just don't remember them now. Then I search for information about them. I deny the requests only if I get sure that they are complete strangers. It is easy to reject. But it is tiring to make the decision."

If connections happen to be established with the unwanted, users often get tired of unceasing *communications from the individuals they are not interested in,* as in the following logs:

L40: "I want to hear from friends and it is easy on SM. But, the problem is that SM also deliver news on people who I don't want to keep up with."

L41: "I feel tired using Facebook when I feel invaded. Some Facebook friends always question me closely about what has happened, whenever I express my feelings even though they are not close."

L42: "I am embarrassed and uncomfortable to see somebody who is not a close friend but pretends to be, writing lots of comments and clicking the Like on my postings."

Further, users may suffer from distasteful content and postings they encounter on SM.

L43: "I feel tired of the ads that I receive through Facebook. Recently I saw an ad from a Tabaco company which was really gross-out."

L44: "I have a nauseating SNS friend. Actually, he is a bare acquaintance. His writings are always showing off or pretentious. He posts such rubbish every day."

Besides those intrusions by others on SM, SM features facilitating interactions can be intrusive by generating *unwanted notifications or emails*.

L45: "Lots of messages from Facebook in succession! Notifications of friends' birthday, notifications of new comment postings, emails of friend requests, ···. I feel overwhelmed by the excessive number of emails. It's even difficult just to delete them. About seven out of ten emails are those messages."

In summary, from the discussion logs, we find five types of sources of fatigue from undesirable events. SM users feel fatigued from unwanted notifications or emails, contact requests from individuals they are not interested in, postings by individuals they are not interested in, postings containing distasteful content, and being hacked on SM. The sources are sometimes related to the technical features of SM.

Ⅴ. Conclusions

With the advent of a variety of SM platforms and users' widespread adoption, SM fatigue has emerged as a prominent phenomenon, which has a negative potential for SM service providers and firms that leverage the services to communicate and interact with their customers. To provide a theoretical and practical foundation to address this challenge, this study aimed

to conceptualize the construct of SM fatigue rigorously. Employing a qualitative and inductive approach based on in-depth interviews and group discussions among SM users, we drew a definition of SM fatigue from a resource view and identified five dimensions of SM fatigue—fatigue from the social obligation to interact with people, the importance of self-appearance, the quality of information, the quantity of information, and undesirable events. Further, we derived common sources of fatigue in each dimension by examining the users' narratives from the interviews and group discussions.

The current research offers several academic contributions. First, this study contributes to our understanding of SM fatigue by providing a solid conceptual foundation of SM fatigue. As a stepping stone to the scientific investigation of the latent construct of SM fatigue, the conceptualization presented in this study could enable further exploration of the role of SM fatigue in SM users' attitudes or behavior formation and change.

Second, given that SM fatigue has been frequently measured with scales adapted from work-related fatigue measures (e.g., Lee et al., 2016; Zhang et al., 2016), the results from this study could contribute to the development of measurement scales for SM fatigue that are derived from the theoretical conceptualization of the construct and thereby reflect its specificity. More specifically, the five SM fatigue dimensions and their corresponding common sources derived from the SM user narratives could be capitalized on to develop instruments to measure SM fatigue, which would facilitate empirical investigations of the antecedents and outcomes of SM fatigue.

Third, the findings from our investigation imply that the user's motivation of SM use is associated with the dimension of fatigue from which she may suffer. For example, fatigue from the social obligations to interact with people is likely related to the SM user's goal of building and developing social relationships on SM. On the other hand, those who use SM mainly to meet their informational needs are likely to experience fatigue from the quantity of information and fatigue from the quality of information. Therefore, researchers are advised to take deeper investigations into SM fatigue by incorporating SM users' motivations and relating them to SM fatigue dimensions, rather than restricting the research attention to overall SM fatigue under the implicit assumption of general SM use situations.

On a practical front, this study offers valuable managerial implications. SM service providers and firms that capitalize on SM for their businesses can enhance a systematic understanding of their customers' fatigue. SM service providers are advised to categorize their users' common fatigue experiences into the SM fatigue dimensions and to figure out how each service feature might be associated with each of the dimensions. This understanding can guide effective revisions and the evolution of the features for their SM customers. Next, companies utilizing SM for their businesses should figure out customers' primary purposes of SM use to effectively address customers' SM fatigue . For example, companies may use SM as an information channel through which they deliver information on their businesses, products, services, events, or recruitments, In that case, the visitors may suffer from fatigue caused by the quantity or quality of information the companies provide and possibly fatigue from undesirable events, but they are not likely to experience other dimensions of SM fatigue. Therefore, the companies can focus on addressing these two dimensions rather than trying to reduce the overall SM fatigue. Lastly, firms should be aware that their customers could be overwhelmed by excessive communication efforts (e.g., too many pushed messages or notifications), triggering them away from SM channels.

Finally, we articulate the limitations of the current study with suggestions for future research.

Given that conceptualization is the first step toward scientific examinations of the phenomenon related to the focal construct, a critical next step is the scale development and evaluation process to measure the construct, which was not addressed in this study. Our conceptualization views SM fatigue as an aggregate, second-order construct formed by combining its five dimensions. The dimensions and their corresponding common sources derived from the user narratives could work as a basis to construct a formative measurement model for each of the dimensions of SM fatigue. Further, although the construct of SM fatigue is conceptually distinguished from other related constructs such as techno-stress (Ayyagari et al., 2001), a definitive conclusion requires empirical verification, which is another venue for future research. In doing so, we suggest empirical investigations of nomological models to find the role of SM fatigue in explaining SM usage behavior (or intention) (i.e., SM usage reduction or discontinuance) and its interplay with other critical constructs (e.g., flow, addiction) in the SM study.

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