

Once a user, always a user: Enablers and inhibitors of continuance intention of mobile social networking sites

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ABSTRACT

The present research builds upon the Bagozzi's self-regulation framework, the uses and gratifications theory, and the emotional exhaustion research in order to deeply explore the enablers and inhibitors of continuance intention regarding mobile social networking sites. SmartPLS 2.0 M3 is used in order to analyze the data based on 729 usable responses. The results show that satisfaction has a positive impact on continuance intention, while emotional exhaustion has a negative effect. In addition, escapism, exhibitionism, voyeurism, voluntarism, and mobility gratifications determine satisfaction. Furthermore, information overload and social overload affect emotional exhaustion. The findings provide theoretical and practical implications.

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1. Introduction

The last years have witnessed the worldwide exponential diffusion of wireless devices such as smartphones and tablets (Quan-Haase and Young, 2014). This phenomenon fosters the development of many mobile applications that facilitate the daily life of many persons. Mobile social networking sites (MSNSs) represent one of the most popular applications (Nikou and Bouwman, 2014). MSNSs are web-based services installed on mobile devices that allow persons to construct a profile with personal information (email, self-description, photos, and videos), search for friends, make new encounters, and be found by others (Quan-Haase and Young, 2014).

Given the benefits of MSNSs for both persons and organizations, the expansion of their number, the volatility of the MSNS market, and the fierce competition among their providers, academics and experts strive to explore the factors that affect their use (Hajli, 2014; Lin et al., 2014). However, Less is known about the determinants of MSNSs continuance intention and much lesser about the inhibiting factors (Chen, 2013; Maier et al., 2015). Indeed, the majority of research focuses on the drivers and pays little attention on the discontinuers that hinder persons from continuing to use MSNSs (Ayyagari et al., 2011; Maier et al., 2015).

The present research uses the Bagozzi's self-regulation framework (1992, 2006) as the overarching theoretical basis to shed lights on the mechanisms underlying MSNSs continuance intention. In addition, it stems from the uses and gratifications theory in order to explore the gratifications-obtained from MSNSs use. Moreover, it builds upon the person-environment fit model in order to incorporate information overload, social overload and MSNS emotional exhaustion. To the best of the author's knowledge, it is the first study to integrate information overload, social overload and MSNS emotional exhaustion with enablers in the context of MSNSs.

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The present study is structured as follows. The second section is dedicated to the literature concerning the Bagozzi's self-regulation framework, the uses and gratifications theory, and the person-environment fit model. Then, the third section derives the hypotheses and introduces the research framework. It is followed by the fourth section dedicated to the method. The fifth section analyzes the data and displays the results. Finally, the sixth section discusses the findings, provides the theoretical and practical implications, and presents the limitations and future research avenues.

2. Literature background

2.1. The Bagozzi's self-regulation framework

Bagozzi (1992, 2006) develops the self-regulation framework in order to explore the mechanisms through which a person intend to perform a specific behavior. It is well validated in the area of information technologies such as e-commerce (Polites et al., 2012) and SNSs (Lin et al., 2014). It posits that the self-regulatory process begins with the appraisal phase which leads to an emotional reaction (positive or negative) and thereby develops intention. During the appraisal subprocess, the customer evaluates “the motivational relevance of the conditions” and “the extent to which the conditions thwart or facilitate achievement of one's goals” (Bagozzi, 1992, p. 187). In this phase, two outcome-desire units emerge; that are (1) outcome-desire fulfillment and (2) outcome-desire conflict. The latter refers to the situation in which a person fails to fulfill a motivation or realize a goal or experiences a disagreeable event; while, the former refers to the case of a person who fulfills a motivation or realizes a goal or experiences an agreeable event. In turn, the outcome-desire fulfillment/outcome-desire conflict leads to a positive/negative emotional reaction, respectively. Finally, the person will develop a coping response depending on the nature of his/her emotional reaction. He/she will continue to enact the same behavior in order to maximize the positive emotional reaction. However, he/she will reduce the frequencies of use or more radically discontinue in order to minimize the negative emotional response.

2.2. The uses and gratifications theory

The uses and gratifications theory refers to “the study of the gratifications or benefits that attract and hold audiences to various types of media and the types of content that satisfy their social and psychological needs” (Dunne et al., 2010, p. 47). It is specifically tailored to identify the motivational factors and gratifications that drive the individuals to choose a particular medium (e.g., radio, television, and the Internet) over another (Ko et al., 2005). It is considered as an ideal theoretical basis to probe the gratifications that users seek to fulfill when they use MSNSs (Lo and Leung, 2009; Malik et al., 2016). It is widely applied in the context of SNSs (Huang et al., 2014; Xu et al., 2012).

It distinguishes between gratifications-sought and gratifications-obtained. The gratifications-sought are defined as “gratifications that audience members expect to obtain from a medium before they have actually come into contact with it” (Quan-Haase and Young, 2010, p. 352). They refer to pre-use expectations (before first usage) toward a technology which affect initial acceptance (Shi et al., 2010). In contrast, the gratifications-obtained are defined as “gratifications that audience members actually experience through the use of a particular medium” (Quan-Haase and Young, 2010, p. 352). Thus, they influence the users' affect toward a medium and thereby indirectly impact recurring behaviors (Ha et al., 2015). Since the scope of the current research is to explore the determinants of continuance intention, the emphasis is put on the gratifications-obtained from MSNSs rather than the gratifications-sought. Lo and Leung (2009) introduce another type of gratifications that is gratification-opportunities which are related to the attributes of the medium rather than the characteristics of the user. It results from the user's evaluation of the additional attributes of the new medium, in comparison to the old one. In the context of MSNSs, it reflects their ubiquitous nature, relative to SNSs and other media (Lo and Leung, 2009).

2.3. The person-environment fit model

The person-environment fit model is developed by French et al. (1982) and based on the assumption that an equilibrium exists between the individuals and their environments, that is the characteristics of the persons (in terms of their cognitive ability to efficiently process or receive a certain level of information) match the level of the stimulus received from the technology; in contrast, when a situation is out of equilibrium, that is the existence of a mismatch between the users' abilities and the received stimulus, it induces emotional exhaustion (Ayyagari et al., 2011). The latter refers to the negative emotional reaction that people experience as a consequence of aversive or constraining stimuli supplied by a technology (Hart and Cooper, 2001). A number of studies apply the person-environment fit model in the context of information systems related to the work settings (Ayyagari et al., 2011; Hung et al., 2015). However, it is seldom extended to voluntary use contexts (Maier et al., 2015). In addition, none of these studies incorporates them with the enablers of MSNSs, although they actually coexist (Dinev and Hart, 2006). Consequently, the current research will provide an enhanced comprehension of the phenomenon of continuance intention by including competing factors.

3. Research framework and hypotheses

Fig. 1 presents the research framework. The latter suggests that gratifications-obtained (escapism, information seeking, exhibitionism, voyeurism, and voluntarism) and gratification-opportunity (mobility) exert an influence on satisfaction (a positive emotional response). Besides, information overload and social overload induce MSNS emotional exhaustion (a negative emotional response). In turn, satisfaction and MSNS emotional exhaustion have a positive and negative impact on continuance intention (coping response), respectively.

3.1. Satisfaction

It is defined as the perceived degree of contentment with regard to a user's prior experience with a given MSNS (Ha et al., 2010). With the wide array of MSNSs (e.g., Facebook, Cyworld, and MySpace) and the empowerment of users, satisfaction emerges as a pivotal goal for their providers in order to maintain them and be competitive (Bhattacharjee, 2001). Indeed, satisfied users would have higher intentions to continue using MSNS (Bhattacharjee, 2001). Researchers provide empirical evidence for the impact of satisfaction on continuance intention (Lin et al., 2014). Hence, the following hypothesis is proposed:

H1. The higher the users' satisfaction, the higher their continuance intention.

3.2. Mobile social networking sites emotional exhaustion

Some researchers consider MSNSs as a double-edged sword (Koroleva et al., 2010). Although, they gratify the users' needs, they may cause emotional exhaustion that is reflected by negative feelings and reduction in interest (Ravindran et al., 2014). Given the MSNSs boom, the overexposure to stimuli, notifications and requests, and the increasing number of online friends embedded in the online networks (online friends), users will feel exhausted (Maier et al., 2015). This phenomenon is rarely addressed in the literature. Indeed, the vast majority of researchers focus on the motivational factors and pay little attention to the inhibitors that may hinder the continuance use of MSNSs. MSNSs emotional exhaustion refers to a person's aversive and involuntary emotional reaction to tiring situations associated with the use of MSNSs (Maier et al., 2015). When the users

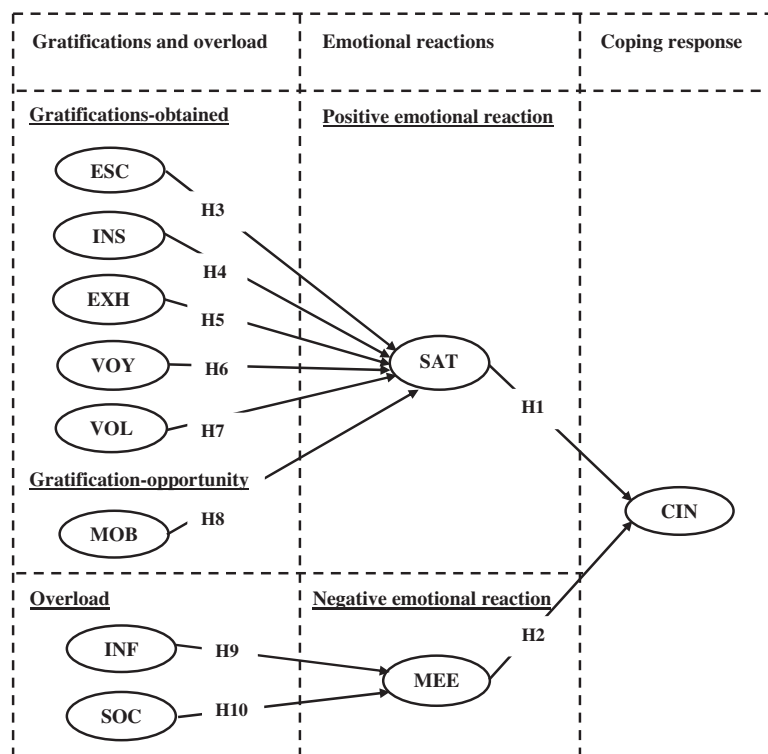


Fig. 1. Research framework. *Notes:* ESC: escapism gratification; INS: information seeking gratification; EXH: exhibitionism gratification; VOY: voyeurism gratification; VOL: voluntarism gratification; MOB: mobility gratification; SAT: satisfaction; MEE: MSNS emotional exhaustion; INF: information overload; SOC: social overload; CIN: continuance intention.

develop feelings of emotional exhaustion, they will avoid this uncomfortable and frustrating situation and thereby reduce their frequency of use and time spent on MSNs or more radically intend to discontinue using them (Maier et al., 2015). Thus, it negatively influences continuance intention. Researchers provide strong empirical evidence of the negative impact of MSNs exhaustion on continuance intention (Lee et al., 2016; Zhang et al., 2015). Hence, the following hypothesis is proposed:

H2. The higher the users' mobile social networking sites emotional exhaustion, the lower their continuous intentions.

3.3. Escapism gratification

Escapism is defined as “the users' motivation to ‘leave’ the reality in which they live in a cognitive and emotional way” (Verhagen et al., 2009, p. 4). The use of MSNs represents a gateway for persons that encounter unfavorable circumstances or routine (Henning and Vorderer, 2001). It is an avoidance coping mechanism which lessens aversive beliefs and feelings (e.g., anxiety) associated with problems of everyday life (Norton, 2012). Kashdan et al. (2006, p. 1301) consider it as a “self-protective strategy to prevent seemingly disastrous consequences”. Yee (2006) provides strong evidence that escapism temporarily prevent users from thinking to their problems, feelings of stress, and returning to routine. In addition, Leung and Zhang (2016) posit that persons who fail to manage their spare time tend to experience leisure boredom. Researchers demonstrate that MSNs are used as an arousing activity which allows to escape from boredom (Leung and Zhang, 2016; Xu et al., 2012). Accordingly, the present research holds that when MSNs gratify the escapism motivations, persons are more likely to be satisfied with their experience. Hence, the following hypothesis is proposed:

H3. The higher the users' escapism gratification, the higher their satisfaction.

3.4. Information seeking gratification

Information seeking reflects the “people's desire to increase awareness and knowledge of one's self, others, and the world” (Shao, 2009, p. 10). Papacharissi and Rubin (2000) argue that the Internet is a wide source of information. Shao (2009) finds that users are primarily motivated by searching for the information they need by viewing the content generated by others or asking them for a specific topic or question regarding a problem. Ko et al. (2005) empirically demonstrate that users, who satisfy their information needs, spend more time on websites. Accordingly, when individuals gratify their motives related to information seeking, they tend to be satisfied with MSNs. Hence, the following hypothesis is proposed:

H4. The higher the users' information seeking gratification, the higher their satisfaction.

3.5. Exhibitionism gratification

Exhibitionism has been associated with antisocial behaviors, that is “sexually aroused by exposing genitals to prepubertal children and to physically mature individuals” (American Psychiatric Association, 2013, p. 689). However, it is extended to drive other types of behaviors (that are no more considered as antisocial). In the context of MSNs, it refers to the self-disclosure of personal information (e.g., previous and current geolocalizations, level of studies, personal photos and videos, and hobbies) (Mäntymäki and Islam, 2014). Miura and Yamashita (2007) argue that it is advantageous to the mental well-being. They posit that a person that shares his/her experience and personal data allows him/her to further understand him/herself, reduce major problems and conflicts and thereby provide satisfaction. Users are highly motivated to disclosing their private information on MSNs (Mäntymäki and Islam, 2014). Accordingly, the current research suggests that when users gratify their needs to exhibit their personal data, they are more likely to be satisfied. Hence, the following hypothesis is proposed:

H5. The higher the users' exhibitionism gratification, the higher their satisfaction.

3.6. Voyeurism gratification

Voyeurism has long been exclusively treated as a motivation to deviant sexual behaviors (Mäntymäki and Islam, 2014). It has been related to the observation of “an unsuspecting person who is naked, disrobing, or engaged in sexual activity” (American Psychiatric Association, 2013, p. 687). However, Calvert (2009) posit that voyeurism drives other activities. Therefore, he defines it as “the consumption of revealing images of and information about others' apparently real and unguarded lives, often yet not always for purposes of entertainment but frequently at the expense of privacy and discourse, through the means of the mass media and Internet” (Calvert, 2009, p. 123). For example, the popularity of reality television and reality stars is driven by voyeurism (Patino et al., 2012; Tran and Strutton, 2014). Indeed, many persons are intrigued by the private lives of the protagonists of these programs. According to Mäntymäki and Islam (2014), persons scrutinize the private details

(e.g., photos and videos) of MSNS members (online friends or unknown members) because they are motivated by voyeurism. The latter is related to, beyond pleasure, the perception of power (watching without being watched and knowing others by observing their private information) and maximization of control (they do not need to interact with other members and build an online social capital to have an access to view personal information about other members) (Mäntymäki and Islam, 2014). Thus, MSNSs enable users to gratify their motivations to covertly watch others, and thereby they will form a desirable emotional reaction (satisfaction). Hence, the following hypothesis is proposed:

H6. The higher the users' voyeurism gratification, the higher their satisfaction.

3.7. Voluntarism gratification

Voluntarism is defined as “a form of unconditional kindness without the expectation of a return where an individual provides help and achieves a sense of satisfaction from the action” (Hung et al., 2011, p. 418). Kwok and Gao (2003) posit that altruism is a focal motivational factor that drives individuals to generate knowledge in the context of peer-to-peer communities. Chung et al. (2016) find that helping others strengthen the attachment of the members to their online communities. In the context of MSNSs, it results from a pro-community attitude and translates into the tendency of users to share information, provide their assistance, suggestions, recommendations, and advices, and offer the solutions to the problems and questions of other members of the online community, without expecting any recompense other than the joy of helping others (Ma and Chan, 2014). Hsu and Lin (2008) provides a strong support for the impact of voluntarism on affect. Thus, individuals that are driven by the gratification of voluntarism would be highly satisfied as they can help other members. Hence, the following hypothesis is proposed:

H7. The higher the users' voluntarism gratification, the higher their satisfaction.

3.8. Mobility gratification

Mobility is a gratification-opportunity that permits a spatial and temporal flexibility (Lo and Leung, 2009). Relative to other medium (e.g., radio, television, and even SNSs), mobility is an attribute that reflects the ubiquity of MSNSs. Indeed, persons can log into MSNSs with their mobile devices without constraints of time and place (Nikou and Bouwman, 2014). Mobility enhances the convenience of users (Ha et al., 2015) and thus MSNSs “become an integral part of people lives” (Nikou and Bouwman, 2014, p. 426). Ha et al. (2015) provide strong support for an impact of mobility on affect. Accordingly, users would be more satisfied when they can access MSNSs at anytime and in any place. Thus, mobility gratification is expected to exert an impact on satisfaction. Hence, the following hypothesis is proposed:

H8. The higher the users' mobility gratification, the higher their satisfaction.

3.9. Information overload

Individuals have a limited ability to store and process the flow of information in a limited period of time (Beaudoin, 2008). Processing the information needs resources (cognitive effort and time) (Chen et al., 2009). When the input increases, it requires more effort and time; once, it exceeds a certain level, users will be overloaded and lose control over the situation (Chen et al., 2009). The exceedance of this cognitive threshold refers to information overload and reflects a mismatch between the person's cognitive ability and the endless and *invasive* postings and activities on MSNSs (Lee et al., 2016). It is defined as “the state of an individual in which not all communication inputs can be processed and utilized, leading to breakdown” (Sicilia and Ruiz, 2010, p. 184). It will prevent from an efficient information processing because *too fast and too much information will act like noise* and thus users will be frustrated and overwhelmed (Edmunds and Morris, 2000; Koroleva et al., 2010). Consequently and in line with the person-environment fit model, information overload will induce MSNSs emotional exhaustion. Researchers provide empirical support for the role of information overload in developing MSNSs emotional exhaustion (Lee et al., 2016; Zhang et al., 2015). Hence, the following hypothesis is proposed:

H9. The higher the users' information overload, the higher their mobile social networking sites emotional exhaustion.

3.10. Social overload

With the expansion of MSNSs (in terms of the number of network externalities), users are overly exposed to a myriad of social support demands from other members. However, humans are cognitively able to simultaneously monitor a limited number of relationships (Dunbar, 1992). Once, the upper limit of group size is exceeded, the individuals have no more the capacity to manage them and thus the phenomenon of social overload emerges (Dunbar, 1992). Social overload describes “a situation when an individual perceives she is giving too much social support to other individuals embedded in her SNS”

(Maier et al., 2015, p. 449). With respect to the context of MSNSs, the enlargement of the users' networks (number of online friends to deal with) and plethora of online requests (responding to friends messages, amusing them, and commenting their postings) will be difficult to handle and beyond the user's control (Zhang et al., 2015). The users will be burdened and overwhelmed. Thus, they will be emotionally tired of using MSNSs (Maier et al., 2015). In other words, they will develop MSNS emotional exhaustion in response to this undesirable situation (Maier et al., 2015). Researchers provide empirical support for the impact of social overload in developing MSNSs emotional exhaustion (Maier et al., 2015; Zhang et al., 2015). Hence, the following hypothesis is proposed:

H10. The higher users' social overload, the higher their mobile social networking sites emotional exhaustion.

4. Method

4.1. Measures

All constructs are adapted from and measured using items well-validated in prior studies. Satisfaction is measured with a seven-point semantic differential scale. All the responses to the remaining items are recorded on a seven-point Likert scale ranging from "strongly disagree" to "strongly agree". Table 1 displays the items and their sources.

First, the items are originally designed in English. Then, they are translated into French and finally back translated into English by certified translators and university professors of information systems, in order to insure the accuracy and content validity of the French version of the questionnaire, as recommended by Oliveira et al. (2014). No adjustments are made as the two versions are considerably similar.

4.2. Data collection and sample

The present research uses mobile Facebook as an example of MSNSs. Indeed, Facebook is one of the most popular applications in the world (Huang et al., 2014). In 2014, France is among the leading countries regarding the number of Facebook users with 22.4 million (Statistica, 2015a). In addition, the number of mobile Facebook users is about 14 million in 2013 and is expected to reach more than 19.5 million in 2018 (Statistica, 2015a,b). Thus, the selection of France is appropriate.

30 university students who are users of mobile Facebook participate to a pilot study. The latter demonstrates the reliability and validity of the items. These respondents are not enrolled in the main survey.

The main data is collected using undergraduate students from March to May 2015. The present research selects university students as they are active and regular users of MSNSs and represent the majority of mobile Facebook users (Chen, 2013). The participation to the study is voluntary and no material incentives are given. A total of 950 questionnaires are distributed. 581 are returned complete. The participants, who have not responded to the questionnaires after 2 weeks, have received follow-up e-mails. 148 questionnaires are obtained. Thus, the total number of usable responses reaches 729.

First, the present research checks the issue of nonresponse bias. It uses the Kolmogorov-Smirnov test to compare the sample distributions of the early and late respondents' groups, as recommended by Martins et al. (2014). There is nonsignificant statistical difference between the two groups of respondents. Thus, nonresponse bias is not a serious problem in the present research. Furthermore, it examines the common method bias by using two well-established techniques that are the Harman's one-factor test (Podsakoff et al., 2003) and the marker variable technique (Lindell and Whitney, 2001). The results of the latter method show the absence of significant correlations between the marker variable and the variables of the research framework ($r_1 = 0.05$, $p = 0.73$; $r_2 = 0.13$, $p = 0.29$; $r_3 = 0.07$, $p = 0.26$; $r_4 = 0.03$, $p = 0.12$; $r_5 = 0.16$, $p = 0.57$; $r_6 = 0.20$, $p = 0.21$; $r_7 = 0.09$, $p = 0.46$; $r_8 = 0.03$, $p = 0.33$; $r_9 = 0.07$, $p = 0.45$; $r_{10} = 0.08$, $p = 0.72$; $r_{11} = 0.02$, $p = 0.71$; respectively with escapism, information seeking, exhibitionism, voyeurism, voluntarism, and mobility gratifications, satisfaction, MSNS emotional exhaustion, information overload, social overload, and continuance intention. The former technique (the Harman's one-factor test) indicates that the majority of the variance is not accounted for by one factor (Podsakoff et al., 2003). Thus, the present research does not detect issues of common method bias.

With respect to the demographic profile of the sample, the current research finds that 52.43% of the respondents are females and 47.57% are males with an average age of 18.74. 75.48% have joined Facebook for more than 3 years, 16.10% from 1 to 3 years, and 8.42% for less than 1 year. 42.70% are freshmen, 29.68% are sophomores, and 27.62% are juniors. 62.18% use mobile Facebook every day, 17.13% from 3 to 6 days a week, and 20.67% from 1 to 2 days a week. 49.33% have more than 200 friends on Facebook, 37.81% between 100 and 199, and 12.85% less than 100.

5. Data analysis and results

The present research uses SmartPLS 2.0 M3 as a structural equation modeling technique (Ringle et al., 2005). It does not have restrictions regarding the size of the sample and normality of the distribution relative to other methods (Hair et al., 2014; Hartmann et al., 2015). First it evaluates the quality of the measurement model, then, it assesses the structural model.

Table 2 shows that the loadings range from 0.81 to 0.92. They are higher than the threshold of 0.7 and statistically significant ($p < 0.05$). In addition, the Cronbach's Alphas (CA) are above 0.708 and composite reliabilities (CR) are greater than

Table 1
Items.

Constructs	Items	Sources
Escapism gratification	ESC1: Mobile Facebook allows me to get away from what I am doing ESC2: Mobile Facebook allows me to forget about my problems ESC3: Mobile Facebook allows me to get away from pressures ESC4: Mobile Facebook allows me to relieve boredom	Xu et al. (2012)
Information seeking gratification	INS1: Mobile Facebook allows me to understand events that are happening INS2: Mobile Facebook allows me to find out what is going on in society INS3: Mobile Facebook allows me to broaden my knowledge base	Leung and Zhang (2016)
Exhibitionism gratification	EXH1: Mobile Facebook allows me to be the center of attention EXH2: Mobile Facebook allows me to show off if I get the chance EXH3: Mobile Facebook makes me upset when people don't comment/put a "like" on my posts* EXH4: Mobile Facebook puts me in a bad mood if people don't comment/put a "like" on my posts*	Mäntymäki and Islam (2014)
Voyeurism gratification	VOY1: Mobile Facebook allows me to get a peek into other's private moments VOY2: Mobile Facebook allows me to get access to others's profiles when they are unaware VOY3: Mobile Facebook allows me to get access to other people's information VOY4: Mobile Facebook allows me to access people's information when they are unaware VOY5: Mobile Facebook allows me to view others' photos no matter if I know them or not VOY6: Mobile Facebook allows me to watch people when they don't know that they are being watched	Mäntymäki and Islam (2014)
Voluntarism gratification	VOL1: Mobile Facebook allows me to assist members in finding solutions to their problems VOL2: Mobile Facebook allows me to work together with others VOL3: Mobile Facebook allows me to make useful contributions	Mathwick et al. (2008)
Mobility gratification	MOB1: Mobile Facebook allows me to keep in touch everywhere I am MOB2: Mobile Facebook allows me to keep in touch with my friends no matter where I am MOB3: Mobile Facebook allows me to keep in touch with my friends no matter what time it is	Nikou and Bouwman (2014)
Satisfaction	My overall experience of using mobile Facebook is: SAT1: Extremely dissatisfactory/Extremely satisfactory SAT2: Extremely unpleasant/Extremely pleasant SAT3: Extremely frustrating/Extremely enjoyable SAT4: Absolutely terrible/ Absolutely delightful	Shi et al. (2010)
MSNS emotional exhaustion	MEE1: I feel drained from activities that require me to use mobile Facebook MEE2: I feel tired from my mobile Facebook activities MEE3: Using mobile Facebook is a strain for me MEE4: I feel burned out from my mobile Facebook activities	Maier et al. (2015)
Information overload	INF1: I am often distracted by the excessive amount of information available in mobile facebook INF2: I find that I am overwhelmed by the amount of information I have to process on a daily basis in mobile facebook INF3: I feel some problems with too much information in mobile Facebook to synthesize instead of not having enough information	Lee et al. (2016)
Social overload	SOC1: I take too much care of my friends' well-being on mobile Facebook SOC2: I deal too much with my friends' problems on mobile Facebook SOC3: My sense of being responsible for how much fun my friends have on mobile Facebook is too strong SOC4: I am too often caring for my friends on mobile Facebook SOC5: I pay too much attention to posts of my friends on mobile Facebook SOC6: I congratulate mobile Facebook friends as a consequence of the birthday reminder, although I would not congratulate them in real life	Maier et al. (2015)
Continuance intention	CIN1: I intend to continue using mobile Facebook rather than discontinue their use CIN2: My intentions are to continue using mobile Facebook than use any alternative means CIN3: If I could, I would like to discontinue my use of mobile Facebook*	Kang et al. (2013).

* Reverse coded.

0.7. This result reflects internal consistency reliability (Hair et al., 2014; Henseler et al., 2009; Oliveira et al., 2014). Moreover, the average variance extracted (AVE) for each construct is greater than the threshold of 0.5 which demonstrates convergent validity for all the constructs (Hair et al., 2014). Furthermore, the square root of the AVE of each construct is greater than the inter-construct correlations revealing discriminant validity between the variables (as seen in Table 3), in line with the Fornell–Larcker criterion (Fornell and Larcker, 1981).

The next step is to assess the structural model. First, the present research examines the structural model for collinearity, in line with Hair et al. (2014). The collinearity diagnostic shows that the values of the variance inflation factor (VIF) of the independent variables are well below the threshold of 5 (between 1.26 and 3.91). Thus, there is not a problem for multicollinearity.

Table 2Loadings, *t*-statistics, Cronbach's alphas, composite reliability, and average variance extracted.

Constructs	Items	Loadings	<i>t</i> -Statistics	CA	CR	AVE
ESC	ESC1	0.81	17.27	0.90	0.93	0.79
	ESC2	0.92	19.87			
	ESC3	0.89	18.79			
	ESC4	0.83	17.42			
INS	INS1	0.85	14.45	0.88	0.91	0.72
	INS2	0.86	14.72			
	INS3	0.83	12.91			
EXH	EXH1	0.84	15.57	0.88	0.91	0.74
	EXH2	0.86	16.82			
	EXH3	0.91	19.67			
	EXH4	0.83	15.06			
VOY	VOY1	0.85	18.33	0.87	0.90	0.75
	VOY2	0.81	15.29			
	VOY3	0.88	22.54			
	VOY4	0.85	17.98			
	VOY5	0.81	16.36			
	VOY6	0.82	15.80			
VOL	VOL1	0.90	18.09	0.89	0.92	0.74
	VOL2	0.91	20.98			
	VOL3	0.86	16.35			
MOB	MOB1	0.85	04.62	0.85	0.88	0.72
	MOB2	0.86	07.28			
	MOB3	0.84	06.09			
SAT	SAT1	0.91	15.68	0.87	0.90	0.76
	SAT2	0.89	14.01			
	SAT3	0.84	13.36			
	SAT4	0.90	14.57			
MEE	MEE1	0.92	34.18	0.86	0.89	0.77
	MEE2	0.90	32.56			
	MEE3	0.91	33.69			
	MEE4	0.88	31.37			
INF	INF1	0.87	29.75	0.88	0.91	0.79
	INF2	0.85	23.19			
	INF3	0.89	32.73			
SOC	SOC1	0.91	29.43	0.84	0.87	0.75
	SOC2	0.89	17.55			
	SOC3	0.90	27.17			
	SOC4	0.88	11.89			
	SOC5	0.92	37.66			
	SOC6	0.86	07.11			
CIN	CIN1	0.85	19.09	0.90	0.93	0.77
	CIN2	0.86	19.22			
	CIN3	0.85	19.14			

Notes: ESC: escapism gratification; INS: information seeking gratification; EXH: exhibitionism gratification; VOY: voyeurism gratification; VOL: voluntarism gratification; MOB: mobility gratification; SAT: satisfaction; MEE: MSNS emotional exhaustion; INF: information overload; SOC: social overload; CIN: continuance intention.

Fig. 2 displays the results of the structural model. The model explains 65.2% of the variance in continuance intention. Satisfaction has a positive impact on the dependent variable ($\beta_{\text{SAT}} = 0.36, p < .001$), thus H1 is supported. MSNS emotional exhaustion has a negative impact on continuance intention ($\beta_{\text{MEE}} = -0.19, p < .01$). In addition, it explains 69.4% of the variance in satisfaction. Escapism, exhibitionism, voyeurism, voluntarism, and mobility gratifications have positive and significant effects on satisfaction ($\beta_{\text{ESC}} = 0.37, p < 0.001$; $\beta_{\text{EXH}} = 0.19, p < 0.05$; $\beta_{\text{VOY}} = 0.24, p < 0.05$; and $\beta_{\text{VOL}} = 0.18, p < 0.05$; $\beta_{\text{MOB}} = 0.34, p < 0.001$; respectively). Thus, H3, H5, H6, H7, and H8 are supported. However, H4 is not supported because the information seeking gratification does not have an impact on satisfaction ($\beta_{\text{INS}} = 0.08$, nonsignificant). Furthermore, both information overload and social overload explain 58.6% of the variance in MSNS emotional exhaustion, with path coefficients of 0.33 ($p < .01$) and 0.27 ($p < .01$), respectively. Thus, H9 and H10 are supported.

6. Discussion, implications, and limitations

First, satisfaction is found to be a strong trigger of continuance intention, in accordance with previous research (Lin et al., 2014). Consequently, satisfied users are likely to continue using MSNSs. However, MSNS emotional exhaustion jeopardizes

Table 3
Discriminant validity.

	ESC	INS	EXH	VOY	VOL	MOB	SAT	MEE	INF	SOC	CIN
ESC	0.89										
INS	0.06	0.85									
EXH	0.42	0.07	0.86								
VOY	0.17	0.11	0.45	0.87							
VOL	0.51	0.09	0.34	0.31	0.86						
MOB	0.39	0.13	0.57	0.48	0.51	0.85					
SAT	0.56	0.08	0.34	0.39	0.32	0.49	0.87				
MEE	−0.16	0.03	−0.19	−0.11	0.03	−0.14	−0.30	0.87			
INF	−0.07	0.09	−0.09	−0.12	−0.05	−0.21	−0.35	0.45	0.88		
SOC	−0.15	0.05	−0.14	−0.09	−0.23	−0.15	−0.29	0.39	0.37	0.86	
CIN	0.64	0.16	0.42	0.54	0.33	0.57	0.67	−0.53	−0.47	−0.35	0.87

Notes: Diagonal elements (bolded values) are the square root of AVEs. Off-diagonal values are the correlations between latent variables. ESC: escapism gratification; INS: information seeking gratification; EXH: exhibitionism gratification; VOY: voyeurism gratification; VOL: voluntarism gratification; MOB: mobility gratification; SAT: satisfaction; MEE: MSNS emotional exhaustion; INF: information overload; SOC: social overload; CIN: continuance intention.

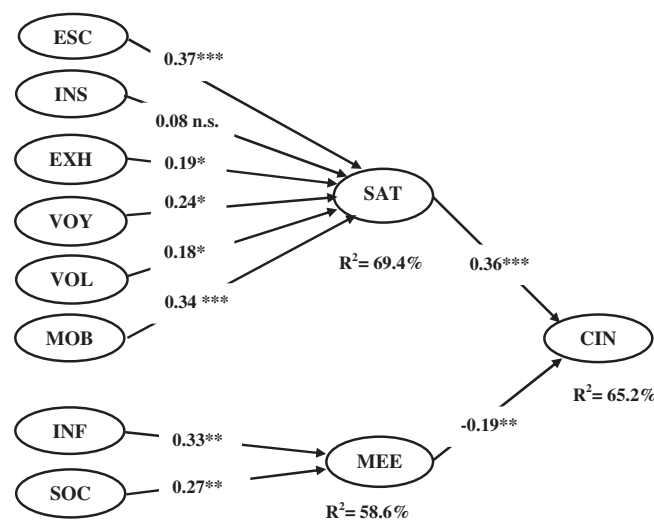


Fig. 2. Structural model with path coefficients and R^2 . Notes: * $p < .05$; ** $p < .01$; *** $p < .001$; n.s.: nonsignificant; ESC: escapism gratification; INS: information seeking gratification; EXH: exhibitionism gratification; VOY: voyeurism gratification; VOL: voluntarism gratification; MOB: mobility gratification; SAT: satisfaction; MEE: MSNS emotional exhaustion; INF: information overload; SOC: social overload; CIN: continuance intention.

intention, confirming prior studies (Zhang et al., 2015). This result supports the research's argument that users who are emotionally exhausted are more likely to lessen their continuance intention. With respect to the antecedents of satisfaction, escapism gratification strongly determines its higher levels, which corroborates prior research (Ha et al., 2015). Thus, persons use MSNSs as a means to relax and gateway to escape from their problems, responsibilities, and routine of daily life. Surprisingly, information seeking gratification, which reflects the instrumental use of MSNSs, does not determine satisfaction. This result means that users are not concerned with the informativeness of the medium. It bears out previous studies (Ha et al., 2015) and can be attributable to the tininess of the screens of mobile devices which may hinder a convenient and effective searching for information. The persons can gratify their needs for information seeking using other tools with larger screens such as laptops and personal computers connected to the Internet. In addition, the excessive presence of rumors and the dissemination of false information in MSNSs, in comparison to other applications such as mobile Wikipedia, may undermine their credibility and thereby could explain this lack of impact (Marett and Joshi, 2009). In addition, the current research finds that exhibitionism gratification exerts a significant impact on continuance intention, in line with previous literature (Hsu and Lin, 2008; Malik et al., 2016). Thus, individuals are driven by the needs to disclose sensitive information about themselves and share their reflections and interests with other members. This phenomenon refers to the privacy paradox which argues that individuals display their personal data despite the resulting privacy risk issues (Dinev and Hart, 2006; Malik et al., 2016). In addition, the present research provides empirical support for the impact of voyeurism gratification on satisfaction. Thus, users are tempted by visiting the profiles and seeing the information of other members without their prior consents. Voluntarism is found to have a significant effect on satisfaction. This result confirms previous studies (Hsu and Lin, 2008). It could be inferred that individuals have serious concerns about the welfare of other members and seek to assist them. The present research finds that mobility gratification exerts an effect on satisfaction, in line with Ha et al.

(2015). This results means that users are satisfied when they can access MSNSs without restrictions on time and place. Indeed, temporal and spatial flexibility (gratification-opportunities) represents the key difference between MSNSs and SNSs. The findings also demonstrate that both information overload and social overload emerge as antecedents of MSNSs emotional exhaustion, which corroborates prior research (Maier et al., 2015; Zhang et al., 2015). This result demonstrates that the overexposure to huge amount of information and online social requests induce higher emotional exhaustion.

From a theoretical perspective, the current research goes a step further by proposing a new approach to study the enablers and inhibitors of the phenomenon of MSNSs continuance intention. From a practical perspective, it provides insightful recommendations to MSNSs providers.

The present research aims at gaining insights into the mechanisms underlying MSNSs continuance intention. It contributes to the body of knowledge by opening a new avenue for research and adopting a unified view. Indeed, it is the first study to integrate the Bagozzi self-regulation framework, uses and gratifications theory, and the person-environment fit model, to the best of the author's knowledge. These lines of research provide an in-depth understanding of the phenomenon. First, it uses the Bagozzi self-regulation framework as the overarching theoretical basis for the research model. In addition, it integrates the uses and gratifications theory in order to highlight the roles of gratifications-obtained (escapism, exhibitionism, voyeurism, and voluntarism gratifications) and the gratification-opportunity (mobility gratification) as antecedents of satisfaction. The latter is the positive emotional reaction which shapes MSNSs continuance intention.

Another considerable contribution of the current study is in the incorporation of the person-environment fit model. Few researchers focus on the overload phenomenon as a stressor in the work settings (Ayyagari et al., 2011), far fewer explore it in the context of voluntary usage such as MSNSs (Maier et al., 2015). Beyond the enablers, the present research addresses the roles of information overload and social overload in generating MSNS emotional exhaustion which negatively affects continuance intention. Consequently, it underscores this paradoxical finding. On the one hand, MSNSs facilitate the diffusion of the information and expansion of the users' networks of acquaintances, but on the other hand, they allow the overexposure to too much information and online social requests (when they exceed a certain threshold) that put the user in uncomfortable situation.

Nowadays, persons are confronted with a myriad of MSNSs. In addition, it is easy to switch between them. The latter situation creates a fierce competitive environment between providers of these services (Lin et al., 2014). Thus, they should understand the factors that affect continuance intention in order to adjust the functionalities and features offered by MSNSs and thereby gain a competitive edge (Xu et al., 2014). The results show that continuance intention is positively influenced by satisfaction and negatively affected by MSNSs emotional exhaustion. The gratifications-obtained regarding escapism, exhibitionism, voyeurism, and voluntarism, and mobility engender high levels of satisfaction. In contrast, information overload and social overload trigger MSNSs emotional exhaustion. Thus, MSNSs providers should design platforms in a way that best serves the goal of gratifying the motivations of persons in order to increase satisfaction and filtering the information received and online social requests to reduce emotional exhaustion.

First, MSNSs providers should develop entertaining and user-friendly platforms in order to help users escape from problems and routine of everyday life. They could give users the opportunity to personalize the user interfaces and messages (e.g., animated background and talking emoticons). In addition, they could design funny and interactive gamified applications in order to make the experience more pleasant and captivating.

Second, they should stimulate users to actively participate in information sharing. For example, they could encourage users to complete and update their profiles (with a detailed self-description, photos and videos). Furthermore, they could make more visible the profiles of active users and the most popular postings. In addition, they can provide applications that modify and add effects to photos and videos (such as cartoon, special, and slow motion effects).

Then, they should explicitly encourage users to assist others with information and knowledge contributions. They should remind users of the benefits from helping other members and make this experience more enjoyable (Chung et al., 2016), such as electing the altruistic users and sending musical animated messages of thankfulness and gratefulness to them. Furthermore, they should design interfaces that fit the screens of the handheld devices and enhance the convenience of users.

With respect to information overload and social overload, MSNSs providers are confronted with the dilemma of finding the right dosage between the human capacity for simultaneous information processing and the mass of data and online social requests supplied by MSNSs (Maier et al., 2015). MSNSs could remedy the phenomenon of overload by using filtering mechanisms that allow categorization of the content of the information into themes. They could retain the areas of interests which are previously selected by users. In addition, they should develop functionalities and features embedded in the platform in order to help users in managing their networks and online social requests. For example, they could propose tools to classify and categorize friends and groups into sublists, automatically respond to common requests such as "likes", and send pre-established congratulatory messages and online greeting cards.

The findings should be interpreted with caution. The current research includes continuous intention as the dependent variable. Thus, work needs to be extended to adopt a longitudinal approach and track the users' recurring behavior in order to get a fuller comprehension of MSNS continuance usage. In addition, the survey is conducted in France which raises concerns about the generalizability of the findings to other countries. It would be desirable to identify the similarities and differences across cultures.

Further research avenues remains to be done. Academia should conduct comparative studies between different MSNSs because they have different features and functionalities, as well as purposes and audiences (general population or specific aim/audience). For example, mobile Facebook is a general MSNS which allows instant messaging, and photo and video

sharings, while Doximity is a physicians-centric mobile professional networking site. Furthermore, It would be interesting if researchers explore why some MSNSs are very popular in some countries such as Orkut in Brazil and India and Cyworld in Korea. Moreover, future research should include other factors that can affect negative emotional response, such as inadequate quality of mobile Internet connexion. In many countries, MSNSs users are confronted with frequent mobile Internet failures or partial geographical coverage, and thus, they would feel emotionally exhausted.

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