Received: 15 April 2021 | Accepted: 24 October 2021

DOI: 10.1002/mar.21611

RESEARCH ARTICLE

Psychology & Marketing WILEY

Fear of missing out in the digital age: The role of social media satisfaction and advertising engagement

My (Myla) Bui[1] | Anjala S. Krishen[2] | Eda Anlamlier[2] | Orie Berezan[3]

[1]Department of Marketing and Business Law, Loyola Marymount University, Los Angeles, California, USA

[2]Marketing and International Business, University of Nevada Las Vegas Lee Business School, Las Vegas, Nevada, USA

[3]Department of Management and Marketing, College of Business Administration and Public Policy, California State University, Dominguez Hills, Carson, California, USA

Correspondence
My (Myla) Bui, Department of Marketing and Business Law, Loyola Marymount University, 1 LMU Dr, MS 8385, Los Angeles, CA 90045, USA.
Email: mbui@lmu.edu

Abstract

We explore the benefits and costs of social networking usage and examine the roles of need to belong and autonomy to contextualize the fear of missing out (FoMO) socio-cultural phenomenon in the digital age. We utilize a self-determination theory-based framework for understanding how the FoMO phenomenon influences positive (negative) mood, information overload, social media satisfaction, and engagement with social media advertising. Study 1 explores how FoMO relates to positive mood through the need to belong. Study 2 demonstrates how FoMO impacts information overload through the mediation of social media interactivity. Furthermore, Study 2 shows how FoMO alters social media satisfaction, and this relationship is mediated by information overload and moderated by autonomy. Study 3 shows that negative emotions serve to mediate the effect of information overload on engagement with social media advertising. Finally, we discuss implications of this study to provide insight into how brand marketers can offer FoMO-reducing mechanisms to consumers to ensure a high level of advertising engagement, how health advocates can leverage social media to promote meaningful engagement with consumers, and how industry practitioners may want to consider aspirational virtual events to create buzz while also satisfying consumers' need to belong to social groups.

KEYWORDS

digital age, digital marketing, fear of missing out (FoMO), information overload, social media action, social media satisfaction, social networking

Sam is scrolling social media at home on a weekend night. After seeing other people engaging in various social activities, Sam feels disconnected and deflated. To alleviate this negative mood, Sam spends more time on social media connecting to followers. Although spending time on social media boosts Sam's interactivity, it also increases information overload and reduces social media satisfaction. Whenever the information on social media is overwhelming, Sam experiences mood changes and is less likely to pay attention to social media advertisements. In our research, we examine whether fear of missing out (FoMO) motivates users to interact more on social media but also impacts their affective state, information overload, and social media satisfaction. Furthermore, we inspect how information overload influences consumers' engagement with social media advertisements. FoMO and the resulting emotional and cognitive states have the potential to provide valuable information on consumers' social media consumption and social media advertising success.

Social interactions and relationships have evolved from traditional physical environments to include digital platforms and virtual experiences affecting interactions on the seller, retailer, and consumer levels (Dutot, 2020; Obeidat et al., 2017). Furthermore, research examines the motivations for and success of social networking to determine influences of social capital on the adaptive nature of social networking usage (Krishen et al., 2019; Krishen, Berezan, et al., 2019). Between 2013 and 2021, the number of US-based marketers using social media marketing grew from 86.2% to 91.9% (Statista, 2021a, 2021b). By 2022, an estimated 56 billion dollars will

likely be spent by advertisers through social media marketing efforts (Statista, 2021a, 2021b). As such, using digital social networking technologies has emerged as a common part of life in the 21st century. Through such technological advances, consumers face an adaptation process that requires adjusting to virtual social spaces (Bui & Namin, 2019). The need to connect with others in these virtual environments can produce the feeling that those people may be having better experiences; this phenomenon is known as the FoMO (Przybylski et al., 2013).

While the engagement of social networking allows individuals and communities to come together to form meaningful connections, recent research suggests that individuals experience both benefits and costs from its use, including relatedness, autonomy, loneliness, social isolation, and addiction (Oberst et al., 2017). At an industry level, digital technologies including social media are leading to disruption of the healthcare sector (Bui & Namin, 2019). Meanwhile, at the government and public policy level, consumer information collected and stored with digital technology has recently catapulted into one of the most important socio-political issues of the 21st century (Petrescu et al., 2020). Importantly, the negative effects of social networking may discourage users from paying attention to advertising messages on social media, thereby decreasing the effectiveness of marketing communications.

Conversely, research findings also suggest that certain demographics and generations, namely adolescents and millennials, may experience differential positive and negative impacts from social media usage (Krishen et al., 2016; Reich et al., 2012). For example, Beyens et al. (2016) indicate that adolescents' desire to belong and need for popularity elevate FoMO due to increases in social media usage. Therefore, the need to belong becomes associated with individual-level self-identity and self-esteem. Interestingly, negative collective self-esteem can also be associated with high social media usage as a way of social compensation and social identity gratification (Barker, 2009). Furthermore, social anxiety and discontent with peer interactions are positively related to internet usage (Liu & Kuo, 2007).

To address these issues, research examining the social and cultural phenomena which contribute to the disruption of digital technology on humanity is warranted. It is projected that mental health issues such as anxiety and other related illnesses will cost the global economy $16 trillion by 2030 (Fleming, 2019). Thus, the present research contributes to an understanding of individual connection in the digital age that can potentially help consumers, health advocates and industry leaders become more equipped at managing mood, information overload, and satisfaction levels influenced by FoMO. Furthermore, marketers can establish better relationships with consumers through social media advertising when they are in better moods and have more mental capacity to process information. Recent research focuses more on the individual-level antecedents and consequences of FoMO to determine its adaptive versus maladaptive nature. To date, sparse studies examine how individual-level need to belong and autonomy relate to overall well-being through positive mood, cognitive and information load, and social media satisfaction as they interact and relate to FoMO. As such, the purpose of this study is to build upon previous literature suggesting interactive effects of FoMO by individual orientation of belonging and autonomy on emotion (i.e., positive mood), cognition (information overload), and its impact on satisfaction (i.e., in the social media setting) and social media engagement (i.e., clicks, shares, and comments). In this study, we further examine these potential boundary conditions and mediating factors within the FoMO framework.

Specifically, in the present research, we seek to contribute to the literature by understanding the benefits and problems of using social media through its linkages and relational contexts. To do so, we conduct quantitative studies with the aim of determining the process by which FoMO functions in relation to positive (negative) mood, information overload, social media satisfaction, and engagement with social media advertising. Based upon the tenets of self-determination theory (SDT; Ryan & Deci, 2000), we propose a model for how the FoMO phenomenon contributes to positive (negative) mood, information overload, social media satisfaction, and social media engagement while considering its process and boundary conditions. Finally, we provide implications for marketers, health advocates, and consumers.

1 | THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

SDT posits that to optimize well-being, fundamental psychological needs must be satisfied (Ryan & Deci, 2000). These needs consist of three basic SDT components: autonomy, competence, and relatedness. For this study, we capture the relatedness component of SDT through the need to belong construct, while the autonomy construct is directly adapted. Additionally, psychological motivations are consistent with furthering our understanding of how social networking experiences and activities affect overall mood, cognition (i.e., information overload), and social media satisfaction. Psychological needs and FoMO play a significant role in explaining consumer well-being in the social media experiential environment (Przybylski et al., 2013).

1.1 | Fear of missing out

FoMO occurs when people feel that they are not able to experience what others are engaging in, particularly when others' experiences are believed to be better than one's own experiences (Przybylski et al., 2013). FoMO can be triggered when basic psychological needs are not filled such as when individuals have low social capital (Xie et al., 2018), and/or low self-esteem (Buglass et al., 2017; Przybylski et al., 2013). Such psychological needs can be partially fulfilled via social media consumption. Interestingly, however, research shows that high levels of social media usage can lead to high levels of FoMO (Buglass et al., 2017). These findings suggest a cyclical pattern between experiencing FoMO and spending time on social media.

According to SDT, the need to belong (relatedness) is fundamental to the human social experience and overall sense of

well-being. Individuals strive to fulfill this need by participating in social groups (Seraj, 2012). When the need to belong is not met, feelings of anxiety brought on by not being part of a satisfying social experience can develop. However, it is important to note that the physical world and the virtual world are not separate from one another. Rather, one's virtual life (digital self) is an extension of who they are in the physical world. The interplay of these two worlds can facilitate feelings of anxiety that result from FoMO, or social exclusion, and affect one's everyday real life (Clayton et al., 2015).

1.2 | Need to belong and mood

Due to FoMO, an individual's need to stay connected can lead to increased and potentially problematic engagement on social media networks (Alt, 2015). Research shows that higher levels of FoMO due to social comparison can result in increased social media networking engagement and thereby lower mood in general (Twenge, Joiner, et al., 2018; Twenge, Martin, et al., 2018). Symptoms of negative mood can include low self-esteem, worrying, tiredness, frustration, and sadness (National Health Services, 2018). In essence, when people are socially excluded, opportunities for negative emotions can arise, which can include byproducts of frustration, stress, and anxiety. The social buffering hypothesis suggests that individuals with a greater need to belong experience higher levels of stress in social situations wherein they do not feel supported (are socially excluded, such as when FoMO is experienced; Cohen & Wills, 1985). Figure 1 shows our proposed hypothesis:

H1: *Need to belong will moderate the effect of fear of missing out (FoMO) on positive mood. People with low (high) need for belonging and a high level of FoMO will report higher (lower) positive mood.*

1.3 | Social media interactivity and information overload

Research shows that the need to belong positively relates to the level of FoMO (Beyens et al., 2016; Wang et al., 2018). In addition, Wang et al. (2018) indicate that increases in FoMO relate to higher levels of authentic self-presentation. Self-presentation on social media requires immersion, involvement, and interactivity; thus, FoMO will likely lead to an increase in social media interactivity. Cognitive load theory argues that individuals have limited information processing capabilities, identifying germane, intrinsic, and extraneous as the three types of load (Sweller, 1988). Presented in the realm of decision-making, information overload is a phenomenon wherein consumers experience cognitive load due to finite capacity and are unable to process information efficiently and effectively (Malhotra, 1984). Information overload is defined as a condition that occurs when individuals feel confused, have lower recall, make worse decisions, experience lower performance, and/or encounter stress or anxiety due to too much information (Eppler & Mengis, 2004).

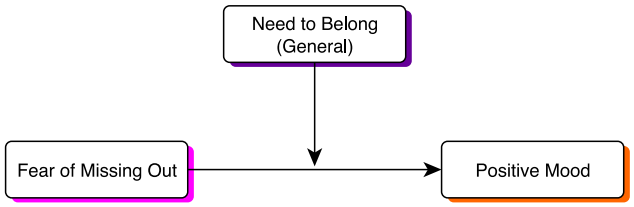

FIGURE 1 Conceptual model of Study 1

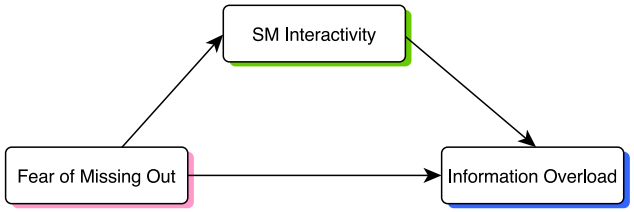

FIGURE 2 Conceptual model of Study 2 Part A

In its original definition, element interactivity applies to task connectedness or the way that various elements of a set of tasks rely on other elements to be successfully completed (Sweller, 1994). Whereas low element interactivity tasks can be performed with very few elements or in isolation, high element interactivity tasks require the simultaneous knowledge of a large quantity of elements. In the realm of digital marketing and social networking, interactivity is characterized by consensual validation, influential ability, and group involvement, all of which require effort (McMillan & Chavis, 1986). Given that a high level of interactivity is a core goal in social networking, it may expose users to a high volume of information about others. Thus, when individuals increase their interactivity on social media by deepening their involvement and increasing their influence, they, in turn, may experience information overload (Figure 2). As such, we hypothesize:

H2: *Social media interactivity will mediate the effect of fear of missing out (FoMO) on information overload on social media. Specifically, as FoMO increases, social media interactivity will increase. And, as social media interactivity increases, information overload will increase.*

1.4 | Autonomy and social media satisfaction

Research in decision making, especially in online environments shows that when decisions are perceived to be difficult, information overload can lead to lower decision satisfaction (Hu & Krishen, 2019). Information load or overload is also associated with lower decision quality, efficiency, accuracy, satisfaction, and emotional well-being (Li, 2016). Cognitive control theory claims that individuals feel more in control (and therefore have high levels of autonomy) when they are provided with large amounts of information (Averill, 1973). However, when the information exceeds a manageable level, we can surmise that they will experience information

overload. Hence, we hypothesize that FoMO will decrease social media satisfaction through information overload.

H3: *Information overload on social media will mediate the effect of fear of missing out (FoMO) on social media satisfaction. Specifically, as FoMO increases, information overload on social media will increase. Additionally, as information overload on social media increases, social media satisfaction will decrease.*

We also predict that the degree to which individuals perceive themselves as autonomous on social media may have an effect on their reaction to FoMO. After experiencing FoMO, users with high autonomy may expose themselves to more information on social media than people with low autonomy to prove that they are not impacted by other users. Given that social media can be viewed as a medium where users can present themselves in more authentic ways than in offline contexts (Blackwood, 2019; Toffoletti & Thorpe, 2018), users with high autonomy may feel the need to receive loads of information to make sure that their own communication is authentic. Thus, we expect that autonomy might boost the effect of FoMO on information overload (Figure 3):

H3a: *Autonomy will moderate the effect of fear of missing out (FoMO) on information overload whereby when FoMO is high, people with high (low) autonomy will report more (less) information overload.*

1.5 | Negative emotions and social media action

In the context of social media interaction, Xie and Tsai (2021) find that information overload can lead to social media fatigue, emotional exhaustion, and social media discontinuance. Thus, a high level of information overload can also decrease social media satisfaction. However, the relationship between information overload and engagement with social media advertising requires further interrogation. Not only does information overload cause a host of negative emotions, including frustration, anger, and stress, it also leads to changes in decision making (Iyengar & Lepper, 2000). For example, Yuksel et al. (2020) indicate that information-overloaded individuals will not support a social cause that they would otherwise support. The negative emotions faced by individuals when overloaded can increase rumination while making decisions. Multiple scholars connect information overload with lower decision quality (e.g., Jacoby et al., 1974), higher uncertainty, confusion, and decision-based regret (Chen et al., 2009). Research also suggests that consumers will have a higher switching likelihood (Chernev et al., 2015). Regarding social media usage, we predict that information overload will discourage users from reacting to social media advertisements (i.e., liking, sharing, and commenting; Figure 4):

H4: *Negative emotions will mediate the relationship between information overload on social media engagement, whereby information overload will encourage consumer negative emotions and then discourage engagement with social media advertising.*

1.6 | Study 1

This study investigates the relationship between FoMO and positive mood and whether an individual's need to belong mediates this relationship.

1.6.1 | Sample

University students from the southwestern part of the United States participated in the online lab study to receive course credit. The sample consists of 227 participants, 35.2% are male and 64.8% are females. Ages range from 18 to 79 with a mean age of 26.7. Caucasians consist of 58% of the sample while the rest of the sample includes African Americans (6%), Asians (14%), Hawaiian/Pacific Islanders (2%), Spanish (1%), Hispanics (2%), Latinos (1%), and Other (17%). Unemployed students consist of 59% while 14% are employed students (20 h/week), 24% are employed students (30 h/week), and unemployed/retired students include 3% of the sample.

1.6.2 | Procedures and measures

FoMO manipulation

Participants read a scenario in which Jordan decided to stay at home on a Friday night and learned via social media that other people were engaging in activities s/he could have participated in (adapted from Hayran et al. [2016]). The manipulation group was told Jordan feared s/he would not enjoy staying at home as much after s/he learned that others were experiencing more fun and rewarding activities that s/he was missing. The control group was told that Jordan would still enjoy staying home because s/he did not fear others were experiencing more fun and

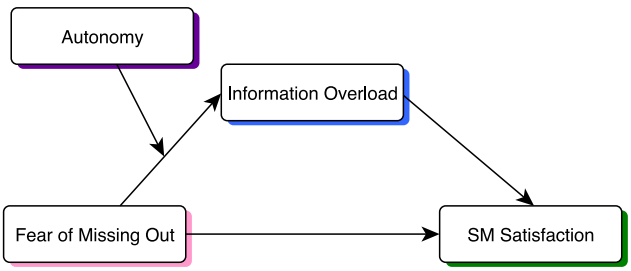

FIGURE 3 Conceptual model of Study 2 Part B

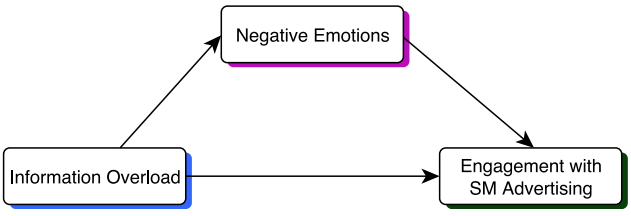

FIGURE 4 Conceptual model of Study 3

rewarding experiences that s/he was missing. All measures utilized Likert-type 7-point scales.

FoMO state

FoMO state items measure how much participants agree that Jordan was fearful, anxious, worried, and bothered about missing out on a 7-point Likert scale with end-points of strongly disagree/strongly agree ($\alpha = 0.97$) for the following items: "Jordan fears others are having more rewarding experiences compared to her/himself."; "Jordan is worried when he/she finds out his/her friends are having fun without him/her."; "Jordan is anxious when he/she finds out his/her friends are having fun without him/her."; "Jordan is bothered by missing out on a planned get-together that s(he) is not currently a part of."

Positive mood

This measure is an item on a 7-point Likert scale with end-points of very negative/very positive for the following question: "Based on the scenario, please rate how Jordan may feel right now?"

Need to belong

This measure (The Need to Belong Scale; Leary et al., 2013; $\alpha = 0.77$) includes ten items on a 5-point Likert scale with end-points of not at all/extremely (e.g., "I try hard not to do things that will make other people avoid or reject me."; Appendix A).

1.6.3 | Results

Manipulation check

Initially, a one-way ANOVA test was conducted to check whether the FoMO manipulation worked. The results indicated that there is a significant difference of FoMO manipulation on the FoMO state level (F (1, 225) = 90.18, $p < 0.001$). The low FoMO group reported a lower level of FoMO state ($M = 3.68$) than the high FoMO group ($M = 5.59$). Thus, the manipulation successfully altered the level of FoMO state.

The moderation model (PROCESS model 1; Hayes, 2017) was conducted at 5000 bootstrap samples at 95% confidence intervals (CIs) to test the interaction effect of the FoMO state by need to belong on positive mood. Confirming H1, there was a significant and negative interactive effect of FoMO state by need to belong on positive mood ($b = -0.2464$, $SE = 0.0814$, $t = -3.0284$, $p = 0.0027$, LLCI = −0.4067, ULCI = −0.0861). The moderating effect shows that people with low need to belong and a high level of FoMO state report higher positive mood ($M = 5.42$) compared to those with a high need to belong ($M = 2.63$; see Figure 5).

1.6.4 | Discussion

Study 1 confirms the role of need to belong in relation to the FoMO phenomenon in social media space. These results demonstrate how the interaction between FoMO and an individual trait impacts social media users' moods. Hence, FoMO as a negative feeling can trigger negative mood depending on the level of need to belong. In the next study, we will investigate FoMO's influence on social media interactivity, information overload, and social media satisfaction. We will also explore the role of autonomy (another individual trait) on the FoMO and information overload relationship.

1.7 | Study 2

This study aims to demonstrate: (1) FoMO's impact on information overload while considering social media interactivity's mediating effect, and (2) FoMO's influence on social media satisfaction with information overload's mediation and autonomy's moderation effects.

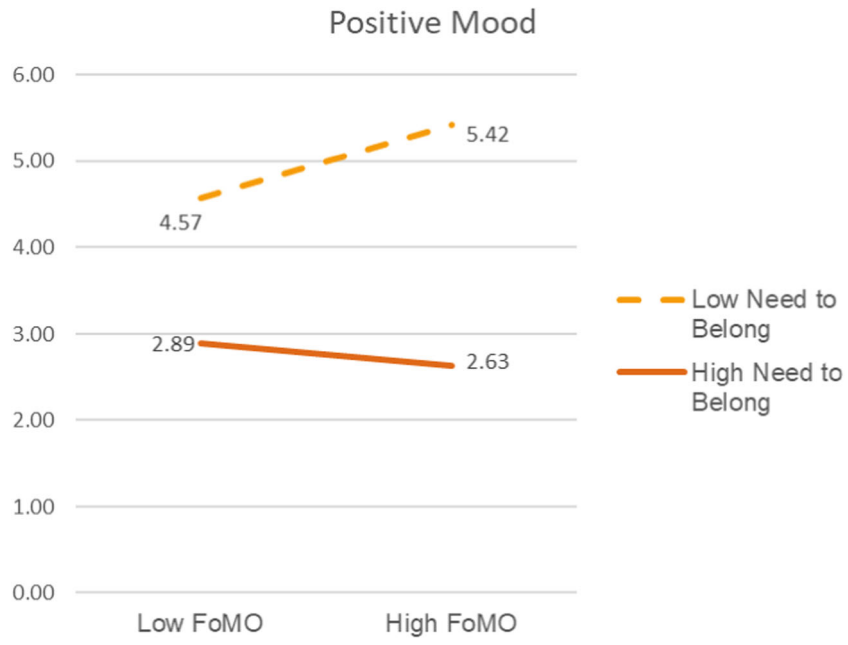

FIGURE 5 Study 1 interaction of FoMO by need to belong on positive mood. FoMO, fear of missing out

1.7.1 | Sample

The sample was collected by a professional marketing research agency to provide appropriate heterogeneity in terms of the age, education, occupation, and income levels of the respondents and increase the ecological validity. The agency randomly drew the sample from a panel consisting of respondents throughout the US. Respondents were required to be at least 18 years old and active participants on the Facebook social media networking site. The sample consisted of 529 participants, of which 37.6% are males and 61.2% are females. Ages range from 21 to 86 with a mean age of 35. Caucasians consist of 45% of the sample while the rest of the sample includes African Americans (16%), Native Americans (2%), Asians (26%), Hawaiian/Pacific Islanders (5%), and other (4%). Unemployed students consist of 17% of the population while 30% are employed students (20 h/week), 47% are employed students (30 h/week), and unemployed/retired students comprise 6% of the sample.

1.7.2 | Measures

Fear of missing out

The fear of missing out construct ($\alpha = 0.90$) consists of 10 items that are adapted for social media (Przybylski et al., 2013). The items are on a 7-point Likert scale with end-points of "not at all/very true" in response to: "Please respond to the following statements with regard to your feelings about using SOCIAL MEDIA NETWORKS." The items are as follows: "I fear the others have more rewarding experiences than me on social media networks."; "I fear that my friends have more rewarding experiences than me on social media networks."; "I get worried when I find out my friends are having friends without me on social media networks."; "I get anxious when I don't know what my friends are up to on social media networks."; "It is important that I understand my friends inside jokes on social media networks."; "Sometimes I wonder if I spend too much time keeping up with what is happening on social media networks."; "It bothers me when I miss an opportunity to connect with friends on social media networks."; "When I have a good time, it is important for me to share the details on social media networks (e.g., status updates)."; "When I miss out on an event posted on social media networks, it bothers me."; "When I go on vacation, I continue to keep tabs on what my friends are doing on social media networks."

Information overload

The information overload construct ($\alpha = 0.89$) consists of three items (Malhotra, 1984; Soto-Acosta et al., 2014) on a 7-point Likert scale with end-points of "not at all true/very true" (i.e., "There is too much information for me"; "I am completely flooded by the information"; "There is so much information that I am unable to consider all of it") in response to the following question "Please respond to the following statements with regard to YOURSELF and SOCIAL MEDIA NETWORKS."

Interactivity

The interactivity construct ($\alpha = 0.82$) consists of four items adapted from McMillan and Chavis (1986) on a 7-point Likert scale with end-points of "not at all true/very true." Items consist of: "They influence my thoughts and activities"; "I am able to influence their actions and feelings"; "My opinions matter to them"; "I care about what they think of my actions") in response to the following question: "Please respond to the following statements with regard to other members on social media platforms."

Autonomy

The autonomy construct ($\alpha = 0.66$) consists of three items adapted from Van den Broeck and colleagues on a 7-point Likert scale with end-points of "not at all true/very true" (i.e., "I feel like I can be myself"; "The tasks I have to do are in line with what I really want to do"; "I feel free to use social media networks in the way I think they can best be used") in response to the following question "Please respond to the following statements with regard to YOURSELF and SOCIAL MEDIA NETWORKS."

Social network satisfaction

The social network satisfaction construct ($\alpha = 0.74$) consists of four items adapted from Krishen, Leenders, et al. (2019) and Lin (2008) on a 7-point Likert scale with end-points of "not at all true/very true" (i.e., "Social media networks help satisfy my information needs"; "Overall I am satisfied with them"; "They help satisfy my social needs"; "Overall, participation in social media networks has been an unsatisfactory experience").

1.7.3 | Results

The mediation model (PROCESS model 4, Hayes, 2017) was conducted at 5000 bootstrap samples at 95% CIs to test the mediating role of social media interactivity between FoMO and information overload on social media. All the variables were continuous and mean-centered.

Partially confirming H2, social media interactivity partially mediates the path between the FoMO level and information overload on social media ($b = 0.12$, $SE = 0.06$, $t = 2.03$, $p = 0.04$, LLCI =0.0045 to ULCI = 0.2412). In particular, as FoMO increases, social media interactivity increases ($b = 0.47$, $SE = 0.05$, $t = 10.26$, $p < 0.01$, LLCI = 0.3756 to ULCI = 0.5534). Furthermore, as social media interactivity increases, information overload increases ($b = 0.19$, $SE = 0.05$, $t = 3.59$, $p < 0.01$, LLCI = 0.0860 to ULCI = 0.2945). These results indicate that as social media users attempt to handle high FoMO through social media interactions, they experience information overload, which prevents them from processing further information.

The moderated mediation model (PROCESS model 7; Hayes, 2017) was conducted at 5000 bootstrap samples at 95% CIs to test the mediating role of social media information overload between FoMO and social media satisfaction as well as the interaction effect of FoMO by autonomy on information overload on social media. All variables were continuous and mean-centered.

Partially confirming H3, information overload on social media partially mediates the path between the FoMO level and social media satisfaction ($b = 0.36$, $SE = 0.0456$, $t = 7.976$, $p = 0.000$, LLCI = 0.2743 to ULCI =0.4535). As FoMO increases, information overload on social media increases (b =0.20, $SE = 0.06$, $t = 3.56$, $p < 0.01$). Additionally, as information overload on social media increases, social media satisfaction decreases ($b = -0.07$, $SE = 0.04$, $t = -2.11$, $p = 0.04$). These findings indicate that a high level of FoMO can decrease social media satisfaction for individuals due to elevated information overload.

Furthermore, confirming H3a, autonomy moderates the relationship between FoMO and information overload. There was a significant and positive relationship between FoMO and information overload such that as FoMO increases, information overload on social media increases ($SE = 0.06$, $b = 0.20$, $t = 3.56$, $p < 0.01$). There is no significant relationship between autonomy and information overload ($SE = 0.06$; $b = -0.03$, $t = -0.43$, $p = 0.67$). However, the interaction of FoMO by autonomy on information overload is significant and positive ($SE = 0.04$, $b = 0.13$, $t = 2.93$, $p < 0.01$). Low and high levels of autonomy were determined utilizing spotlight analyses at one standard deviation above and below the mean. Findings indicate that when FoMO is high, people with high autonomy report more information overload ($M = 4.49$) than people with low autonomy ($M = 4.15$; see Figure 6). These results imply that having a high sense of autonomy on social media accompanies a boosted exposure of information on social media for users with high FoMO; these users may need to ensure that they are appearing more authentic than others.

1.7.4 | Discussion

Results of Study 2 show that FoMO can boost social media interactivity but also trigger information overload and decrease social media satisfaction. Social media interactivity can be viewed as a coping mechanism after experiencing FoMO; high levels of information overload and low levels of social media satisfaction can be conceptualized as FoMO's unintended negative consequences. Findings also demonstrate that autonomy on social media can escalate FoMO's negative impact on information overload. The final study will focus on the behavioral and marketing implications of information overload on social media.

1.8 | Study 3

This study explores the effect of information overload on engagement with social media advertising. Moreover, we will investigate whether negative emotions mediate the relationship between information overload and engagement with social media advertising. We specifically focus on liking, sharing, and commenting behaviors on social media advertisements.

1.8.1 | Sample

A professional marketing research agency collected our sample data from individuals between the ages of 18 and 65, living in the United States, and who are active social media users. Participants who answered reading check questions incorrectly were excluded from the data set. The final sample consisted of 180 participants ($M_{age} = 36.15$; 47.8% male, 51.1% female, 1.1% other gender). Sixty-six percent of the sample identifies as White, 37% as Black/African American while the rest of the sample identifies as Asians (10%), Native American/Alaska Native (8%), Hispanic (5%), Latino (3.3%), Spanish (1.7%), other (1.7%), and Native Hawaiian/Pacific Islander (0.6%).

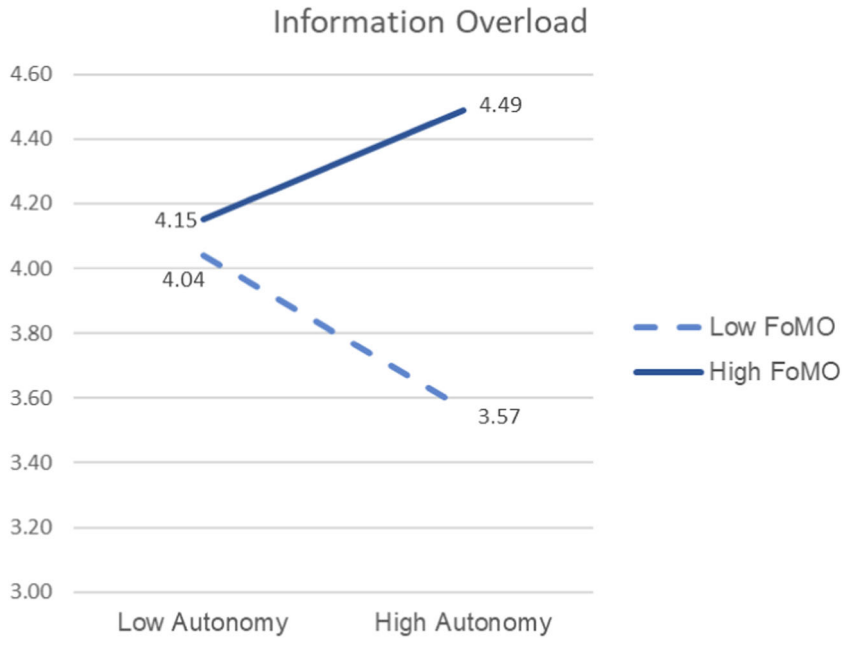

FIGURE 6 Study 2 Part B interaction effect of FoMO by autonomy on social media information overload. FoMO, fear of missing out

1.8.2 | Measures

Information overload manipulation

Participants were randomly assigned to either low or high information overload conditions, in which they were exposed to differing amounts of information, similar to Hu and Krishen's (2019) manipulation with varying numbers of product reviews. Participants either saw a social media post that had two suggestions for well-being at work and were requested to quickly skim it (low information overload condition) or saw a social media post that had five suggestions for well-being at work and were requested to carefully read it in detail (high information overload condition).

Information overload level

We utilized the same information overload scale ($\alpha = 0.81$) as in Study 2 (Malhotra, 1984; Soto-Acosta et al., 2014) to measure and check the efficacy of the manipulation.

Negative emotions

The negative emotion construct ($\alpha = 0.87$) consists of three items. Participants rated the degree of frustration, stress, and anxiety they currently feel on a 7-point Likert-type scale with end-points of "Not at all" and "Strongly agree" for the following question: "Please rate how you feel right now."

Engagement with social media advertising

The engagement with social media advertising construct ($\alpha = 0.89$) consists of three items. Participants were requested to imagine seeing an advertisement on their social media account that shows the new sneaker designs from their favorite brand. Next, they were asked to state how much they agree with the following statements: "I would like this advertisement," "I would share the sneakers' link with others," and "I would comment about these sneakers," (adapted from Krishen et al., [2021]) on a 7-point Likert scale with the end-points of "strongly disagree" and "strongly agree."

1.8.3 | Results

Manipulation check

First, a one-way ANOVA test was conducted to check whether the information overload manipulation worked. The results showed that there is a significant difference of information overload manipulation on the information overload level (F (1, 178) = 10.94, $p = 0.001$). The low information overload group reported a lower level of information overload ($M = 3.61$) than the high information overload group ($M = 4.29$). Thus, the information overload manipulation successfully altered the information overload level.

The mediation model (PROCESS model 4; Hayes, 2017) was conducted at 5000 bootstrap samples at 95% CIs to test the mediating role of negative emotions between information overload and engagement with social media advertising. All continuous variables defining the dependent variable were mean-centered.

Confirming H4, negative emotions fully mediates the path between information overload and engagement with social media advertising ($b = -0.12$, $SE = 0.0642$, LLCI = −0.2591 to ULCI = −0.0128). As information overload increases, individuals experience higher levels of negative emotions ($b = 0.71$, SE = 0.2474, $t = 2.86$, $p < 0.01$). Additionally, as negative emotions increase, engagement with social media advertising decreases ($b = -0.16$, $SE = 0.06$, $t = -2.60$, $p = 0.01$). Information overload has no significant direct effect on engagement with social media advertising ($b = -0.19$, $SE = 0.21$, $t = -0.91$, $p = 0.36$).

1.8.4 | Discussion

These findings demonstrate that a high level of information overload can decrease social media users' advertising engagement due to elevated negative emotions. When individuals use social media excessively, they feel negative emotions in the form of frustration, anxiety, and stress and have less tendency to engage with products on social media. Brand managers are advised to display their advertisements to their target market on social media when those consumers are not experiencing information overload, for example when they initially sign into their accounts.

2 | GENERAL DISCUSSION

The social networking literature demonstrates both adaptive and maladaptive behaviors associated with FoMO. In our research, the Study 1 quantitative model indicates that the deleterious effects of being in the state of FoMO can be moderated when individuals have a lower level of need to belong. When people have a high level of FoMO, having a low need to belong can result in a more positive mood. In many circumstances, individuals with high FoMO are driven to achieve a higher sense of belonging (Roberts & David, 2020); however, needing to belong is not the only motivation to engage in social media usage. In fact, other motivations such as autonomy may also be the drivers of cognitive response and social media satisfaction achievement.

FoMO can fluctuate based on the transient situational conditions surrounding the social media interaction, such as the physical location and conditions surrounding a person. For example, Studies 2 and 3 show that FoMO effects interactivity on social media as well as information overload and social media satisfaction. Particularly for the models, we present in our second study, when individuals have high levels of FoMO, they experience higher levels of interactivity that will ultimately lead to information overload. These findings are consistent with cognitive load theory, arguing that the complexity of relationships, information, or involvement can all trigger feelings of overload. This is two-pronged and includes the desire to share a true experience by reflecting an authentic self with others, while simultaneously wanting to be knowledgeable about others in a way that allows individuals to remain true to themselves. Those with high levels of

autonomy tend to want to display their authentic selves and be in control of their image on social media. In the process of doing this, they may need to post everything about themselves due to FoMO but fall into a quandary between quantity and quality of engagement.

Finally, we demonstrate how information overload, shown to be increased by FoMO in our previous studies, can lessen users' engagement with social media advertising because it triggers negative affect. These results show that FoMO not only influences users' moods but also triggers their negative emotions of stress, frustration, and anxiety. Negative affect discourages users from engaging in social media actions such as liking, sharing, and commenting on social media advertisements, which can decrease word-of-mouth (WOM) about products. These results provide new metrics (e.g., information overload, emotions) for brand managers who aim to reach social media users and encourage positive WOM.

Ultimately, we contribute to existing research by interrogating the relationships of FoMO and information overload with SDT motivations and their potentially deleterious effects for consumers. Moreover, our research can aid in the development of successful interventions that can facilitate the transformation of maladaptive behavioral responses into adaptive outcomes.

3 | CONCLUSIONS AND IMPLICATIONS

Social networking sites (SNSs) survive and thrive through their ability to provide consumers with meaningful engagement and journeys (Pancer et al., 2019). By developing and nurturing virtual environments that enhance social media satisfaction, these SNSs can do better for their users, for themselves, for their sponsors, and for society. FoMO, at a healthy level, is indeed an important mechanism for consumer engagement and thus the success of many SNSs. However, if social networking consumers experience more negative emotions while engaging, both short and long-term, they will likely spend less time on SNSs and engage less with social media advertisements. Thus, marketers must consider the ultimate question—what is the right level of FoMO to keep users engaged without experiencing information overload? Depending on the SNS, marketers may wish to achieve a balance of education and entertainment to avoid the possibility of users' developing information overload from the messaging and thereby defecting from the SNS.

Recent research by Wakefield and Wakefield (2018) indicates that anxiety motivates individuals to limit the duration of the messages they post and that by using ephemeral technologies to automate the timing of posts, they experience less anxiety. Our research is consistent with their findings because whereas FoMO can decrease positive mood, it can also lead to enhanced social media satisfaction when coupled with just enough information without overloading. To aid consumers, brand marketers can provide mechanisms that may reduce FoMO, tools to manage it, or other means of increasing emotional connections with consumers (Karampela et al., 2020). For instance, marketers can strategize the timing of their advertising placements on social media. They can choose to display their advertisements at the beginning of users' sessions, morning hours, or on weekend days when users presumably have more mental capacity to process new information. Alternatively, marketers can present their advertisements directly following the times when consumers share content, because they may be more motivated to check new content, post reactions, and experience positive emotions. Finally, marketers can selectively not place their advertisements with ephemeral content, or that which happens quickly as in the case of Facebook or Instagram stories, because the fast pace of procession might not give users enough time to evaluate advertisements and react.

Health advocates can leverage technology to increase meaningful engagement with social media consumers. For example, by using semantic and sentiment analytics and tools, they can provide opt-in messaging to consumers regarding their overall well-being and mental health, ideally educating and entertaining them at the same time. Marketers may also wish to consider sponsoring aspirational or VIP virtual events by creating buzz wherein consumers may be excited to participate (addressing their need to belong); in such events, all consumers would be able to attend, and no one would be neglected (ideally decreasing the negative impact of FoMO)—thus having potentially lucrative implications for marketers. Overall, our research findings should be of interest to consumers, health advocates, and marketing practitioners.

Our study has several limitations and many of them point to promising future research. First, our three studies derive samples from voluntary individuals, so we cannot rule out potential self-selection bias. We utilized adult samples; adolescents are more sensitive to FoMO, so it would also be beneficial to examine these relationships with adolescent samples (Beyens et al., 2016; Franchina et al., 2018). Second, our studies do not explore individual difference variables such as self-presentation motives (Barasch & Berger, 2014) and self-enhancement needs (Eisingerich et al., 2015), which influence online and social media posting and sharing behaviors. Furthermore, we provided a quantitative approach in all of our studies; however, our second study could have benefited through multiple types of analyses, such as fuzzy set qualitative comparative analysis (fsQCA) in addition to our provided method. This type of analysis could derive key relationships and multiple recipes for social media satisfaction to augment our quantitative analyses. Lastly, we utilized only one advertisement and one product category in Study 3. Future studies can explore other SNS advertising with different types of products.

Future research can expand our model by incorporating other theoretically relevant constructs, alternative FoMO measures (e.g., Zhang et al., 2020), and their relationship with positive mood. Future research should investigate whether FoMO can lead to potential long-term positive outcomes, such as increasing the breadth of a social network, having greater knowledge of and participation in social events, and less loneliness. Finally, since digital technology and social networking behaviors differ across various cultures (e.g., Krishen et al., 2021) and industries (e.g., Bui & Namin, 2019), understanding such differences as they relate to FoMO and information overload may offer rich insights related to social media usage.

DATA AVAILABILITY STATEMENT

Data are available when requested.

ORCID

Anjala S. Krishen https://orcid.org/0000-0002-4749-5130
Eda Anlamlier https://orcid.org/0000-0001-7529-2843

REFERENCES

Alt, D. (2015). College students' academic motivation, media engagement and fear of missing out. *Computers in Human Behavior*, *49*, 111–119. https://doi.org/10.1016/j.chb.2015.02.057

Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. *Psychological Bulletin*, *80*(4), 286–303. https://doi.org/10.1037/h0034845

Barasch, A., & Berger, J. (2014). Broadcasting and narrowcasting: How audience size affects what people share. *Journal of Marketing Research*, *51*(3), 286–299. https://doi.org/10.1509/jmr.13.0238

Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *Cyberpsychology & Behavior*, *12*(2), 209–213. https://doi.org/10.1089/cpb.2008.0228

Beyens, I., Frison, E., & Eggermont, S. (2016). "I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook related stress. *Computers in Human Behavior*, *64*, 1–8. https://doi.org/10.1016/j.chb.2016.05.083

Blackwood, R. (2019). Language, images, and Paris Orly airport on Instagram: Multilingual approaches to identity and self-representation on social media. *International Journal of Multilingualism*, *16*(1), 7–24. https://doi.org/10.1080/14790718.2018.1500257

Buglass, S. L., Binder, J. F., Betts, L. R., & Underwood, J. D. (2017). Motivators of online vulnerability: The impact of social network site use and FOMO. *Computers in Human Behavior*, *66*, 248–255. https://doi.org/10.1016/j.chb.2016.09.055

Bui, M., & Namin, A. (2019). Digital technology disrupting health: Reviewing key components of modern healthcare. In A. Krishen, & O. Berezan (Eds.), *Marketing and humanity: Discourses in the real world* (pp. 148–169). Cambridge Scholars Publishing.

Chen, Y.-C., Shang, R.-A., & Kao, C.-Y. (2009). The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment. *Electronic Commerce Research and Applications*, *8*(1), 48–58. https://doi.org/10.1016/j.elerap.2008.09.001

Chernev, A., Böckenholt, U., & Goodman, J. (2015). Choice overload: A conceptual review and meta-analysis. *Journal of Consumer Psychology*, *25*(2), 333–358.

Clayton, R. B., Leshner, G., & Almond, A. (2015). The extended iSelf: The impact of iPhone separation on cognition, emotion, and physiology. *Journal of Computer-Mediated Communication*, *20*(2), 119–135. https://doi.org/10.1111/jcc4.12109

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310–357. https://doi.org/10.1037/0033-2909.98.2.310

Dutot, V. (2020). A social identity perspective of social media's impact on satisfaction with life. *Psychology & Marketing*, *37*(6), 759–772. https://doi.org/10.1002/mar.21333

Eisingerich, A. B., Chun, H. H., Liu, Y., Jia, H., & Bell, S. J. (2015). Why recommend a brand face-to-face but not on Facebook? How word-of-mouth on online social sites differs from traditional word-of-mouth. *Journal of Consumer Psychology*, *25*(1), 120–128. https://doi.org/10.1016/j.jcps.2014.05.004

Eppler, M., & Mengis, J. (2004). The concept of IO: A review of literature from organization science, marketing, accounting, MIS and related disciplines. *The Information Society: An International Journal*, *20*(5), 1–20.

Fleming, S. (2019). *This is the world's biggest mental health problem – and you might not have heard of it*. World Economic Forum. https://www.weforum.org/agenda/2019/01/this-is-the-worlds-biggest-mental-health-problem/

Franchina, V., Vanden Abeele, M., Van Rooij, A. J., Lo Coco, G., & De Marez, L. (2018). Fear of missing out as a predictor of problematic social media use and phubbing behavior among Flemish adolescents. *International Journal of Environmental Research and Public Health*, *15*(10):2319. https://doi.org/10.3390/ijerph15102319

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Publications.

Hayran, C., Anik, L., & Gurhan-Canli, Z. (2016). Feeling of missing out (FOMO) and its marketing implications. *Marketing Science Institute Working Paper Series*, 16–131.

Hu, H.-f., & Krishen, A. S. (2019). When is enough, enough? Investigating product reviews and information overload from a consumer empowerment perspective. *Journal of Business Research*, *100*, 27–37. https://doi.org/10.1016/j.jbusres.2019.03.011

Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, *79*(6), 995–1006. https://doi.org/10.1037//0022-3514.79.6.995

Jacoby, J., Speller, D. E., & Kohn, C. A. (1974). Brand choice behavior as a function of information load. *Journal of Marketing Research*, *11*(1), 63–69.

Karampela, M., Lacka, E., & McLean, G. (2020). "Just be there": Social media presence, interactivity, and responsiveness, and their impact on B2B relationships. *European Journal of Marketing*, *54*(6), 1281–1303. https://doi.org/10.1108/EJM-03-2019-0231

Krishen, A. S., Berezan, O., Agarwal, S., & Kachroo, P. (2016). The generation of virtual needs: Recipes for satisfaction in social media networking. *Journal of Business Research*, *69*(11), 5248–5254. https://doi.org/10.1016/j.jbusres.2016.04.120

Krishen, A. S., Berezan, O., Agarwal, S., & Kachroo, P. (2019). Social media networking satisfaction in the US and Vietnam: Content versus connection. *Journal of Business Research*, *101*, 93–103. https://doi.org/10.1016/j.jbusres.2019.03.046

Krishen, A. S., Berezan, O., Agarwal, S., Kachroo, P., & Raschke, R. (2021). The digital self and virtual satisfaction: A cross-cultural perspective. *Journal of Business Research*, *124*(1), 254–263.

Krishen, A. S., Berezan, O., & Raab, C. (2019). Feelings and functionality in social networking communities: A regulatory focus perspective. *Psychology & Marketing*, *36*(7), 675–686. https://doi.org/10.1002/mar.21204

Krishen, A. S., Hu, H., Spivak, A. L., & Venger, O. (2021). The danger of flavor: E-cigarettes, social media, and the interplay of generations. *Journal of Business Research*, *132*, 884–896.

Krishen, A. S., Leenders, M., Muthaly, S., Ziółkowska, M., & LaTour, M. (2019). Social networking from a social capital perspective: A cross-cultural analysis. *European Journal of Marketing*, *53*(6), 1234–1253. https://doi.org/10.1108/EJM-12-2016-0892

Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2013). Construct validity of the need to belong scale: Mapping the nomological network. *Journal of Personality Assessment*, *95*(6), 610–624. https://doi.org/10.1080/00223891.2013.819511

Li, C.-Y. (2016). The more, the better? Why abundant information leads to unanticipated outcomes. *Telematics and Informatics*, *33*(3), 834–847. https://doi.org/10.1016/j.tele.2015.12.007

Lin, H.-F. (2008). Determinants of successful virtual communities: Contributions from system characteristics and social factors. *Information & Management*, *45*(8), 522–527. https://doi.org/10.1016/j.im.2008.08.002

Liu, C.-Y., & Kuo, F.-Y. (2007). A study of Internet addiction through the lens of the interpersonal theory. *Cyberpsychology & Behavior*, *10*(6), 799–804. https://doi.org/10.1089/cpb.2007.9951

Malhotra, N. K. (1984). Reflections on the information overload paradigm in consumer decision making. *Journal of Consumer Research*, *10*(4), 436–440. https://doi.org/10.1086/208982

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, *14*(1), 6–23.

National Health Services. (2018). *Low mood and depression*. https://www.nhs.uk/conditions/stress-anxiety-depression/low-mood-and-depression/

Obeidat, Z. M. I., Xiao, S. H., Iyer, G. R., & Nicholson, M. (2017). Consumer revenge using the internet and social media: An examination of the role of service failure types and cognitive appraisal processes. *Psychology & Marketing*, *34*(4), 496–515. https://doi.org/10.1002/mar.21002

Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence*, *55*, 51–60. https://doi.org/10.1016/j.adolescence.2016.12.008

Pancer, E., Chandler, V., Poole, M., & Noseworthy, T. J. (2019). How readability shapes social media engagement. *Journal of Consumer Psychology*, *29*(2), 262–270. https://doi.org/10.1002/jcpy.1073

Petrescu, M., Krishen, A., & Bui, M. (2020). The internet of everything: Implications of marketing analytics from a consumer policy perspective. *Journal of Consumer Marketing*, *37*(6), 675–686. https://doi.org/10.1108/JCM-02-2019-3080

Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, *29*(4), 1841–1848. https://doi.org/10.1016/j.chb.2013.02.014

Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out face-to-face: Overlap in adolescents' online and offline social networks. *Developmental Psychology*, *48*(2), 356–368. https://doi.org/10.1037/a0026980

Roberts, J. A., & David, M. E. (2020). The social media party: Fear of missing out (FoMO), social media intensity, connection, and well-being. *International Journal of Human-Computer Interaction*, *36*(4), 386–392. https://doi.org/10.1080/10447318.2019.1646517

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Seraj, M. (2012). We create, we connect, we respect, therefore we are: Intellectual, social, and cultural value in online communities. *Journal of Interactive Marketing*, *26*(4), 209–222. https://doi.org/10.1016/j.intmar.2012.03.002

Soto-Acosta, P., Jose Molina-Castillo, F., Lopez-Nicolas, C., & Colomo-Palacios, R. (2014). The effect of information overload and disorganisation on intention to purchase online: The role of perceived risk and internet experience. *Online Information Review*, *38*(4), 543–561. https://doi.org/10.1108/OIR-01-2014-0008

Statista. (2021a). *Social media marketing usage rate in the United States from 2013 to 2022*. https://www.statista.com/statistics/203513/usage-trands-of-social-media-platforms-in-marketing/

Statista. (2021b). *Social network advertising spending in the United States from 2016 to 2022*. https://www.statista.com/statistics/736971/social-media-ad-spend-usa/

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1016/0364-0213(88)90023-7

Sweller, J. (1994). Cognitive load theory, learning difficulty, and instructional design. *Learning and Instruction*, *4*(4), 295–312. https://doi.org/10.1016/0959-4752(94)90003-5

Toffoletti, K., & Thorpe, H. (2018). Female athletes' self-representation on social media: A feminist analysis of neoliberal marketing strategies in "economies of visibility". *Feminism & Psychology*, *28*(1), 11–31. https://doi.org/10.1177/0959353517726705

Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among US adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science*, *6*(1), 3–17. https://doi.org/10.1177/2167702617723376

Twenge, J. M., Martin, G. N., & Campbell, W. K. (2018). Decreases in psychological well-being among American adolescents after 2012 and links to screen time during the rise of smartphone technology. *Emotion*, *18*(6), 765–780. https://doi.org/10.1037/emo0000403

Wakefield, L. T., & Wakefield, R. L. (2018). Anxiety and ephemeral social media use in negative eWOM creation. *Journal of Interactive Marketing*, *41*, 44–59. https://doi.org/10.1016/j.intmar.2017.09.005

Wang, P., Xie, X., Wang, X., Wang, X., Zhao, F., Chu, X., Nie, J., & Lei, L. (2018). The need to belong and adolescent authentic self-presentation on SNSs: A moderated mediation model involving FoMO and perceived social support. *Personality and Individual Differences*, *128*(1), 133–138. https://doi.org/10.1016/j.paid.2018.02.035

Xie, X., Wang, Y., Wang, P., Zhao, F., & Lei, L. (2018). Basic psychological needs satisfaction and fear of missing out: Friend support moderated the mediating effect of individual relative deprivation. *Psychiatry Research*, *268*, 223–228. https://doi.org/10.1016/j.psychres.2018.07.025

Xie, X.-Z., & Tsai, N.-C. (2021). The effects of negative information-related incidents on social media discontinuance intention: Evidence from SEM and fsQCA. *Telematics and Informatics*, *56*, 101503.

Yuksel, U., Thai, N. T., & Lee, M. S. (2020). Boycott them! No, boycott this! Do choice overload and small-agent rationalization inhibit the signing of anti-consumption petitions? *Psychology & Marketing*, *37*(2), 340–354.

Zhang, Z., Jiménez, F. R., & Cicala, J. E. (2020). Fear of missing out scale: A self-concept perspective. *Psychology & Marketing*, *37*(11), 1619–1634. https://doi.org/10.1002/mar.21406

How to cite this article: Bui, M., Krishen, A. S., Anlamlier, E., & Berezan, O. (2022). Fear of missing out in the digital age: The role of social media satisfaction and advertising engagement. *Psychology & Marketing*, 39, 683–693. https://doi.org/10.1002/mar.21611

APPENDIX A

The Need to Belong Scale

(Leary et al., 2013; $\alpha = 0.77$)

1. If other people don't seem to accept me, I don't let it bother me. (R)*
2. I try hard not to do things that will make other people avoid or reject me.
3. I seldom worry about whether other people care about me. (R)
4. I need to feel that there are people I can turn to in times of need.
5. I want other people to accept me.
6. I do not like being alone.
7. Being apart from my friends for long periods of time does not bother me. (R)
8. I have a strong "need to belong."
9. It bothers me a great deal when I am not included in other people's plans.
10. My feelings are easily hurt when I feel that others do not accept me.

* (R) refers to reverse-scored items.