

Social Networking Fatigue, its Antecedents, and Discontinuance Usage Intention: Empirical Model Validation

Abstract

Purpose: As more people want to register a social media presence, ineluctably, this creates a huge amount of content online. Prior research highlights that excessive information on social media platforms leads to a usage related behavior termed as “social networking fatigue.” The present research draws from three major theories in information systems research- limited capacity model (LCM), technology acceptance model (TAM) and unified theory of acceptance and use of technology (UTAUT), to effectively understand the phenomenon of social networking fatigue.

Design/methodology/approach: Online structured questionnaires were used to gather empirical data from 327 social networking users, out of which 306 samples were included in final analysis. Structural equation modelling (SEM) technique was employed for assessing the hypothesized relationships.

Findings: The empirical findings exhibit that potent antecedents of SNF – privacy concerns, ease-of-use, and usefulness contribute significantly; while, self-efficacy doesn’t exhibit any significant influence. In addition, the linkage between SNF positively and significantly effect discontinuance usage intention.

Theoretical and practical implications: This research contributes to the limited literature on SNF by extending the LCM theory into virtual space context. Also, the research findings may assist the social media managers and online experts to formulate strategies for content modification and user engagement.

Originality/value: This study represents a novel attempt to investigate the structural linkage between SNF, its potent antecedents, and discontinuance usage intention, which as per the authors’ knowledge, has been under-explored by prior researchers in this domain.

Keywords: Social networking, technology acceptance model, limited capacity model, fatigue, discontinuance usage.

Paper type: Research paper

1. Introduction

In the last decade, social networking sites such as Facebook, Twitter, Google+ have encountered phenomenal growth only to experience and face major challenges. For example, after achieving the peak in 2012, there has been a decrease in the number of active Facebook users, which indicates toward the cooling down in passion towards the site (Zhu and Bao, 2018; Cannarella and Spechler, 2014). Global Web Index (GWI) report (2012) once highlighted the phenomenon of “Facebook fatigue” to delineate the decline in the frequency of vital Facebook activities (e.g. sending messages to peers, searching for new friends and connections, sending birthday cards and presents etc.). Various social networking giants such as MySpace and Qzone (from China) have faced the issues of loss of users and minimal usage.

To address this phenomenon, prior researchers have focused their attention on means and ways to encourage continuous usage of social networking sites (Debei et al., 2013; Lin et al., 2014, Chang, 2018). In this regard, social networking providers have made considerable efforts in improving service quality aspects, for instance, by introducing new features, or enhancing the interaction experience among users to curb the decline in active use (Sanz-Blas et al., 2017). However, it is apparent that such strategies are not effective in handling the existing scenario. For example, Facebook has included many new features and functions since 2012, like tagging options, privacy settings, stories, etc. but these additions have not helped the cause of the decrease in active Facebook users. Pew Research Center report (2013) shows that 61% respondents have taken voluntarily break from using Facebook while 20% have temporarily quit the platform due to boredom, unnecessary gossips from peers and friends, irrelevant information, and regular system update features. Also, GWI report indicates that the active usage of Facebook dropped by 8% in the year 2014 (Cannarella and Spechler, 2014). Meanwhile, the large number of users are considering Facebook for browsing purposes rather than posting or sharing, and therefore, moving towards newer mobile messaging platforms and apps such as Whatsapp, Pinterest, and Snapchat.

This trend has resulted in shift of the focus of research towards discontinuance usage intention of social networking sites, which is an outcome of various factors compared with continuous usage (Bright and Logan, 2018; Shokouhyar et al., 2018; Zhang et al., 2016). For instance, Maier et al. (2015a; 2015b) conducted a series of research studies, focusing on discontinuous usage intention as an important coping behaviour of users resulting from social networking overload, stress and exhaustion. These studies point out the potential negative effects of social networking activities and highlight the significant influence of users’

stressful experience leading to discontinuance usage behaviour. Nevertheless, Berger et al. (2014) stated this stream still remains under-explored and several questions require to be answered adequately.

The present research addresses the existing gaps in the prior research through following the limited capacity model (LCM) along with technology acceptance theories i.e. technology adoption model (TAM) and unified theory of acceptance and use of technology (UTAUT) to explore the potent antecedents and consequences of social networking fatigue (SNF). LCM model explains that people have limited mental capacity to process information. In social networking context, users have to deal with enormous amount of posts, messages, tweets, and are flooded with excessive information. Hence, LCM model will aid in explaining social networking fatigue. Also, TAM and UTAUT will help in exploring this phenomenon (Davis, 1989; Venkatesh et al., 2013). Hence, this research attempts to seek answers for the following research questions: (1) how does the potent antecedents affect SNF? (2) how do SNF influence discontinuance usage intention in social networking context? This research makes a novel contribution by enhancing the researchers' understanding of SNF, a construct that has been established conceptually but requires more empirical validation. Further, the research also contributes by examining the potent antecedents of SNF, and indicating the individual significance of the antecedents. In addition, the research extends the SNF construct and shows the users' coping behaviour in terms of discontinuance usage intention.

The research paper adheres to the following structure. In the initial section, the authors discuss the social networking landscape, SNF, and theoretical foundations of SNF. Section 2 provides the conceptual model of examining SNF; while, Section 3 and Section 4 discusses the methodology and data analysis for the research. Further, Section 5 shows the discussion of the results, followed by implications and limitations of the research.

1.2 Social networking fatigue

Social networking fatigue (SNF) refers to the tendency of social networking users to withdraw from SN usage in case of becoming overwhelmed with excessive content, large no. of sites, a huge chunk of data and contacts and too much time required to maintain these connections. Generally, SNF associates with privacy concerns and boredom among SN users. Market research firm Gartner points out that SN is tending towards maturity stage as few users in specific segments are already exhibiting signs of SNF. The firm carried out a survey of 6295 users within the age group of 13-74 years in 11 countries from Dec'2010- Jan'2011. Respondents were enquired regarding their usage and general opinions of SN. The survey findings indicate that 24% respondents accepted they have reduced the usage of their

favourite SN site as compared to the when they initially signed up. Such respondents lie in segments that hold a more open-minded opinion regarding technology (Goasduff and Pettey, 2011). Further, the trend shows SNF among early adopters of technology, and nearly 31% Aspirers [younger, trendy, more mobile-centric, liking for certain brands type of consumers] indicated their shift from SN usage as they were getting bored out of it; therefore, SN providers should keep an eye on this alarming situation and innovate to attract and maintain the users' attention. The respondents provided mixed responses and ranked privacy concerns as the main reason behind SNF. However, teenagers and tech-savvy segments reported that they have increased the usage of favourite SN site.

Research agency Trendstream reports users' active behavior on the Facebook indicates gradual decrease since July'2009, especially in developed countries like the US, thus evidences SNF (Global Web Index, 2011). Trendstream relates "active behavior" to activities such as status updates, chatting, sharing online content, and installing applications. Study findings hint such trend is quite predominant in college-going users in the age group of the twenties; termed as original users of Facebook (Global Web Index, 2011). Indeed, technology experts recognize the fact that SN users have arrived at a situation of shortage of time. This situation means that users' online capabilities are much higher than what users can actually perform as human beings; therefore, infinite options and limited time leads users to shut down or withdraw at a certain point (Boskers, 2011). LCM theory supports the above-mentioned trend, which talks about information consumers require making compromises, regarding their attention, provided its information processing capacity is considerably limited.

SNF can also arise from the brand and company-oriented interaction apart from the interpersonal interaction. Research highlights there appears to be a disparity between the needs and requirements of consumers and delivery mechanism of brands; consumers are looking for discounts and product reviews while brands are using SN to provide updates regarding new offerings and get consumer feedbacks (Shashank, 2011). Despite the introduction of new SN platforms such as Snapchat, Vine etc. in recent times, many people stayed away from creating accounts in these sites unlike their past behaviour and tendency (Barger, 2011). The prime reason behind this behaviour relates to the fact that many people have reached their saturation point of using SN. Individuals are spending a lot of their precious time online; therefore, it becomes a burden on them to maintain a presence on various SN platforms, thereby, leading to SNF.

1.3 Theoretical underpinning to examine SNF

The examination of the SNF concept can be carried out using the widely popular and applicable theories in this context- TAM (Davis, 1989), UTAUT (Venkatesh *et al.*, 2003) and LCM (Lang, 2000). These theoretical models provide relevant cues and constructs for examining SNF from different perspectives including usefulness, self-efficacy, ease-of-use, privacy concerns, information processing, and technological acceptance.

Davis (1989) pointed out two main constructs to understand technology acceptance in a better manner, which are equally relevant to SNF- (a) perceived usefulness (PU), and (b) perceived ease-of-use (PEU). PU refers to the extent to which an individual thinks that using a specific system/technology would enhance his/her performance on the job. Linking perceived usefulness to SNF, the conceptualization in terms of an individual who is maintaining his/her presence in social networking as a “job.” Further, PEU concerns the extent to which an individual thinks using a specific system/technology would be effortless. In the context of SNF, perceived ease-of-use might be high for SN site in case an individual’s family and peers are on the site; while, vice-versa can happen if the user gets fed up because of friend requests, privacy settings etc. In his work on self-efficacy, Bandura (1982) delineates that PEU relates to an individual’s perceptions regarding the extent and manner to which they would be able to perform a certain task or handle a given situation – in this case, managing a social media account on single or multiple platforms. Accordingly, PU and PEU can potentially influence the SNF levels and therefore will be included in the proposed model.

The UTAUT model, as developed by Venkatesh *et al.* (2003), forms a base theory for investigating SNF. Four key constructs are involved in the UTAUT – performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC) that influences technology usage, specifically in the organizational context. UTAUT theory has been extended further to address novel contexts, user groups, and constructs (Venkatesh *et al.*, 2012). EE concerns the extent to which a user perceives the technology is easy to use and FC describes the user’ perception of the resources and necessary support available to carry out a particular behaviour (Venkatesh *et al.*, 2012) are related to social networking self-efficacy.

Nevertheless, we feel that LCM theory assumes that individual’s capacity to process information is limited, which explains the phenomenon of information overload. Primarily, the initial application of LCM was carried out to investigate how individuals process TV messages (Lang, 1995). Since then, prior studies (Macias, 2003; Lee and Faber, 2007) have shown its empirical application in an online advertising context. According to Lang (2000),

LCM assumes that: (a) individuals are information processors and (b) an individual has limited capacity to process information. Grounded on these assumptions, Lang (2000) pinpoints information processing happens in following three stages: (1) encoding of information (2) storage of information, and (3) selection of information. By following these stages, individuals generally receive a stimulus such as online ad, comprehend and store it for future retrieval. Many things depend on the processing capability and retrieval capacity of the message. In this context, the basic factor is the availability of adequate processing resources to comprehend and understand the message. Shortage of processing power may arise because of two possibilities- recipient (user) decides not to assign sufficient resources for processing the task or in case the message may require more than resources that are presently available for allocation to the task. In both cases, the allocation of resources is quite less compared to the required resources to effective message processing. In SN context, the user may feel deluged through the excessive content (messages, chats, videos, Gifs etc.) and thus not allocate adequate cognitive resources for processing of the message. On the other hand, certain messages may need too many resources, specifically, from the user-end to process the message.

2. Conceptual model to explore SNF

The phenomenon of SNF finds its roots in the concept that excessive informational content arising from social networking activities might create feelings of being overburdened among the users (Zhu and Bao, 2018; Bright et al., 2015) . As such, the research uses LCM to determine whether information overload affect SNF. Prior research in psychology has highlighted that individuals have limited information processing capacity and in case the information exceeds this capacity will lead to a reduction in performance (Hunter, 2004). Empirical evidence indicates that huge informational content can lead to information overload. Jacoby et al. (1974) delineate information overload as the state created by information-levels, which exceeds the processing capabilities of the individual at a given period. In the previous studies, it has been shown through two dimensions: increase in errors and negative affect (e.g. frustration or confusion). This research intends to investigate the latter- the negative effect linked with SNF. For instance, layout-related changes in Facebook have led to the transition from intentional to automatic. Users no longer have to choose the information to share, apps like Spotify, an online music application, automatically post information in the feeds of the user. Such kind of transitional activity may induce feelings of SNF among the social networking users. The potent antecedents of SNF are discussed below.

2.1 Social networking self-efficacy

Bandura (1986) refers self-efficacy as the belief in one's own ability to carry out a specific behavioral action – in this context, participation and getting engaged in social network platforms. This construct seems specifically vital for users who are still not compatible and friendly with social network sites. Prior research suggests that as SN users become more self-efficacious, their tendency to expect to obtain specific outcomes will considerably enhance (Bright et al., 2015). Accordingly, users' experience will motivate them to keep using SN sites. Eastin and LaRose (2000) point out this situation arises because of enactive mastery, which means SN users will slowly but steadily master difficult and complex tasks. Subsequently, SN users having a low level of self-efficacy tend to avoid performing such behaviors in the future (Bandura, 1982). This implies they would portray lesser probability to engage in SN related behaviors and activities compared to those with a higher level of self-efficacy. Further, self-efficacy doesn't directly measure skillset and competency, rather, represents users' belief regarding the actions they can perform with those skills and competency. Davis (1989) mentions the construct PEU in the TAM approach, which talks about an individual's perception regarding ease of use of SN sites, he/she will cope with their intentions for technology adoption. Venkatesh *et al.* (2003) highlights self-efficacy has similarities with other constructs of the UTAUT model like facilitating conditions and effort expectancy. Prior user experience with SN sites comes before self-efficacy, which implies high exposure to SN sites will result in users becoming more self-efficacious, thereby, they will continue participating and engaging in SN activities. Hence, we posit the following hypothesis:

H1: Social networking self-efficacy negatively and significantly affects SNF.

2.1.1 Multigroup role of age and gender on the relationship between self-efficacy and SNF

In terms of online self efficacy, prior researchers have found that age plays a significant moderating effect, where, older individuals tend to show low self-efficacy as compared to young adults (Czaja and Schulz., 2006; Tarhini et al., 2014). The logic behind this finding can relate to the point that older people don't have the self-belief and confidence to learn new technology (Turner et al., 2007). Research on self-efficacy also highlighted that age differences impact the perceived difficulty of learning to use new software and e-resources (Morris and Venkatesh, 2000). Further, they also found evidences that gender roles influence computer self-efficacy. In this regard, women tend to show low computer self-efficacy as compared to men. Therefore, this study posits that gender and age moderates the effect of self-efficacy towards SNF.

H1a: The negative effect of self-efficacy on SNF is stronger for males than for females.

H1b: The negative effect of self-efficacy on SNF is stronger for Group A (18-27 years) than for other groups B, C, and D.

2.2 *Social networking usefulness*

Social networking usefulness concerns the degree to which users acquire important information, materials, and useful resources from their exploration of SN sites. Prior research duly highlights the different type of activities and reasons for the participation of users in SN sites (Foster et al. 2010). The majority of such works are related to the theoretical facets of social capital (Wasko and Faraj, 2005; Ellison *et al.*, 2007) or uses and gratifications theory (Smock *et al.*, 2011; Whiting and Williams, 2013). An interesting finding of Foster *et al.* (2010) indicates people use SN for gathering relevant and valuable information (among others). Accordingly, the present research explores the usefulness of information available on SN sites for the users. Thus, we formulate the following hypothesis:

H2: Social networking usefulness negatively and significantly relates to SNF.

2.2.1 *Multigroup influence of gender and age on the linkage between social networking usefulness and SNF*

Prior information system studies indicate men are highly task-oriented, which supports the notion that perceived usefulness (social media usefulness, in this context) that mainly focuses on task accomplishment, are especially salient to men (Minton and Schneider, 1980). In this regard, gender schema theory recommends these differences arise from socialization processes and gender roles reinforced from childhood instead of biological gender (Lynott and McCandless, 2000). Along the same lines, theoretical evidence lends supports to the moderating effect of age. Venkatesh et al. (2003) found that in case of job-related attitudes (in the present context, “job” relates to social networking), younger people give more importance to extrinsic rewards. Technology adoption models have also shown effects of both age and gender differences (Morris and Venkatesh, 2000). With this logic, Ravindran et al. (2014) propose age and gender effects on SNF need to be thoroughly investigated. The basis for this argument relates to the fact that both age and gender have played a vital role in technology acceptance and post-adoption studies. Hence, we posit that gender and age will moderate the impact of social media usefulness on SNF.

H2a: The negative effect of social networking usefulness on SNF will be stronger for males than females.

H2b: The negative effect of social networking usefulness on SNF will be stronger for Group A (18-27 years) than for other groups B, C, and D.

2.3 *Concerns with privacy*

The phenomenal growth of SN has resulted in privacy issues becoming a global topic of discussion. Various SN sites like Facebook, Twitter, Google Plus continuously updates their privacy mechanisms to tackle the privacy threats- identity theft, information breach etc. Recently, Facebook and Google announced major changes to its privacy settings (photo lock features) and new restrictions were included for all the users. Generally, the transparent interaction between the SN sites and its users heightens the online privacy concerns (Zhu and Bao, 2018; Son and Kim, 2008). SN sites entices the users through interesting features (apps, games, quizzes) to enhance their SN usage, however, SN has specific lacuna- security threats, weak access controls, and feeble design (Acquisti and Gross, 2006).. As suggested by Schwartz (1968, p.741), “threshold beyond which social contact becomes irritating for all parties”, therefore, it is expected that users having high privacy concerns will suffer from SNF. This implies that users might feel and experience receiving loads of information from multiple parties. In addition, there lies lack of clarity regarding what SN sites do with the personal information collected from the users. Therefore, we propose the hypothesis that:

H3: Privacy concerns positively and significantly influences SNF.

2.3.1 Multigroup influence of age and gender on the relationship between privacy concerns and SNF

Stejin and Vedder (2015) examined the effects of distinct age groups such as adolescents (12-19 years), young adults (20-30 years), and adults (greater than 31 years) on privacy concerns. In their study, questions were asked about privacy indicators like autonomy, personal space, relationships etc. to reveal the users’ perception regarding privacy. The findings of the study reported significant differences among the groups, where, adolescents associated privacy concerns with relationships; while, adults associated privacy with personal information disclosure. Similar studies (Valkenburg and Peter, 2011; Marwick and Boyd, 2011) have also pointed towards the age-related differences relating to privacy concerns. Further, Mohamed and Ahmad (2012) also investigated the effect of gender on privacy concerns and showed significant differences exist among gender groups. Based on the above arguments, we posit that gender and age play a moderating role in the linkage between privacy concerns and SNF.

H3a: The positive effect of social networking privacy concerns to SNF is stronger for females than for males.

H3b: The positive effect of social networking privacy concerns is stronger for Group B (28-37 years) than for group A, C, and D.

2.4 Social networking ease-of-use

Social networking ease-of-use refers to the extent to which users believe that activities performed on SN sites don't really involve much effort. Grounded on the TAM model, this theoretical construct explains that users feel SN activities are quite simple for usage and operative purposes (Davis, 1989). Previous studies show empirical evidences that ease-of-use significantly predicts behavioural intention towards information system technologies (Plouffe *et al.*, 2001; Venkatesh *et al.*, 2003). Further, users' perception towards SN sites in terms of easy to learn, flexible, and understandable nature might overshadow their opinion regarding SNF. With this logic, in the present research, we put forward the notion that social networking ease-of-use is a significant predictor of SNF. Therefore, we posit the hypothesis that:

H4: Social networking ease-of-use negatively and significantly affects SNF.

2.4.1 Mutligroup effect of age and gender on the linkage between social networking ease-of-use and SNF

Research studies by Venkatesh and Moore (2000) and Bozionelos (1996) duly suggest that ease-of-use is more salient for females as compared to males. Gender differences predicted here could be driven by cognition-related aspects of gender roles (Venkatesh *et al.*, 2003). Further, effects of increased age have been shown to influence the stimuli processing capabilities and allocating information on the work (Plude and Hoyer, 1985), both of which are essential in handling social networking. Based on the above arguments, we posit that age and gender moderates the linkage between social networking ease-of-use and SNF.

H4a: The negative effect of social networking ease-of-use concerns to SNF is stronger for males than for females.

H4b: The negative effect of social networking ease-of-use is stronger for Group A (18-27 years) than for group B, C, and D.

2.5 Linkage between social networking fatigue and discontinuance usage intention

In behavioral research, individuals generally tend to adopt emotional coping strategies to avoid or get relief from stress, unpleasant feelings, and social overload (Sonnetag and Frese, 2003). Supporting psychological studies also affirms that mental fatigue leads to low performance, disinterest and less participation (Smets *et al.*, 1995; Shen *et al.*, 2006) and has a deleterious influence on individual's continuance activities. Despite few empirical pieces of evidence in the SN context, prior researchers have hinted towards a positive linkage between SNF and discontinuance usage intention. In the same vein, Ravindran *et. al* (2014) highlighted that individuals who faced issues of SNF reduced their usage intensity, took small breaks, or wholly discontinued using SN. Empirical studies point out that in situations of

higher exhaustion and frustration; SN users tend to abandon using SN. Additionally, lack of motivation is a prime aspect of SNF; therefore, it is expected that SNF will positively impact discontinuance usage intention. Hence, the following hypothesis is duly proposed:

H5: *SNF positively and significantly affects discontinuance usage intention.*

3. Methodology

3.1 Design

To conduct pre-testing for the study, draft e-questionnaires was developed comprising of 37 items, circulated among a small group of social networking users for achieving clarity. The online survey was managed using Survey Monkey, a free e-survey management tool. Administration of the survey involved recruitment of an opt-in subject pool (i.e. online panel) for online research. The representative sample of Indian social networking users in the age group of 18-51 years was recruited for being a part of the survey. Data collection process involved 238 respondents over a fourteen-day period to ensure even distribution regarding respondents on each day over two weeks (i.e. weekdays and weekends).

3.2 Research sample

The final sample for analysis purpose consists of 306 respondents who have a social networking account (facebook, twitter, both or others) and presently reside in India. Among this sample, 59.15% (N=181) belong to the male category, while, 40.85% (N=40.85) are from the female category. Age-group of the respondents fall into four different groups, namely, 18-27 years (N=128), 28-37 years (N=92), 38-47 years (N=64), and over 47 years (N=22). With regard to social networking usage, 6.86% (N=21) users were engaged in social networking activities for less than 1 year, while, 23.86 % (N=73), 31.04% (N=95), and 38.23% (N=117) users were actively involved in social networking since last 1-3 years, 3-5 years, and more than 5 years respectively. Regarding social networking accounts, 82.35% (N=252) users exclusively had a Facebook account, whereas, 14.70% (N=45) users had only twitter accounts. The evaluation of daily time spent on social networking site shows that 35.62% (N=109) users accessed it for 31-60 mins, while, mere 12.09% (N=37) used social networking for more than 120 minutes.

Insert Table 1 about here

3.3 Measures

The final survey instrument (questionnaire) comprises of measures for social networking related self-efficacy, social networking usefulness, ease-of-use while using social networking, and privacy concerns associated with social networking. Measurement items of

respective constructs were averaged to arrive at a composite scale. The items are provided in the Table 2 in Appendix 1.

Insert Table 2 about here

Respondents' level of social networking self-efficacy, usefulness, ease-of-use, and privacy concerns were measured by adapting and modifying the prior scales to suit the social networking context (Bright et al., 2015; Mouakket, 2015). The survey participants were instructed to provide their opinion on a seven-point Likert scale, where, 1 represents "Strongly disagree" and 7 shows "Strongly agree" related to the above-mentioned constructs. Social networking self-efficacy was measured using a four-item scale (Mean=5.16, S.D= 1.13, $\alpha=0.842$). Social networking usefulness was measured with a four-item scale (Mean=5.01, S.D= 0.96, $\alpha=0.912$). A four-item scale was used to assess privacy concerns related to social networking (Mean=4.98, S.D= 0.89, $\alpha=0.901$). About social networking ease-of-use, a four-item scale was used for the same (Mean=5.21, S.D= 1.04, $\alpha=0.841$). Social networking fatigue was assessed using three-item scale (Mean=4.35, S.D= 0.94, $\alpha=0.748$), while, discontinuance usage intention was estimated using three-item scale (Mean=4.24, S.D= 0.82, $\alpha=0.803$). Few examples of the statements of fatigue relate to "Amount of information in social networking bothers and makes me feel tense", "Information search in social networking sites becomes cumbersome due to excessive information to deal with." Regarding discontinuance usage intention, some of the statements include "I intend to discontinue using social networking sites", "I will refrain from using social networking as regularly as I do currently."

Insert Table 3 about here

4. Data Analysis

The present research used SPSS tool to compute the descriptive statistics (mean, std. deviation etc.) and applied structural equation modelling (SEM) procedure to evaluate the structural linkages among the constructs. First, assessment of measurement model was carried out to ensure that the measurement indicators for each construct correctly load as per the prediction on their respective constructs. Second, we analyze the structural model to render empirical support to the hypotheses, also, ensure that the data fit the model well. In addition, method bias estimation was done to reduce the chances of bias diluting the results. The logic behind using SEM for the study relates to its ability to test direct, indirect, and

multigroup effects, as duly proposed in our hypothesized framework (Sin and Kim, 2013).

4.1 Empirical tests for Common method bias

Assessment of common method bias becomes inevitable as self-reporting scales were used during the process of data collection. Further, the data collection was carried out from a single source, which also induces the chances of method bias. To address this issue, the present research followed the procedural remedies, as recommended by MacKenzie and Podsakoff (2012) at the time of data collection and final analysis. In this context, the procedural remedies involve ensuring respondents' anonymity along with a listing of independent variable items before the dependent variable items, and respondents had no access to the answers to the prior questions. Also, it was significant to evaluate common method variance (Podsakoff et al., 2003). First, Harman's single-factor test was carried out to assess the six main constructs of the hypothesized model. The result of Harman's single-factor test revealed that six factors having eigenvalues greater than 1 were generated and the first factor explained 28.907% of the variance, which falls below the recommended level of 50% criterion (Harman, 1976). Hence, it indicates that common method bias doesn't dilute the data.

4.2 Evaluation of the measurement model

The assessment of internal consistency was carried out through computation of Cronbach's alpha. Appendix A exhibits that Cronbach's alpha values for all the construct duly exceed the recommended criterion of 0.70 (Nunnally, 1994). To measure construct reliability and convergent validity, two significant metrics were used: composite reliability (CR) and average variance extracted (AVE). The value of CR should be greater than 0.7, while, AVE values should exceed 0.5, which indicates adequate convergent validity (Bagozzi, 1981). Table 4 shows that both CR values (ranging between 0.755 to 0.914) and AVE values (ranging between 0.573 to 0.697) for all constructs exceed the cut-off limits of 0.70 and 0.50, respectively. Therefore, the measurement items used in the study converged on the same latent construct. For acceptable discriminant validity, AVE values for respective constructs should exceed the squared correlations of the construct and other constructs in the model (Chin et al., 2003). Table 5 exhibits that square root of the AVE values for each construct was higher than the diagonal elements, thereby, establishing discriminant validity. The model-fit statistics of the measurement model (CMIN/df=1.744, GFI=0.908, AGFI=0.880, CFI=0.959, IFI=0.960, TLI=0.951. RMR=0.054, RMSEA=0.049) indicates that the model fits the data well.

Insert Table 4 about here

Insert Table 5 about here

4.3 Measurement Model Invariance testing

The researchers across the globe, regarding measures, assume equal equivalence of the structure across the groups, e.g. male and female etc. This assumption needs to hold true to ensure group-related differences (Vanderberg and Lance, 2000). Until and unless this assumption is valid, one cannot claim that the constructs are the same in the study groups (Little, 1997). Therefore, the research includes assessment of measurement invariance through assessing configural invariance and metric invariance.

4.3.1 Configural Invariance for Gender and Age

Configural invariance ensures that the no. of factors and pattern of fixed and free parameters are similar in each group. It becomes almost necessary to test for configural invariance to conduct other invariance tests. According to Steenkamp and Baumgartner (1998), assessment of configural invariance is sufficient for ascertaining comparability of constructs across the groups. In the context of the present research, the logic behind using configural invariance is to examine whether the freely estimated (unconstrained) groups indicate good model fit. The measurement model fit for gender effects (CMIN/df=1.491, GFI= 0.859, AGFI=0.816, CFI= 0.947, IFI= 0.948, TLI=0.937, RMR=0.069, RMSEA=0.40) exhibit adequate model fit, which supports the equivalence of groups with reference to the factor structure. Similarly, the model fit for age effects (CMIN/df= 1.524, GFI=0.847, AGFI=0.804, CFI=0.911, IFI=0.904, TLI=0.892, RMR=0.073, RMSEA=0.042) also indicate good model fit.

4.3.2 Metric Invariance for Gender and Age

The evaluation for metric invariance involves imposing equality constraints on the factors. Vanderberg and Lance (2000) consider it to be a stricter measure of construct comparability as compared to configural invariance. This research estimates the metric variance using chi-square differences for both gender and age effects. Table 6 shows chi-square differences for gender (male and female groups) are invariant in nature, thus, achieving metric invariance. Also, chi-squares differences for age-groups (Refer Table 7) are also invariant, supporting metric invariance for the groups.

Insert Table 6 about here

Insert Table 7 about here

4.4 Structural model estimation

The evaluation of the structural model which indicates the path coefficients are shown in Table 10. Bootstrapping method using 1000 subsamples was carried out for estimating the statistical significance of the parameter estimates. Social networking self-efficacy significantly influences SNF ($b=-0.183$, $t\text{-value}=-4.575$), thereby, supporting H1. Simultaneously, social networking usefulness has significant negative impact on SNF ($b=-0.229$, $t\text{-value}=-5.325$), thus, H2 is supported. Consistent with H3, social networking privacy concerns positively and significantly influences SNF ($b=0.115$, $t\text{-value}=2.564$). Also, social networking ease-of-use significantly impacts SNF ($b=-0.356$, $t\text{-value}=-4.944$) and SNF has a positive and significant influence on DUIN ($b=0.412$, $t\text{-value}=6.338$), thus, hypotheses H4 and H5 were empirically supported.

Insert Table 8 about here

4.5 Multigroup analysis results

The tests for multigroup effects using as structural equation modelling examines predefined data groups to find out any significant differences in group-specific parameter estimates (Hair et al. 2014). Application of multigroup analysis enables the researchers to evaluate the differences between two identical models for different groups (e.g. gender). The estimation of multigroup effects is carried out using the chi-square difference test (Refer Table 9). Further, Table 10 indicates that the effects of males are significant and stronger in case of the linkage between self-efficacy and SNF, thus supporting H1a. In contrast, the female group effects are significant and stronger than the male group in the relationship between privacy concerns and SNF, therefore, rendering adequate support to H3a. However, no significant differences in groups are observed in the structural linkages of social networking usefulness and SNF as well as social networking ease-of-use and SNF.

Insert Table 9 about here

Insert Table 10 about here

Considering the age-related effects, the results in Table 11 and Table 12 exhibit that group differences (among four age-groups, i.e. Group A, B, C and D) are significant in case of the linkage between social networking usefulness and SNF. In this context, the effect of group A (18-27 years) is stronger followed by group B, C, and D respectively. The age-group

effects of privacy concerns towards SNF indicate group B (28-37 years) has substantially stronger effect as compared to group A, C and D. Also, the impact of age on the relationship between social networking ease-of-use on SNF is significant and higher for group A among the four age-groups. Further, the results show insignificant differences among age-groups for the relationship between self-efficacy and SNF.

Insert Table 11 about here

Insert Table 12 about here

5. Discussion

Grounded on the theoretical foundations of LCM and TAM model, the present research empirically validated how the potent antecedents induce social networking fatigue and thereby, influences discontinuance usage intention in the social networking context. The study examined four potent antecedents- self-efficacy, ease-of-use, privacy concerns, and usefulness. As expected, three antecedents exert negative influences on SNF, while, privacy concerns affect it positively and significantly that lends support to the recent works on SNF. Therefore, it establishes that SNF comprises of informational, technological and even social aspects (Bright et al., 2015; Lee et al., 2016, Zhang et al., 2016).

The study finds that social networking privacy concerns positively and significantly affect SNF. These findings are in similar line with Bright et al. (2015); however, the std. beta-effects suggest that social networking privacy concerns contribute more towards SNF as compared to social networking usefulness. This finding might be because the majority of the sample respondents are conscious of privacy threats and breaches. Consequently, privacy concerns result in risk and vulnerability issues for the social networking users. Hence, the users tend to feel tense and uncertain regarding the privacy due to a clutter of information on social networking sites. The multigroup effects of gender with regards to privacy concerns and SNF indicates females tend to experience SNF more as compared to males, while, the age effects exhibit Group B (28-37 years) have higher influence among the four age-groups. Therefore, the effects support the notion that females experience more fatigue in social networking due to increased privacy concerns and the age-group of 28-37 years are prone to privacy concerns as it falls considerably in the office-going and socially active sample. Result also highlight that social networking usefulness has a negative impact on SNF, thus supporting the proposed hypothesis. The finding indicates that users perceive that high usefulness of the social networking platforms considerably lowers the chances of

experiencing SNF. Further, the effects of gender show that there exist group differences among males and females in terms of the linkage between social networking usefulness and SNF. In addition, the effects of age are significant across the four groups for the above-mentioned linkage.

Empirical findings exhibit that social networking self-efficacy positively relate to SNF, which contradicts the intended hypothesis. This finding can be a result of burnout felt and experienced by the users during social networking activities. For instance, social networking users with high levels of self-efficacy might use this medium to a larger extent, therefore, increasing their SNF experience due to enhanced usage. The effects of gender and age were insignificant considering the relationship between social networking self-efficacy and SNF. Also, support was found for the significant linkage between social networking ease-of-use and SNF. This finding implies that users who perceive that social networking doesn't involve complexities, i.e. easy-to-use tend to experience lower SNF. However, gender effects on the above-mentioned were found to be insignificant, while, the difference among the age-groups were observed in the findings. In this regard, the group A (18-37years) category shows the highest effect among the four age categories. Prior research has found mixed results in case of usefulness and ease-of-use of social networking (Bright et al., 2015). The final hypothesis that establishes the linkage between SNF and discontinuance usage intention was found to be positive and significant, thereby, supporting the results of (Zhang et al., 2016) and validating that users who feel higher SNF usually refrain or quit using social networking.

6. Theoretical and Managerial Implications

The present research has few interesting theoretical implications. First, most studies have highlighted the positive effects of social networking usage; however, this study exhibits the dark side of the social networking usage, which remains underexplored (Berger et al., 2014). In this context, the study explored the potent antecedents that contributed towards SNF and thereby, induces the users' response behaviour, i.e. discontinuance usage intention. Consequently, it complements the prior studies that have limited the fatigue and stress outcomes, thus, provides a holistic and comprehensive view of the negative effects of social networking usage. Second, the research extends the LCM model into the digital media context, which involves more user activity and chances of being cluttered with huge content as compared with traditional media. Therefore, the study develops our understanding of the social networking nuances and how its opt-in nature differs from the consumption of

traditional media like magazines, TV, radio etc. Further, it also relates other technology acceptance theories such as TAM and UTAUT in the form of conceptual theories.

From a managerial perspective, the findings of this study are compelling for the brand managers and experts who formulate online and social media advertising strategies. Majority of the firms still rely on the traditional media for the advertising purposes, thereby, following a more top-down communication approach. However, the recent shift in advertising suggests that a bottom-up mechanism where the social networking users create discussions and engage in conversations regarding the brands and thereby, take up the onus to do promotional activity through word-of-mouth. Conventional firms are still struggling to find the right social media strategy that goes beyond Facebook presence, posting few Youtube videos and tweeting some random links. Indeed, brands without considering the larger strategic picture are cluttering social networking sites with useless content. Brands should focus on understanding the perception of the social networking users and their corresponding reactions to the content. In this regard, this piece of research can assist the brand strategists to formulate the right promotional content for the social networking users. Although prior research suggests that more features and enhanced interaction contribute positively towards increasing the social networking usage, this research highlights that “more is better” does not always hold true as users could portray indifferent and negative emotional response towards too much of good things. Hence, firms should be careful towards implementing such strategies, and the present study provides suggestions to maintain a balanced strategy to reduce the probability of occurrence of SNF among users. As privacy concerns exhibit the highest influence on SNF, we suggest that social networking sites could offer more secured privacy mechanisms and filtering options to manage requests, posts and social relationships effectively. Also, social networking sites should provide a “disable tab” for users to restrict the function that creates disinterest among them, hence, delaying the chances of “feature fatigue.” Further, social networking sites should not ignore the negative repercussions of excessive information and follow the philosophy of “Content is King.” Specific content management features like summarizing the posts, or content-categorization according to users’ liking and interest, could provide them with an enhanced experience in dealing with social networking content.

7. Limitations and future research

Unlike all research studies, the present research also bears some limitations that require proper, careful, and methodological interpretation of results. First, this research has investigated the impact of potent antecedents of SNF, thereby, its effect on discontinuance

usage intention in social networking context. However, the role of various factors that influence technology adoption using TAM and UTAUT, which impact continuance usage of social networking can be explored by future researchers. Further, the study included samples that were collected during a specific time-period; therefore, other researchers can carry out longitudinal studies to show the minute effects of the constructs on SNF. Finally, the study included the moderating effects of age-group and gender on the various hypothesized linkages; still, further research studies can evaluate the moderating effect of other possible moderators such as habit, experience, voluntariness of use etc., which might broaden the understanding of SNF. In addition, future studies can consider the impact of different generational cohorts (Gen X vs Gen Y vs Digital Natives) who have access and use social networking in an avid manner and explore their implications for SNF.

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Appendix A

Table 1. Demographic profile of the respondents

<i>Measure</i>	<i>Item</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Gender	Male	181	59.15
	Female	125	40.85
Age-group	18-27 (Group A)	128	41.83
	28-37 (Group B)	92	30.06
	38-47 (Group C)	64	20.91
	Above 47 (Group D)	22	7.18
Social networking usage (in years)	< 1 year	21	6.86
	1-3 years	73	23.86
	3-5 years	95	31.04
	>5 years	117	38.23
Social networking accounts	Facebook only	252	82.35
	Twitter only	45	14.70
	Both (Facebook & Twitter)	218	71.24
	Others (except Facebook & Twitter)	9	2.94
Daily time spent on social networking sites	<30 mins	82	26.80
	31-60 mins	109	35.62
	61-120 mins	78	25.49
	>120 mins	37	12.09

Table 2. Questionnaire used in final analysis

<i>Construct</i>	<i>Measurement item</i>
Social networking ease-of-use (Saade and Bahli, 2005)	SEU1 Learning to use the social networking is easy for me. SEU2 Navigating through social networking was easy for me. SEU3 It would be easy to become skill in social networking. SEU4 I find social networking to be flexible in nature and use.
Social networking usefulness (Curran and Lennon, 2011)	SU1 Assists me in interacting with friend and family. SU2 Helps me in learning new things. SU3 Assists me in performing the job effectively. SU4 Helps in sharing ideas and creations with peers and others.
Social networking self-efficacy (Larose and Rifon, 2007; Crossler, 2010)	SSE1 I feel confident of using social networking sites. SSE2 I am able to use social networking for the intended purpose. SSE3 Interacting with social networking doesn't need much mental effort. SSE4 My interaction with social networking sites is clear and understandable.
Social networking privacy concerns (Bright et al., 2015; Dinev and Hart,	SPC1 Using social networking makes me feel concerned regarding my privacy. SPC2 In social networking, marketers can misuse my personal

2004)	information. SPC3 I feel that social networking requires access to excessive personal information. SPC4 In social networking, I usually think twice before submitting my personal information.
Social networking fatigue (Bright et al., 2015; Zhang et al., 2016)	SNF1 Sometimes I feel bored of using social networking. SNF2 I am at times disinterested regarding the new features of social networking. SNF3 I feel social networking is cluttered with too much information.
Discontinuance usage intention (Maier et al., 2015; Ravindran et al., 2014)	DUIN1 In the future, I would use social networking far less than today. DUIN2 I will at times take a short break from social networking and return later. DUIN3 If I could, I would refrain from using social networking.

Table 3. Descriptive statistics for the research constructs

Construct	Mean values	Std. deviation	Cronbach's α
SSE	5.16	1.13	0.842
SU	5.01	0.96	0.912
SPC	4.98	0.89	0.901
SEU	5.21	1.04	0.841
SNF	4.35	0.94	0.748
DUIN	4.24	0.82	0.803

Table 4. Construct validity and reliability assessment

Construct	CR	AVE
SNF	0.849	0.654
SSE	0.914	0.680
SU	0.902	0.697
SPC	0.842	0.573
SEU	0.755	0.514
DUIN	0.811	0.590

Table 5. Discriminant validity assessment

	SNF	SE	SU	PC	SEU	DUIN
SNF	0.809					
SSE	0.025	0.824				
SU	0.061	0.537	0.835			
SPC	0.093	0.448	0.443	0.757		
SEU	0.112	-0.048	0.079	-0.025	0.717	
DUIN	0.018	0.373	0.341	0.592	-0.054	0.768

Note: Diagonal elements (bold) in the matrix represent square-root of AVE

Table 6. Chi-square difference for Gender

<i>Overall Model</i>	<i>Chi-square</i>	<i>Degrees of freedom</i>	<i>p-value</i>
Unconstrained	578.6	388	
Fully constrained	599.3	410	
Difference	20.7	22	0.539

Table 7. Chi-square difference for Age

<i>Overall Model</i>	<i>Chi-square</i>	<i>Degrees of freedom</i>	<i>p-value</i>
Unconstrained	1182.5	776	
Fully constrained	1210.2	804	
Difference	27.7	28	0.480

Table 8. Hypothesis-testing results

Structural linkage	Beta estimate	Standard error	t-value	Decision
H1: SSE → SNF	0.093	0.040	2.325	Not Supported
H2: SU → SNF	-0.115	0.045	-2.564	Supported
H3: SPC → SNF	0.229	0.043	5.325	Supported
H4: SEU → SNF	-0.107	0.052	-2.058	Supported
H5: SNF → DUIN	0.313	0.065	4.815	Supported

Table 9. Chi-square difference test for assessing multi-group effects of gender

Hypotheses	Δ Chi-square	Δ df	p-value	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2	Effect
SSE→SNF	1.096	1	0.042	0.003	0.004	-0.153	-0.171	ns
SU → SNF	4.121	1	0.295	0.004	0.005	0.007	0.008	significant
SPC→SNF	3.869	1	0.048	0.002	0.003	0.005	0.005	significant
SEU→SNF	1.246	1	0.246	0.004	0.005	-0.139	-0.155	ns

Table 10. Multigroup estimation of gender effects

Hypotheses	Standardized estimates		Significance
	Male	Female	
SSE → SNF	0.05	0.12	ns
SU → SNF	0.31	0.24	Significant (p<0.05)
SPC → SNF	0.27	0.35	Significant (p<0.05)
SEU→SNF	0.03	0.02	ns

Table 11. Chi-square difference test for assessing multi-group effects of age

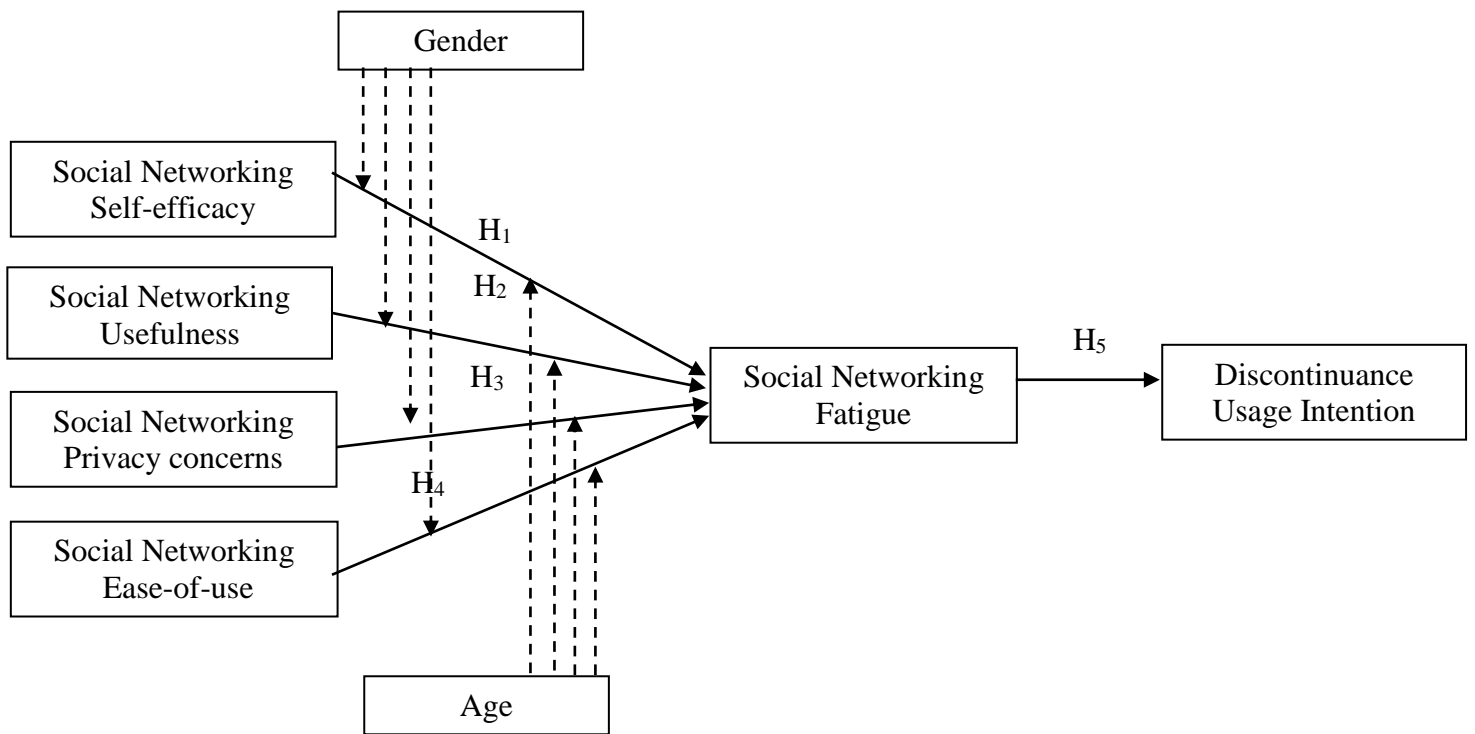
Hypotheses	Δ Chi-square	Δ df	p-value	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2	Effect
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SSE → SNF	1.136	1	0.286	0.002	0.002	-0.109	-0.114	ns
SU → SNF	3.967	1	0.046	0.009	0.007	0.012	0.013	significant
SPC → SNF	4.069	1	0.044	0.007	0.008	0.010	0.017	significant
SEU→SNF	4.563	1	0.033	0.005	0.006	0.016	0.019	significant

Table 12. Multigroup estimation of age-group effects

Hypotheses	Standardized estimates				Significance
	Group A	Group B	Group C	Group D	
SSE → SNF	0.02	0.03	0.05	0.01	ns
SU → SNF	0.33	0.28	0.26	0.21	Significant (p<0.05)
SPC → SNF	0.12	0.25	0.16	0.09	Significant (p<0.05)
SEU→SNF	0.17	0.14	0.13	0.11	Significant (p<0.05)

Note: Group A- 18-27 yrs, Group B- 28-37 yrs, Group C- 38-47 yrs, Group D-Above 47 yrs



*Multigroup effects (Age, Gender)

Figure 1. Hypothesized framework showing the linkage between potent antecedents, SNF, and discontinuance usage intention