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Overload and exhaustion: Classifying SNS discontinuance intentions

Muhammad Asim Nawaz, Zakir Shah, Ali Nawaz, Fahad Asmi, Zameer Hassan and Junaid Raza

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Abstract: Social networking sites (SNS) have transformed the communication systems; along with its positive effects, maladaptive usage of SNS brings some adverse outcomes too. The current study investigates the adverse impact of SNS usage. It focuses on social overload, information overload, and SNS exhaustion resultant of maladaptive usage causing dissatisfaction and regrets influencing the customer continuation intentions. Stressor-Strain-Outcome (SSO) framework is adopted in this study to investigate the antecedents of user intentions to discontinue the SNS usage. In the proposed research model, stressors, strains, and outcomes are empirically examined with data collected from 505 SNS users. Findings based on statistical analysis show that psychological and behavioral alterations caused by maladaptive usage force users to discontinue the SNS usage due to dissatisfaction and regret caused by SNS usage. The excessive usage cause social overload, information overload, and SNS exhaustion source to dissatisfaction and consequent regret that push the user to decide to discontinue SNS. This research work develops theoretical implication for future SNS-based work and put forward a

ABOUT THE AUTHORS

Muhammad Asim Nawaz is PhD candidate in School of Management at the University of Science and Technology of China. He received his Master degree in Business Administration from University of Central Punjab, Pakistan. Later on he is affiliated with Lyallpur School of Management, GCUF as Lecturer.

Zakir Shah is a PhD student in School of humanities and Social Sciences at the University of Science and Technology of China. His current focus of research is social media and its role disaster management.

Ali Nawaz and Junaid Raza are freelance lecturers of Management. Their current focus is on integration of supply chains with mediating role of social media.

Dr Fahad Asmi is assigned a position as post-doctoral at University of Science and Technology of China. His research work is published in different internationally well-recognized journals.

Zameer Hassan is a PhD student in School of humanities and Social Sciences at the University of Science and Technology of China. His current focus of research is on social media and Disaster Management.

PUBLIC INTEREST STATEMENT

The excessive engagement with social media brings out negative perceptions in varying degree of enormity like anxiety, depression, and boredom causing behavioral alteration. Such adverse outcome pushes the consumer away from service with intentions to reduce the usage or terminate it permanently. This behavioral outcome is mainly due to social overload (excessive social engagement with friends, peers, colleagues, and family), information overload (excessive exposure to undesired information), and SNS exhaustion (negative feeling due to excessive interaction with technology). Such maladaptive usage carries multiple cognitive and physical stresses for the user. These stressors cause the dissatisfaction with the service and generate regret in users that later converts into the adverse behavioral response of discontinuance intentions. The current results validate the negative perception associated with social media due to excessive interaction. Moreover, this study had implications for service providers, general users, and organizations using SNS for different communicational purposes.
practical suggestion for organizations using SNS, SNS user, and SNS service providers.

**Subjects:** Management of IT; Information & Communication Technology (ICT); Social Psychology

**Keywords:** social overload; information overload; SNS exhaustion; regret; satisfaction; SNS discontinuous intentions; information system (IS)

1. Introduction

Social networking sites (SNS) like Facebook, Myspace, Google+, and Twitter have experienced rapid growth in recent years due to ubiquitous nature and growing Internet users (Hofmann, Vohs, & Baumeister, 2012; Masur, Reinecke, Ziegele, & Quiring, 2014; Panek, 2014; Xu, Wang, & David, 2016), but facing specific challenges. For instance, Facebook enjoyed growth till 2012, and later active users started to go slow (Cannarella & Spechler, 2014). All the major SNS experienced this challenge. Chinese Qzone also faced the loss of active participants online (Cooper, 2014).

Considering this scenario, many service providers explored new corridors to enhance the continuous usage of SNS (Lin, Fan, & Chau, 2014). All significant networks come up with new services and system features to encourage the continuous usage by introducing new games, discussion forums, and communication channels but it appears these strategies are failing by and large since 2012. Another PEW research center survey shows that 61% of the respondents took a break from Facebook voluntarily and another 20% quit it due to boredom, gossip, friend’s messages, loads of information, and on-going system updates (Duggan, 2013). A GWI report indicated 8% drop down in the active usage of Facebook (Cannarella & Spechler, 2014). At the same time, most of the Facebook “X-active” users are moving toward the other medium of communication available regarding mobile applications and other SNS.

Such trend directed more interest in the discontinuance behavior of users from SNS, that is observed to have different determinants than continuance usage (Turel, 2014). The research work conducted by Maier, Laumer, Eckhardt, and Weitzel (2014) considered the “discontinuance of usage” as a strategy to cope with the stress induced by SNS, due to factors such as information overload (Kefi & Kalika, 2015; Tarafdar, Gupta, & Turel, 2013; Zhang, Zhao, Lu, & Yang, 2016), social overload (Baum, Calesnick, Davis, & Gatchel, 1982; Maier, Laumer, Eckhardt, & Weitzel, 2012; Maier et al., 2014) and SNS exhaustion (Cao & Sun, 2018). These studies highlighted the negative side-ways of the SNS excessive usage resultant of stressful experience of SNS leading to discontinuous usage. But yet a lot of questions need to be addressed (Berger, Klier, Klier, & Probst, 2014).

The user experience with any product or service is an essential determinant of intentions to continue using it. A positive experience results in satisfaction and leads to prolonged use (Chang, Liu, & Chen, 2014). In contrast to it, a negative experience results in regret causing service switch (Sik, Hong, & Lee, 2009), discontinuous intentions (Lemon, White, & Winer, 2002; Sik et al., 2009), lower satisfaction (Bui, Krishen, & Bates, 2009; Inman, Dyer, & Jia, 1997; Sik et al., 2009; Taylor, 1997; Tsirios & Mittal, 2000), and an adverse impact on reuse intentions (Tsirios & Mittal, 2000). The current research purpose is to identify the adverse effect of SNS excessive use and resultant individual behavioral change (Amichai-Hamburger, Kingsbury, & Schneider, 2013), as social network- ing take the place of all other communication networks. SNS is used for posting private and personal messages but also used as a marketing tool (Culnan, Mchugh, & Zubillaga, 2010), the recruitment source (Eckhardt, Laumer, & Weitzel, 2009), and communication medium with stakeholders (Majchrzak, 2009). If exhaustion and overloads cause a discontinuance of SNS usage, it will lead to less user participation in social networks. Hence, a better understanding of SNS is essential to avoid adverse impacts resulting from excessive usage (e.g. Barley, Meyerson, & Grodal, 2011).

Based on this gap in prior research studies, this study adopted stressor-strain-outcome (SSO) model to examine the IS post-adoption outcomes of regret in term of SNS usage. This study
addresses the two research questions: 1) how do perceived overloads and exhaustion contribute to the user’s online regret and dissatisfaction with SNS? 2) how do regret and dissatisfaction impact discontinuance usage intentions of SNS user? The current research work contributes to enhancing the researcher understandability of online regret experience, a construct of excessive interest but still had space for more empirical study. The further contribution is to examine the regret in post-adoption perspective, capturing all critical features of the cognitive experience of the SNS users and how it results in adverse outcomes for SNS user. Finally, this study includes dissatisfaction and regret as different strains that are resultant of perceived overloads and exhaustion. So, this research work enhances the post-adoption literature of IS regarding SNS that included more factors of discontinuance intention besides the dissatisfaction only.

2. Literature review

2.1. Stressor-strain-outcome model (SSO)
Based on the prior literature on technostress and information system (IS) discontinuation intentions, we adopt SSO model to develop our framework (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008). Stressor (S) represent those factors that generate stress for SNS user, and in present study social overload (Maier, Laumer, Weinert, & Weitzel, 2015), information overload (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010), and SNS exhaustion (Maier et al., 2014) are considered as stressor. Strain (S) characterize psychological resultant of stress induced by the individual during maladaptive usage. We consider regret (Wang et al., 2011) and dissatisfaction (Chen, Lu, Gupta, & Xiaolin, 2014) as strain factors. Finally, the outcome (O) that refers to the behavioral outcome of the stressful situation, here we consider user discontinuance intentions as an outcome (Furneaux & Wade, 2010).

2.2. Regret and dissatisfaction
Regret experience in virtual communities has started receiving researcher attention recently. It is challenging to manage potential receivers of information and content shared online, controlling the audience, the spread of content and forecasting others reaction to their recent online activity (Wang, Leon, Norcie, Acquisti, & Cranor, 2011). SNS have both aspects, good and bad, for example, self-disclosure results in better social relationship and better quality of well-being (Valkenburg, Peter, Valkenburg, & Peter, 2009). At the same time, this information disclosure can result in embarrassment, social snubbing, and revictimization (Bellmore, Xu, Burchfiel, & Zhu, 2013). Most of SNS users experience online regret (Madden, 2012; Wang et al., 2011). User disclosure of personal information online result in regret feeling later on, (Moore & Mcelroy, 2012). This makes “regret” an important aspect to be discussed with a satisfaction level of SNS users. Satisfaction is the result of the comparison, originated from marketing literature. Whereas satisfaction is a comparison between expected and actual performance, but in case of regret comparison is between the achieved option and forgone alternatives (Tsiros & Mittal, 2000). Many researchers discuss this concept and coins that regret is related to choices and satisfaction is relevant to the outcome.

The relationship of dissatisfaction with switching intentions is discussed by Zeelenberg & Pieters (2004), Zeelenberg, Van Dijk, & Monstead (2000). Similarly, the relationship between regret and switching intentions is well discussed by Chang et al. (2014). The relationship between regret and dissatisfaction, regret and discontinuance intentions is yet missing. SNS users are expected to feel regret that might result in discontinuance intentions such as reduction in use, short break, or termination. This study covers the relationship of regret and dissatisfaction but also discuss regret as a determinant of discontinuance intentions.

2.3. Overloads and SNS exhaustion
The user engages with social media for entertainment, informational and communication purposes and such use can yield immediate gratification. This gratification can be accompanied by a weakened sense of volitional control and encourage continuous activity leading to excessive use
Excessive social use of SNS creates expectations, obligating user to respond to other users demand, to do so user continuously visit SNS accounts, and this behavior exposes the user to overwhelming volume of social demand resulting in SNS exhaustion, which leads to physical and psychological strain called “social overload” (Maier et al., 2012). Similarly, growth in virtual relationships demands an increase in social support (Maier et al., 2015). This social support results in negative psychological and behavioral consequences such as “SNS Exhaustion.” SNS platform permits users to share loads of information on walls, profiles, and blogs resulting in “Information Overload” (Eppler & Mengis, 2004). The current framework of SSO examines these three stressors to study the regret and dissatisfaction influencing the behavioral intentions to discontinue the use of SNS as shown in the Figure 1 below.

3. Conceptual framework and hypothesis
A conceptual framework is incorporating SSO framework.

3.1. Hypothesis
Social overload is described in terms of crowding, as too much friends requests, messages to respond, time, and attention needed to respond and maintain a social relationship in an ever-growing social circle (Maier et al., 2012; McCarthy & Saegert, 1978). Whereas humans have a limited ability to maintain stable social relationships and that is 150 also known as Dumber number (Dunbar, 1992). Recent studies show this limit is jumped by most users (Walther, Van Der Heide, Kim, Westerman, & Tong, 2008). Research regarding sociology initiates that social overload is resultant of unwanted social interaction and this induces psychological distress (Evans & Lepore, 1993; Maier et al., 2014). Research in sociology describes that after a particular time, the increasing density of regional population will affect residential satisfaction (Bonnes, Bonaiuto, & Ercolani, 1991; Machleit, Eroglu, & Mantel, 2000). Maier et al. (2012) studied psychological reactions of social overload in the context of SNSs and figured that users face adverse motivation from excessive virtual activities resultantly they experience low satisfaction. SNS users have social expectations from networks when these expectations are not satisfied; it is anticipated that they might encounter lower satisfaction in the context of SNS. Thus, we propose this hypothesis:

H1(a). Social Overload is having a positive influence on user dissatisfaction.

The rise of overload takes place when the social activities in the virtual world exceed an individual user’s ability to process the interactions and respond to them accordingly (McCarthy & Saegert, 1978). SNS users are continuously visiting profiles to manage virtual personalities of them, updating status, replying to queries, liking photos and messages. When this situation is compared with the social norms and bonds of the offline world, it demands individuals to look after friends.
and meet their demands accordingly (Koroleva et al., 2010). This social overload leads to the feeling of regret due to wastage of time and energy. Prior literature regarding user behavior advocates a relationship existing between SNS usage and SNS-based regret. Recent research empirically shows that negative emotions are more likely to occur when the expected outcome is not favorable (Sik et al., 2009). When users find that SNS inferior to what was expected, they might experience more regret, as the outcome was unexpected. Social overload is an unexpected outcome leading to regret due to the wasted opportunity for better utility. Hence, another hypothesis can be predicted to test this relationship:

H1(b). Social overload has positive influence to regret feeling.

People have a limited ability to process information, and when this boundary is surpassed, people experience information overload (Eppler & Mengis, 2004). Information overload can be discussed regarding two variables: the information processing capability and the other is information processing requirement when second overruns first, information overload arises and that decreases information use evident from prior research work (Lusk, 1993; Pennington & Tuttle, 2007). Information processing ability differs from individual to individual, so it is hard to set a standard to measure information overload (Chen, Shang, & Kao, 2009). SNS-induced information overload results in emotional distress and dissatisfaction (Eppler & Mengis, 2004). Consequences of information overload are confusion, inability to recall information, and set priorities (Schick, Gordon, & Haka, 1990); it also leads to stress and anxiety (Eppler & Mengis, 2004). The psychology research already states that psychological fatigue will have a worse impact on user ability to continue the task (Bartlett, 1953). Ravindran, Kuan, and Goh (2014) found in detailed qualitative interviews that people who face SNS fatigue were inclined to reduce the usage for a short period or abandon SNS usage. Based on these facts, we propose the following hypothesis:

H2(a). Information Overload is positively related to user dissatisfaction.

Users with regret complain more and have low intentions to re-experience such product or service (Keaveney, Huber, & Herrmann, 2007). Marketing literature has studied regret and conclude that regret feeling might influence the behavioral intentions which are not determined by the satisfaction (Tsiros & Mittal, 2000). Messner and Waenke (2009) studied information overload and found that too much information set user astray and it gets hard to make choices that later result in regret. Studies show the existence of a positive relationship between satisfaction and repurchase intentions and a negative correlation between regret and reuse (Keaveney et al., 2007; Oliver, 1980). In short, this digital explosion of information is leading to information overload that is having an adverse effect on human behavior and health (Jackson et al., 2008; Stokols, Misra, Runnerstrom, & Hipp, 2009). Both regret and information overload are considered to have a negative relationship with satisfaction and satisfaction is observed to have negative correlation with regret (Inman et al., 1997; Maier et al., 2012; Taylor, 1997), based on this argument it gets interesting to study the relationship between regret and information overload in SNS, so a new testable statement is proposed:

H2(b). Information overload is negatively related to regret feeling.

SNS connects likeminded people from similar background, nationalities, and regions, and this social embeddedness benefits the user in terms of better social support (Ellison, Steinfield, & Lampe, 2007). But at the same time, users are exposed to increase number of friends, news, happenings, information, and situation demanding social support out of a sense of duty to respond to social requests (Maier et al., 2015). This phenomenon might lead to negative psychological and behavioral outcomes leading to a feeling of tiredness and exhausted. Users are expected to have a higher level of SNS exhaustion if they are tired of SNS usage, this feeling is the result of interpersonal relationships with other user’s online (Ayyagari, Grover, & Purvis, 2011). SNS exhaustion is the psychological and behavioral reaction of compulsive and maladaptive usage of social media leading to lower level of
satisfaction; this process displays user's psychological reaction to stress creating situation triggered by SNS usage (Maier et al., 2015). These findings suggest that extensive usage due to increased social demand and interpersonal interaction of SNS can result in SNS exhaustion, and this feeling of exhaustion can contribute to the feeling of the lower level of satisfaction with SNS performance. To test this relationship, we can develop a hypothesis as follows:

\[ H_3(a) \] \textit{SNS Exhaustion is positively related to user dissatisfaction.}

The negative consequences of SNS exhaustion include tiredness and exhaustion, and this level of exhaustion can be higher if users are tired of SNS usage, this condition comes into play due to continuous interaction in interpersonal relationships (Ayyagari et al., 2011). These findings suggest that SNS exhaustion leads to adverse outcome and regret is also observed as negative emotions that results due to forgone options imagined being better (Yi & Baumgartner, 2004; Zeelenberg et al., 2000). Regret involves the self-blame and consideration that one made the wrong choice and a desire to make corrective action (Roseman, Wiest, & Swartz, 1994; Zeelenberg, van Dijk, Manstead, & Der Pligt, 1998). Both regret and SNS exhaustion hurt end users, based on the above arguments it would be interesting to study this relationship of SNS exhaustion and regret generation in users, so another hypothesis is proposed as follows:

\[ H_3(b) \] \textit{SNS exhaustion is positively related to regret feeling.}

When a product/service performance meets the expectations of a user, satisfaction is confirmed (Mckinney, Yoon, & Mariam, 2002), the inverse of it results in dissatisfaction (Tsiros, 1998). Whereas regret is the negative emotion that occurs when the user realizes the difference in performance between current and forgone choices (Landman, 1987; Zeelenberg et al., 2000). When the performance of a chosen product fails to meet the user expectation, dissatisfaction occurs. Whereas regret occurs when a selected product performs lower than forgone choices (Keaveney et al., 2007). Similarly, Taylor (1997) found that regret has a significant influence on satisfaction level. In an experiment to examine the relationship of regret and satisfaction, it was observed that regret influenced satisfaction level of customers (Inman et al., 1997). Regret and satisfaction are different concepts but they can occur together (Tsiros, 1998; Tsiros & Mittal, 2000; Zeelenberg et al., 2000). To test this relationship of regret and dissatisfaction, we can develop another hypothesis as:

\[ H_4(a) \] \textit{Feeling of regret is negatively associated to user dissatisfaction.}

The misuse of social media leads to worse outcomes, and regret is one such outcome. A recent study reports that 29% of young adults posted job-related secrets and 74% of adults removed some material from the walls to avoid negative effect on the job (Kuegler, Smolnik, & Kane, 2015). Regret felt in online activities generate negative consequences as users blame themselves for such a situation resultantly user develops a feeling of guilty and embarrassment (Connolly & Zeelenberg, 2002). In recent studies, it is observed that regret has negative effect on continuance intentions toward online services (Kang, Hong, & Lee, 2009). Experiencing online regret can result in lower satisfaction and develop a tendency to discontinue the service (Bui et al., 2009; Lemon et al., 2002; Sik et al., 2009). Online user's experiences regret, and this regret might develop a sense of discontinuing from SNS services so that we can propose another hypothesis as:

\[ H_4(b) \] \textit{Feeling of regret positively associated with user's SNS discontinuance intentions.}

Expectancy disconfirmation theory considers that the continuation intentions of the user are established by the level of satisfaction, which is determined by three factors: individuals' initial expectations, perceived performance, and perceived disconfirmation. User satisfaction with adopted IS is the most critical ingredient of IS-related research as it is linked to continuous usage of IS (Bhattacherjee, 2001). Organizations invest considerable time, budget, and human
resource to keep track of user satisfaction and simultaneously attempt to improve user satisfaction level (Islam, 2011). Satisfaction is considered as the strongest aspect of user intentions to continuous usage (Bhattacherjee, 2001) and same is perceived for the inverse of it, as dissatisfied users are more likely to develop discontinuing intentions (A. Bhattacherjee, Limayem, & Cheung, 2012). Hence, by this reasoning and research stream presented, we can improve the final hypothesis as:

**H5. Lower user satisfaction is positively associated with user’s SNS discontinuance intentions.**

4. **Research methodology**

4.1. **Measurements**

The questionnaire is derived from previous studies (see appendix). Items for measuring social overload, information overload, and SNS exhaustion are adapted from Maier et al. (2015), Karr-Wisniewski & Lu (2010), Ayyagari et al. (2011), respectively. Similarly to measure, the regret items are adapted from Chang et al. (2014), Tsiros & Mittal (2000), Zhang et al. (2016). Items concerned with dissatisfaction are adapted from Bhattacherjee (2001), Chang et al. (2014). Scale for measuring discontinuance intentions are adapted from Maier et al. (2015), Ravindran et al. (2014). The 7-point Likert scale is used ranging from “strongly disagree” = 1 to “strongly agree” = 7 for all items. To view detailed measurement scales, please refer the appendix section.

4.2. **Data collection**

The questionnaire was pre-tested with five IS researchers having experience in virtual communities. Back translation method was observed to translate the original English-based questionnaire to local language (Urdu). A pilot study was conducted on 50 volunteer respondents who were active members of SNS. This study validated the results and measures for further data collection. Empirical data are collected by conducting the online survey through e-mail. A total of 568 questionnaires were received. The survey system filtered duplicate copies according to respondents IP addresses, after this a total of 505 questionnaires were left regarded as valid. To see the non-response bias, we studied the comparison of the means of all variables and demographics for initial and later submissions. The results of the T-test demonstrated no substantial dissimilarity occur.

5. **Research methodology**

5.1. **Demographics**

Table 1 elaborates the demographics as approximately 60%, and 40% of the respondents were male and female, respectively. A maximum number of respondents were aged from 20 to 30, having diverse educational background undergraduate to professional degree holders.

| Measure    | Item           | Count | Percent (%) |
|------------|----------------|-------|-------------|
| Gender     | Female         | 201   | 39.80       |
|            | Male           | 304   | 60.19       |
| Age        | 20–25          | 125   | 27.9        |
|            | 26–30          | 244   | 47.6        |
|            | 31–35          | 93    | 16.8        |
|            | 35–40          | 43    | 7.7         |
| Education  | Under-Graduate | 99    | 17.8        |
|            | Graduate       | 134   | 29.5        |
|            | Post-Graduate  | 126   | 24.5        |
|            | Professional Degree | 146 | 28.1      |

Table 1. Demographic profile of the collected sample of 505 individuals
6. Data analysis & results

6.1. Measurement model

To check the factor reliability of the scales, principal component analysis (PCA)-based factor analysis was conducted that depicts six factors with eigenvalues of more than 1 and were extracted with 73.348% of the total variance explained. The item loading on the expected factors was observed greater than 0.5 and showing no cross-loading-related complication, which establishes good convergent and discriminant validity. High reliability of the scale was recorded as all Cronbach’s alpha values were higher than 0.70. Later conformity factor analysis (CFA) was conducted. Table 2 shows the results.

Table 3 shows AVE (the average variance) for each construct that is also observed above 0.5, indicating the decent convergent validity of the scale (Bagozzi & Youjae, 1988). The composite reliabilities (CRs) all were above 0.7, ensuring the scale’s sound reliability (Nunnany, 1978). The correlation between the latent constructs is given in Table 3. The diagonal elements are demonstrating the AVE square root of the corresponding, and all were better than corresponding correlation coefficients with other constructs that indicates the scale has sound discriminant validity. To check common method bias existence, Harman’s one-factor test was conducted that explained 73.348% of the variance. First factor is accumulated for 16.017% of the total variance,
showing no single factor accumulated for the utmost of the variance and this ensures that common method bias is not a considerable thread to current research.

In the measurement model, six constructs were assessed by CFA through AMOS. The goodness-of-fit used to see overall model fit. The CFA overall fit is observed acceptable (Hair, Anderson, Tatham, & Black, 1998). RMSEA is 0.61, less than the accepted range of up to 0.10 (Anderson & Gerbing, 1988). CMIN/DF is 2.876, within the acceptable range. CFI and IFI are 0.970, respectively, NFI is 0.954 and TLI is 0.965; all these are above the estimate of 0.90 (J. F. Hair, Black, Babin, & Anderson, 2010). Results are also given in Table 4.

### 6.2. Structural model

The structural model was tested through the data collected for validity measures. SPSS is used for this purpose. All the results were within the acceptable range. RMSEA is 0.61, within the accepted range of up to 0.10 (Anderson & Gerbing, 1988). CMIN/DF is 2.902, within the acceptable range. CFI and IFI are 0.970, respectively, NFI is 0.953 and TLI is 0.965; all these are above the estimate of 0.90 (J. F. Hair et al., 2010). Results are shown in Table 4. Results show acceptable model, and we proceed further to estimate path coefficient.

The path coefficient calculation leads to significant results. The results indicate that social overload positively contributes to the user dissatisfaction level (H1(a): b = 0.239) and regret (H1(b): b = 0.125). Hence, H1(a) and H1(b) are accepted. Information overload is having a significant impact on the dissatisfaction level of the user (H2(a): b = 0.164) and regret (H2(b): b = 0.211). So, H2(a) and H2(b) are confirmed. SNS exhaustion is also having a positive impact on customer dissatisfaction, but it is third in row proceeded by social overload and information overload (H3(a): b = 0.083) and regret (H3(b): b = 0.273), so H3a and H3b are also accepted. Regret is also having a significant impact on discontinuance intentions of the user.

### Table 3. Descriptive statistics (Mean and Standard Deviation), constructs correlation, and divergent reliability

|     | M(SD)  | REG    | SO     | IO     | EXH    | DCI    | DIS    |
|-----|--------|--------|--------|--------|--------|--------|--------|
| REG | 4.40(1.44) | 0.918  |        |        |        |        |        |
| SO  | 4.96(1.45)  | 0.339  | 0.964  |        |        |        |        |
| IO  | 4.30(1.57)  | 0.401  | 0.320  | 0.948  |        |        |        |
| EXH | 4.63(1.42)  | 0.432  | 0.404  | 0.483  | 0.952  |        |        |
| DCI | 5.40(1.32)  | 0.404  | 0.356  | 0.308  | 0.302  | 0.916  |        |
| DIS | 5.00(1.21)  | 0.353  | 0.412  | 0.376  | 0.334  | 0.487  | 0.910  |

Divergent reliability measured through the square-root if each construct’s AVEs as underlined in the diagonal. REG = Regret, SO = Social Overload, IO = Information Overload, EXH = SNS Exhaustion, DCI = Discontinuous Intentions, DIS = Dis-satisfaction.

### Table 4. Model fitness indices recorded by AMOS for measurement and structural model

| Fitness Measures | Measurement Model | Structural Model |
|------------------|-------------------|------------------|
| CMIN             | 1086.982          | 1108.600         |
| Df               | 378               | 382              |
| CMIN/DF          | 2.876             | 2.902            |
| CFI              | .970              | .969             |
| IFI              | .970              | .969             |
| NFI              | .954              | .953             |
| TLI              | .965              | .965             |
| RMSEA            | .061              | .061             |
Moreover, regret contributes positively to initiate the user dissatisfaction (H4(a): b = 0.198), means that regret contributes to the level of dissatisfaction and its impact on later outcomes. Hence, both H4(a) and H4(b) are accepted as shown in Table 5 below. Dissatisfaction positively contributes to the discontinuance intentions of the user (H5: b = 0.441).

6.3. Hypothesis testing

Figure 2 shows the hypothesis results. Regret and dissatisfaction together explain almost 53% of the variance. The model further explains that 24.5% variance is observed in dissatisfaction, 27.9% variance in regret and 30.5% is concerned to dependent variable (i.e. user discontinuance intentions). Control variables have a nonsignificant effect on discontinuance intentions except gender. So, the hypothesized model is accepted. (Figure no. 2).

7. Discussion

Based on SSO, the study investigates how SNS-based stressors (social overload, information overload & SNS exhaustion) induces user with strains (dissatisfaction & regret) and how it outcomes influence SNS user. All the three stressors, namely, had a positive influence on dissatisfaction and regret generation in users. This confirms the recent finding on regret and dissatisfaction (Chang et al., 2014; Liao, Lin, Luo, & Chea, 2016). The current study investigates nine hypothesis and results were found significant. The results show that user with higher intensity to use SNS is more likely to discontinue confirming the recent findings (Zhang et al., 2016).

Table 5. Hypotheses testing and the recorded results

| Hypotheses Testing | Coefficient | S.E  | t-Value | p-Value |
|--------------------|-------------|------|---------|---------|
| SO \rightarrow DIS | 0.239       | 0.036| 6.709   | **      |
| SO \rightarrow REG | 0.125       | 0.047| 2.664   | .008    |
| IO \rightarrow DIS | 0.164       | 0.033| 4.939   | **      |
| IO \rightarrow REG | 0.211       | 0.043| 4.946   | **      |
| EXH \rightarrow DIS | 0.083       | 0.039| 2.137   | .033    |
| EXH \rightarrow REG | 0.273       | 0.051| 5.339   | **      |
| REG \rightarrow DIS | 0.198       | 0.060| 3.320   | **      |
| REG \rightarrow DCI | 0.231       | 0.035| 6.633   | **      |
| DIS \rightarrow DCI | 0.441       | 0.047| 9.338   | **      |

REG = Regret, SO = Social Overload, IO = Information Overload, EXH = SNS Exhaustion, DCI = Discontinuous Intentions, DIS = Dis-satisfaction

Figure 2. Graphical explanation of the model results.
This study also finds that social overload has a significant impact on dissatisfaction followed by the information overload and SNS exhaustion. Which is different from the recent findings of Cao and Sun (2018) urging excessive cognitive usage have a most significant impact and also different from Lee, Son, and Kim (2016) who advised that system feature overload, information overload, and communication overload exert the same impact on strains. The possible explanation for this phenomena is that SNS users are having higher numbers of friends that surpass the normality (Cannarella & Spechler, 2014; Dunbar, 1992). But this is inverse in case of regret, SNS exhaustion contributes the maximum to regret generation followed by the information overload and social overload.

The recent research regarding regret and satisfaction finds that regret contributes significantly to repurchase/reuse intentions regarding marketing (Liao et al., 2016). In IS perspective, Liao, Liu, Liu, To, and Lin (2011) discussed information quality disconfirmation, system quality disconfirmation, and service quality disconfirmation that generate regret in customers regarding online purchasing and repurchasing in post-adoption phase but to the best of our knowledge, none have discussed regret with information overload, social overload, and SNS exhaustion, so it is the first study of its nature.

Addressing this gap, the current study exhibits the effect of social overload, information overload, and SNS exhaustion on regret and dissatisfaction level of the user. The current conceptual framework presented some new and interesting finds. Social overload followed by information overload and SNS exhaustion had a significant influence on a generation of regret feel and dissatisfaction in SNS users. These findings are different from the recent work of Lee et al. (2016). Prior work shows that SNS users’ experience online regret (Dhir, Kaur, Chen, and Lonka, 2016), and this experience leads to switching intentions (Kang et al., 2009), negative impact on the reuse intentions (Tsirou & Mittal, 2000), contrast to this, current SSO framework finds that information overload, social overload, and SNS exhaustion had significant effect on dissatisfaction and regret, moreover regret had direct impact on discontinuance intentions of user and indirect impact through contribution to dissatisfaction that further strengthens the user intentions to discontinue the usage. To conclude, besides dissatisfaction, regret also plays a vital role in influencing the discontinuance intentions of SNS user; this makes it a significant finding that provides a healthier picture of online regret and its outcome.

8. Theoretical and practical implication

The current study can be of potential interest for psychologists, psychiatrists, educators, researchers, and practitioners who are concern to study online regret. It contributes to better understanding of the relationship of regret and dissatisfaction much discussed in marketing literature but quite ignored regarding social media. Practitioners can also use this study to develop a better conceptualization of online regrets, like how SNS-based overloads and exhaustion develop dissatisfaction and regret. Consequently, strengthening the dissatisfaction impact leads to discontinuance intentions.

Current research work is also useful for organizations using SNS platforms such as Facebook, Twitter, or Qzone to reach potential and current customers. The organizations using SNS platforms are struggling to keep intact existing participants and keep the active participation alive on such platforms (Habibi, Laroche, & Richard, 2014). The present study results show that social overload, information overload, and SNS exhaustion can contribute in the feeling of online regret, so managers and administrators of SNS service providers should develop better path ahead to ensure that their users can participate actively without incurring the online regret. Such as managers and administrators can restrict the amount of MBs shared by the individual user every day, often offer a smart and easy session to understand service filters, provide a warning clock showing the continuity of online activity that would help the user to realize the time of actual engagement per day in the context of SNS.
limitations might assist in curtailting the regret experience among the users and fulfilling the organizational goal to engage the user in a better way for a more extended period.

9. Limitations and future research
The current study has certain limitations. First, the results are based on SNS users from a single country (e.g. Pakistan) that represents a single geographical location and culture. So this restricts the applicability of current study findings to the whole sum of SNS users. Second, present work is more general and more specific study must be done to develop a better understanding of the users on each SNS community such as Twitter, Facebook, etc. Third, self-report and cross-sectional data are included that might not be appropriate for causal studies because it might lead to a common method bias.

Future researchers can investigate the effect of regret on other walks of life such as education, work environment, or other real-life interactions. We have used dissatisfaction and regret as stress variables; other stressors can also be used as mediating variables that influence the discontinuance intentions of users. The “center of gravity” at which user start feeling dissatisfaction and regret must be further investigated in future research work. More psychological and behavioral factors should be engaged in future studies. Considering the personality traits that might influence the regret-related aspects, in future personality-based variables can be used to develop a better understanding of this phenomenon. Moreover, it will be important to see the impact of regret in terms of age and gender. Finally, future researchers must examine the occurrence of online regret in the SNS-specific features as picture tagging (Dhir, Chen, & Chen, 2017) and picture sharing (Malik, Dhir, & Nieminen, 2016) that are considered much popular among SNS users.

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## Appendix

| **Social Overload** | I take too much care of my friends' well-being on social networking sites. | (Maier et al., 2015) |
|---------------------|----------------------------------------------------------------------------|----------------------|
|                     | I deal too much with my friends' problems on social networking sites.      |                      |
|                     | My sense of being responsible for how much fun my friends have on social networking sites is too strong. |                      |
|                     | I am too often caring for my friends on social networking sites.           |                      |
|                     | I pay too much attention to the posts of my friends on social networking sites. |                      |
| **Information Overload** | I am often distracted by the excessive amount of information available to me on social networking sites. | (Karr-Wisniewski & Lu, 2010) |
|                     | I find that I am overwhelmed by the amount of information I have to process on a daily basis on social networking sites. |                      |
|                     | There is too much information about my friends on social networking sites, so I find it a burden to handle. |                      |
|                     | I find that only a small part of the information on social networking sites is relevant to my needs. |                      |
| **SNS Exhaustion** | I feel drained from activities that require me to use social networking sites. | (Ayyagari et al., 2011) |
|                     | I feel tired from my social networking sites activities.                   |                      |
|                     | Using social networking sites is a strain for me.                          |                      |
|                     | I feel burned out from my social networking sites activities.              |                      |
| **Regret**          | I feel sorry for choosing the social networking sites.                     | (Tsiros & Mittal, 2000) |
|                     | I regret choosing the social networking sites.                             |                      |
|                     | I should have chosen another social networking site.                       |                      |
| **Dissatisfaction** | I feel dissatisfied with my overall experience using social networking sites. | (Bhattacherjee, 2001) |
|                     | I feel displeased about my overall experience using social networking sites. |                      |
|                     | I feel discontented about my overall experience using social networking sites. |                      |
|                     | I am not delighted by my overall experience using social networking sites. |                      |
| **Discontinuous usage intention** | In the future, I will use social networking sites far less than today. | (Maier et al., 2015) |
|                     | In the future, I will use another social networking site.                  |                      |
|                     | I will sometimes take a short break from social networking sites and return later. |                      |
|                     | If I could, I would discontinue the use of social networking sites.        |                      |
