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Isaac Vaghefi

CUNY Bernard M Baruch College, isaac.vaghefi@baruch.cuny.edu

Ofir Turel

University of Melbourne, oturel@unimelb.edu.au

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Isaac Vaghefi

Baruch College, City University of New York, isaac.vaghefi@baruch.cuny.edu

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Taking a Break from Social Media? A Multi-method Investigation of Social Media Abstinence Duration

Isaac Vaghefi

Zicklin School of Business, Baruch College,
City University of New York,
New York, USA

Ofir Turel

School of CIS, University of Melbourne,
Parkville, Australia

Abstract:

The rise in compulsive media use has led to adverse outcomes for individuals, such as reduced life satisfaction and deteriorated performance. As a result, many people have chosen to abstain (take breaks) from social media use to mitigate these negative effects. While prior research has examined drivers of decisions to abstain versus not, we still need to understand what happens after people make abstinence decisions (e.g., to address how long people can abstain or what makes some people abstain longer than others). To address this need, we first propose a research model that includes compulsive use, attitude toward abstinence, and mood during abstinence as predictors for how long people will abstain from social media. We conducted two studies. In the first study, we conducted a variable-centered analysis to examine data from volunteers who agreed to take up to a one-week break from social media. In the second study, we conducted a person-centered analysis along with the validated factors and a new dataset to develop a typology that delineates four user profiles: challenged strivers, moderate strugglers, successful maintainers, and steadfast controllers. Each profile exhibits unique characteristics and experiences distinct outcomes with regard to social media abstinence. Findings from the second study complement the first and contribute to explaining social media abstinence in a more nuanced way.

Keywords: Social Media, Abstinence Duration, Compulsive Use, Typology, User Profiles

Fiona Nah was the accepting senior editor for this paper.

1 Introduction

While individuals can often benefit from using technology, which includes social media, a growing number of recent information systems (IS) studies have demonstrated that compulsive social media use can have adverse outcomes, such as stress, reduced life satisfaction, and deteriorated academic performance (Tarafdar et al., 2019; Venkatesh et al., 2019). Temporary abstinence represents one way to try to alleviate these outcomes. Abstinence can reduce stress and improve individuals' wellbeing (Tromholt, 2016; Turel et al., 2018). It can also help users recover from dependency and compulsive use of social media (James et al., 2017) and enable immediate and long-lasting positive effects for individuals (Santelli et al., 2006; Underhill et al., 2007). Consequently, 42 percent of Facebook users tend to take breaks from use, sometimes for weeks (Perrin, 2018).

However, many individuals often resist such attempts (Abhari & Vaghefi, 2022; Gomez et al., 2015) and fail to sustain them for one week or even a few days (Schoenebeck, 2014; Stieger & Lewetz, 2018). Evidence suggests that 1) individuals find it challenging to maintain social media abstinence after they have already made the decision to do so and 2) initiating abstinence differs from maintaining it. Indeed, prior IS research typically focuses on when people *initiate* post-adoptive behaviors (via studying individuals' intentions), such as discontinuing (Tromholt, 2016; Turel, 2015) or taking a temporary break from use (Schoenebeck, 2014; York & Turcotte, 2015). Consequently, prior IS studies do not provide theoretical or empirical insights into how people can maintain abstinence behaviors once initiated (i.e., actual user behavior), and we lack knowledge about the factors that influence actual social media abstinence duration. We need to understand these issues given that initiating abstinence does not suffice; people need to stick to their plan to harvest the benefits of abstinence (Tromholt, 2016; Turel et al., 2018). In addition, abstinence as a form of self-treatment has become highly relevant given the growth in compulsive and addictive social media use (Vaghefi et al., 2023). To illustrate, 42 states in the United States (US) recently sued Meta (Facebook and Instagram's parent company) for intentionally and continuously making the platform more addictive and harmful to children and young adults (Gibson, 2023). Additionally, several key U.S. public figures (e.g., the surgeon general and New York City mayor) have recently called social media a public health crisis (Ables, 2023).

In this paper, we address the following research question (RQ):

RQ: What determines the duration of users' social media abstinence?

Using elements from the stimulus-organism-response model (Mehrabian & Russell, 1974), we develop a research model that describes how compulsive social media use as a stimulus can bring about social media abstinence as a response. The model also shows that cognitive and affective reactions can mediate this effect during the abstinence period. While cognitive reactions may include perception, belief, attention, and memory, affective reactions can include various positive or negative emotions (e.g., pleasure or anxiety). Specifically, in our model, we consider two summative cognitive and affective constructs related to abstinence—attitude toward abstinence (cognitive) and mood during abstinence (affective)—as mediators that channel the indirect effect of compulsive social media use on abstinence duration.

We conducted two studies. In the first study, we conducted a “variable-centered” analysis with structural equation modeling (SEM) to validate our research model using data that we collected from social media users ($n_1 = 202$) who volunteered to abstain from social media use for one week. In the second study, we used a separate dataset ($n_2 = 262$), a “person-centered” analysis, and various validated factors from the first study to develop a typology. Specifically, we used latent profile analysis (LPA) to identify four unique user profiles—challenged strivers, moderate strugglers, successful maintainers, and steadfast controllers—based on the configuration of the independent variables and distinct social media abstinence outcomes. These findings complement findings from the first study and better explain social media abstinence behaviors.

The paper contributes to the growing literature on corrective user behaviors. From a theoretical perspective, we present a validated research model that offers new insights into how long individuals can abstain from social media use. We particularly show how the extent to which individuals currently engage in compulsive social media use can affect both their affective and cognitive reactions and how these reactions together determine actual abstinence duration. On the methodological front, we employ a multi-method approach that combines variable-centered and person-centered analyses to explain in a more nuanced way the important factors influencing social media abstinence duration and how they differ among individual

subgroups based on the unique configuration of our model variables. We also discuss the practical implications of our findings.

2 Theoretical Foundation

2.1 Compulsive Use of Social Media

Compulsive behavior reflects repetitive and frequent actions that a person feels driven to perform as a response to an obsessive thought or urge (O'Guinn & Faber, 1989). Individuals typically find such behaviors difficult to resist despite the negative consequences they may lead to, which can create conflict with important life functions (Tiffany & Carter, 1998). Furthermore, stress, anxiety, tension, or discomfort one might experience can further exacerbate these behaviors. Therefore, individuals repeatedly engage in chronic behavior to help alleviate negative feelings (e.g., stress or frustration) that they experience (Neuner et al., 2005). In this respect, compulsive behaviors differ from impulsive behavior: while impulsive behaviors usually occur without thinking, compulsive behaviors typically involve repeating an action due to the need to relieve stress and uncomfortable feelings (Wang & Lee, 2020). Compulsive behavior examples include excessive hand washing, checking, counting, and shopping behaviors (Muela et al., 2022).

In addition to these behavioral compulsions, recent research has examined compulsive behaviors with respect to technology such as the Internet, smartphones, online games, and social media (Moqbel et al., 2023; Van Den Eijnden et al., 2018; Wang & Lee, 2020). Here, we focus on social media without discounting the importance of other compulsive use contexts. Compulsive social media use captures excessive and frequent engagement patterns with social media (e.g., via smartphone or laptop) with an often irresistible urge to check, post, and interact with peers in the network. Compulsive users often find themselves spending excessive amounts of time on social media, which sometimes affects their other roles and responsibilities. For instance, researchers have found students who use Facebook compulsively can suffer from missed deadlines, poor academic performance, connection and information overload, or lack of sleep (Tandon et al., 2020; Turel & Qahri-Saremi, 2016). Ultimately, given the negative outcomes associated with compulsive social media use and abstinence's ability to alleviate them, we can reasonably expect that rational individuals will engage in self-regulatory efforts (such as abstinence) to reduce and overcome their compulsion and its negative outcomes.

2.2 Social Media Abstinence

As social media tools have proliferated and individuals have increasingly used these artifacts in compulsive ways, mounting efforts to help people control their social media use (e.g., campaigns such as digital detox (Booth, 2016) or digital minimalism (Newport, 2019) have emerged. These efforts resemble other efforts where people try to take a break (i.e., abstain) or completely stop unwanted or potentially harmful habitual behavior (Turel & Vaghefi, 2020). Abstinence refers to "not doing or having something that is wanted or enjoyable" ("Abstinence", 2004). In psychology, the term refers to sustaining a self-regulatory behavior (e.g., leaving a bad habit) for a period without a relapse (Hughes et al., 2003). In our context, the term captures taking a break from habitual social media use with or without an intention to reinstate use in the future.

Recent research has noted that abstinence from technology use has risen in recent years (Brailovskaia et al., 2022; Brown & Kuss, 2020; Hall et al., 2021; Tromholt, 2016) and begun focusing on explaining its antecedents. These studies have highlighted the role that gender and race (Stieger & Lewetz, 2018; York & Turcotte, 2015), external factors (e.g., limited social media access), and internal motivation (e.g., when one prioritizes not wasting time) play in whether individuals initiate abstinence from social media (Rosen et al., 2013). Nevertheless, two gaps exist in this literature. First, existing studies have largely emphasized abstinence initiation and not its success. Thus, we lack knowledge of factors and processes that affect how long people can abstain, which underlies their ability to overcome the negative effects of social media and regain control (agency) over how frequently they use social media (Turel, 2021). Second, existing studies have only identified a limited number of typical sociodemographic factors. However, people do not typically plan to fail, and proximal factors, such as emotions at the decision moment, can affect whether one fails to abstain (Turel & Vaghefi, 2020). Ultimately, given the relatively high rate at which abstinence efforts fail and their potential positive outcomes, such as improved productivity or greater wellbeing (Tromholt, 2016), the abovementioned gaps deserve scholarly attention.

2.3 Stimulus-Organism-Response Model

To theorize key factors underlying abstinence, we draw on the stimulus-organism-response (SOR) model (Mehrabian & Russell, 1974). The model suggests that, although individuals typically intend to make rational decisions in response to stimuli, reactive affective states may influence their decisions. As such, the SOR model comprises three elements:

- 1) The stimulus, which refers to the “influence” that elicits a change in people’s internal states and causes behavioral or psychological arousal (Eroglu et al., 2003; Vieira, 2013).
- 2) The organism (or reaction), which represents the intermediating internal process that links a stimulus with an individual’s reaction (Koo & Ju, 2010) and can involve cognitive and affective reactions (Cui et al., 2016; Eroglu et al., 2003; Parboteeah et al., 2009; Vieira, 2013). Cognitive reactions capture an organism’s cognitive aspect and encompass changes in internal processes such as perceptions, beliefs, and memory. Affective reactions capture an organism’s emotional aspect and encompass changes in feelings, moods, and affective responses that stimuli trigger (Mehrabian & Russell, 1974).
- 3) The response, which refers to the eventual “approach” or “avoidance” observable behavior driven by the interplay between stimulus and cognitive and affective reactions (Eroglu et al., 2003). While approach behaviors include actions aligned with the situation or environment, avoidance behaviors include actions taken to exit/elude the situation.

We argue that the SOR represents a suitable model for explaining social media abstinence for at least two reasons. First, it recognizes the complexity of human behavior and internal processes that occur between a stimulus and a response. Unlike traditional cause-effect theories that provide a rather simple view of a behavior as a direct cause of a stimulus, the SOR model considers the various cognitive and emotional factors that influence human behavior. In the social media abstinence context, this complexity allows one to more deeply understand the factors that facilitate or challenge individuals’ abstinence experience.

Second, the model accounts for individuals’ limited rationality in translating a dire state, such as compulsive use, into what may seem like an obvious rational response (e.g., abstinence). While compulsively using social media can lead to negative outcomes, not all users tend to recognize these negative effects by abstaining from using it. The SOR model can help explain why some users may struggle to make rational choices in this regard by considering possible cognitive and affective reactions. Third, researchers have successfully applied the model to user behaviors in similar contexts (Sheng & Joginapelly, 2012) such as excessive consumption (Becker & Murphy, 1988; Elster & Skog, 1999) or compulsive technology use (Cui et al., 2016; Parboteeah et al., 2009). Likewise, researchers have used the model to explain corrective behaviors with regard to technology use. For instance, Luqman et al. (2017) used SOR to examine the relationship between environmental stimuli (which they captured via compulsive social, hedonic, and cognitive use), internal organism (which they captured via technostress and social media exhaustion), and discontinuance intention as the response. Elsewhere, Cao and Sun (2018) used SOR to study three types of overloads in social media (information, communication, and social) as the stimulus that primes the internal states of exhaustion and regret considered as organisms, which, in turn, motivate users to quit. Lin et al. (2020) focused on the same types of overload (information, communication, and social) and found that they predicted fatigue (the organism) and discontinuance intentions (response) (also see Ma et al., 2022). The effectiveness of the model in explaining corrective behaviors related to compulsive technology and social media use highlights its relevance and applicability in the context of social media abstinence.

3 Hypothesis Development

Drawing on the SOR model, we propose that compulsive social media use acts as the stimulus that drives social media users’ cognitive reaction (attitude toward abstinence) and affective reaction (mood during abstinence). As per SOR, these reactions influence social media abstinence duration (subsequent response) (see Figure 1).

We argue that compulsive social media use can act as a stimulus that drives abstinence efforts. Compulsive social media use captures maladaptive and prolonged engagement with social media to the extent that it impairs essential life functions (Vaghefi & Qahri-Saremi, 2018). Prior research has associated compulsive social media habits with adverse outcomes such as social problems, work-related issues, or reduced

performance (Venkatesh et al., 2019). Such problems can instigate individuals to attempt to modify the maladaptive use behavior and make corrective attempts, such as abstinence.

Based on the SOR model, people tend to react to a stimulus both cognitively and affectively (Eroglu et al., 2003). Reactions that prior studies have considered include perception, belief, attention, memory, or, more dominantly, attitude regarding the stimulus or individual's response to it. Attitude¹ refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). In the IS discipline, researchers have widely used the term attitude as a summative construct that captures the effect of attitudinal processes on behaviors and behavioral intentions (Bhattacharjee & Premkumar, 2004), especially with respect to compulsive technology use (Parboteeah et al., 2009).

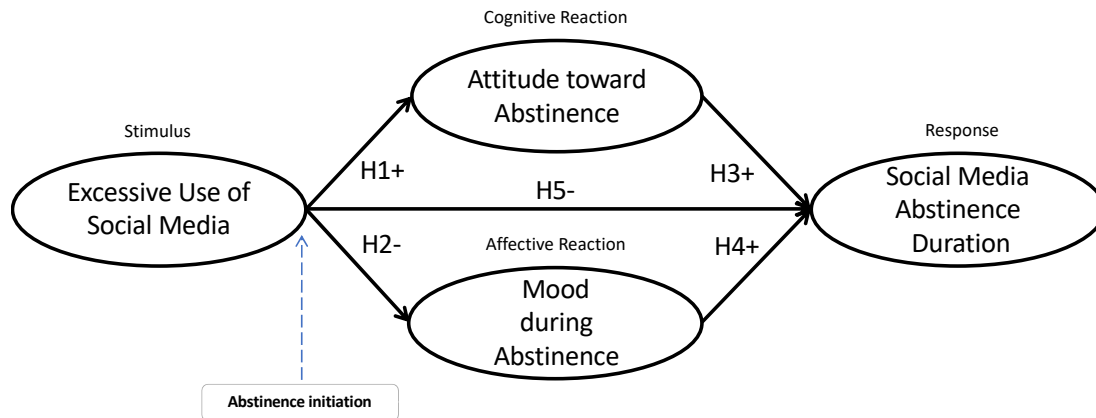


Figure 1. Research Model

We expect compulsive social media use to influence individuals' attitudes toward abstinence. Prior research has shown that attitude about technology use (such as social media), although initially formed based on users' expectations for the technology, results from direct and ongoing user experiences (Bhattacharjee & Premkumar, 2004). From the perspective of SOR, individuals engrossed in compulsive social media use may confront the negative consequences (e.g., reduced work/academic performance or wellbeing), which prompts awareness, self-reflection, and cognitive dissonance (Vaghefi et al., 2020). This internal conflict could help individuals develop a more favorable attitude toward abstinence and recognize the need for behavioral adjustment, such as taking a break from social media. Moreover, individuals who perceive their behavior as problematic may seek to improve their perceived control over their social media use, which could influence their attitudes and influence them to view abstaining from compulsive use more positively.

Research has also shown that compulsive people understand that their behavior and its consequences are problematic and develop a stronger tendency for behavior change (Hirschman, 1992). This effect can be explained via the self-reactive action framework (Bandura, 1998) according to which self-observation (of compulsive use and its consequences in our case) drives a judgment process in which people evaluate corrective actions vis-à-vis their personal and referential (e.g., peer expectation) standards. Indeed, when people realize that the extent to or pattern in which they use social media use is compulsive, they develop a stronger motivation to change their behavior (Osatuyi & Turel, 2020). On social media, affordances such as the visibility of actions to others can increase the fear that one will face negative evaluation and rejection, which can exacerbate reactivity to one's compulsive state (Ali et al., 2021). Thus, we hypothesize that:

H1: Compulsive social media use has a positive relationship with attitude toward abstinence.

The SOR model posits that a stimulus can elicit either positive (e.g., pleasure or enjoyment) or negative (e.g., fear or anxiety) affective reactions (Mehrabian & Russell, 1974; Vieira, 2013). In this paper, we draw on the concept "mood", which represents individuals' overall emotional state (i.e., positive or negative mood

¹Some views of attitude consider it to have three dimensions namely affect, behavior, and cognition. Given that SOR captures affective and behavioral dimensions, in this paper we only focus on the cognitive aspect of attitude (Millar & Tesser, 1989). This approach is consistent with traditional IS research's treatment of attitude (Venkatesh et al., 2003).

states (affect) during periods of social media abstinence) (Venkatesh & Speier, 1999). We argue that, when individuals use social media in compulsive ways, they feel driven to constantly engage with social media, such as to satisfy needs for social interactions (James et al., 2017) or for uninterrupted flow of new information (Vaghefi et al., 2023). Compulsive social media use may also lead to withdrawal symptoms or feelings of missing out when individuals do not actively engage with social media (Abel et al., 2016; Przybylski et al., 2013). During social media abstinence, individuals who used to engage in social media frequently will, therefore, experience negative mood states such as restlessness, frustration, and irritability (Whelan et al., 2020). This reasoning concurs with compulsive behavior research that shows that abstinence generates negative emotions that can contribute to abstinence discontinuance (Winward et al., 2014). Thus, we expect that compulsive use will elicit negative mood states (as compared to positive ones) during abstinence. Accordingly, we hypothesize that:

H2: Compulsive social media use has a negative relationship with mood during abstinence.

We consider maintaining social media abstinence (as captured through abstinence duration) as the approach response to compulsive behaviors. In contrast, reverting back to social media use represents an avoidance response. In line with the SOR model, we hypothesize that a positive attitude toward abstinence increases the likelihood that individuals will engage in approach rather than avoidance behaviors. When people feel favorably toward a target corrective behavior, they are more likely to pursue and execute it (Osatuyi & Turel, 2020). Here, a positive attitude represents an individual's belief that refraining from social media use can provide positive outcomes (e.g., gaining control over use or improved wellbeing), which constitutes a judgment that motivates them to sustain the corrective behavior (abstinence in our case) (Bandura, 1998). That attitude has a positive effect on abstinence behavior also concurs with rich IS use literature that has considered attitude a primary factor that drives user behaviors (Bhattacharjee & Premkumar, 2004). This effect has its roots in rational decision-making frameworks, which assume that people strive for consistency between their behaviors and beliefs. Hence, when people have strong beliefs about a certain behavior and its outcomes (e.g., technology facilitating tasks or creating problems), they are more likely to enact the corresponding behavior (abstinence in our case) (Zanna et al., 2005). Thus, we hypothesize that:

H3: Attitude toward abstinence has a positive relationship with social media abstinence duration

In line with the SOR model and findings from studies on abstinence from compulsive behaviors (Winward et al., 2014), we expect the mood during abstinence (i.e., affective reaction) to influence abstinence duration. According to the SOR model, if individuals experience positive mood states during social media abstinence, it may serve as a form of positive reinforcement that motivates behavior maintenance. This reasoning concurs with the theory of positive emotions (Fredrickson, 2004), which argues that emotions have important implications for human (user) behaviors. Positive mood states can specifically help improve people's ability to cope with the challenges (e.g., intrusive thoughts) that they experience during an abstinence period and also increase their drive for self-control (Fredrickson, 2004).

In contrast, if individuals experience negative mood states during social media abstinence, they may find the experience uncomfortable or distressing, which tends to drive relapse (Winward et al., 2014). Thus, negative mood states could lead to a shorter abstinence duration as individuals seek to alleviate discomfort by returning to social media.

Taken together, positive mood states can assist users in persisting in their abstinence efforts and resisting the temptation to engage in social media use, while negative mood states can motivate discontinuing the abstinence attempt. Thus, we hypothesize that:

H4: Mood during abstinence has a positive relationship with social media abstinence duration such that positive mood states increase abstinence duration, while negative mood states reduce it.

Last, we go beyond SOR and contend that compulsive social media use may have a direct negative relationship with the duration with which one abstains from social media. Compulsion is characterized by frequent, repetitive, and urge-driven use of social media (Wang & Lee, 2020). Hence, higher urge levels can make resistance to social media use temptations very challenging for users (Vaghefi et al., 2023) regardless of their affective and cognitive reactions. Therefore, in situations with high compulsive use, we can expect individuals to generally have low self-control with respect to their social media use (LaRose et al., 2010) and, consequently, more easily resume their old habits and fail to abstain for longer periods of time. Hence, we expect that:

H5: Compulsive social media use has a negative relationship with social media abstinence duration.

4 Methodology

4.1 Research Design

Following a multi-method approach, we conducted two studies using two distinct social media user samples that we recruited from the student population at a large North American university via class announcements and emails. We considered the student samples suitable given that college students, due to their flexible schedules and available free time, often use social media frequently and excessively and, hence, struggle with compulsive use and its undesirable outcomes (Gonzalez et al., 2019; James et al., 2017; Turel & Qahri-Saremi, 2016; Vaghefi et al., 2023; Wang & Lee, 2020). Consequently, to combat these adverse outcomes, many consider corrective action (including abstinence) regarding their social media use (Thomas et al., 2016; Turel & Vaghefi, 2020). We compensated students for their participation with a one-point course credit regardless of whether they participated in the abstinence task or for how long if they did participate in it.

Our empirical studies followed two approaches: 1) variable-centered and 2) person-centered. In the first study, we followed a variable-centered approach by using covariance-based SEM techniques, which suit efforts to study causal relationships among research model factors (see Figure 1). Variable-centered analysis (e.g., using SEM or regression), which has been dominant in IS research, assumes that “the population is homogeneous with respect to how the predictors operate on the outcomes” (Laursen & Hoff, 2006, p. 379). Accordingly, it concentrates on aggregate scores of exogenous variables to explain variance in endogenous outcomes (Meyer & Morin, 2016) and draw conclusions about an entire sample or population (Meyer et al., 2013). In other words, the variable-centered analysis evaluates how independent variables can explain the dependent variable’s variance and, in this way, represents a suitable method for testing hypotheses and relationships among factors in our model (Qahri-Saremi & Turel, 2020).

While this approach has played an instrumental role in explaining IS user behaviors in the IS discipline, recent studies have highlighted the need to shed light on individual differences in users’ behaviors (Negoita et al., 2018; Qahri-Saremi & Turel, 2020; Turel & Qahri-Saremi, 2023), particularly with respect to compulsive social media use (Gonzalez et al., 2019; Kim, 2022; Smith & Short, 2022; Vaghefi et al., 2017). Hence, some researchers have called for person-centered studies (Bergman & Magnusson, 1997; Meyer & Morin, 2016).

Complementing variable-centered results, a person-centered analysis identifies population subgroups based on a unique configuration of a system of variables pertinent to phenomena of interest (e.g., abstinence) (Laursen & Hoff, 2006). Rather than looking at variables in isolation, it uses cluster analysis techniques (particularly LPA) to find subgroups of individuals who share common attributes (i.e., comparable levels of the pertinent factors). Unlike variable-centered analysis, which looks at the aggregate levels of factors and their relationships, a person-centered analysis considers how subgroups of users group together and form typologies. As Qahri-Saremi and Turel (2020, p. 833) explain:

The variable-centered approach assumes that all users in a sample are drawn from a single population and that a single set of averaged parameters (e.g., path loadings) are estimated for the whole sample. The person-centered approach relaxes this assumption, and considers the possibility that the sample might in fact reflect multiple subpopulations characterized by different sets of parameters.

In other words, the primary distinction between these two approaches lies in the unit of analysis; while a variable-centered analysis primarily focuses on the variables, a person-centered analysis focuses on individuals or groups of individuals (Muthén & Muthén, 2000). In this way, a person-centered analysis can help one understand in a more nuanced way user behavior differences that one might overlook in variable-centered analysis² (Bergman & Magnusson, 1997).

Drawing on this complementary perspective, in the second study, we conducted a person-centered analysis to explore the variations among users’ abstinence duration predictors. Using the mixture of factors that we

² We should note that these two approaches to analyzing data do not mutually exclude each other, and researchers often use both in combination in their studies (e.g., Bouncken & Fredrich, 2016; Hoffmann et al., 2014; Melas et al., 2014; Qahri-Saremi & Turel, 2020; Turel & Qahri-Saremi, 2023).

validated in the first study and the LPA, we propose a typology of social media users' abstinence behaviors (see Figure 2 for details of our research procedure).

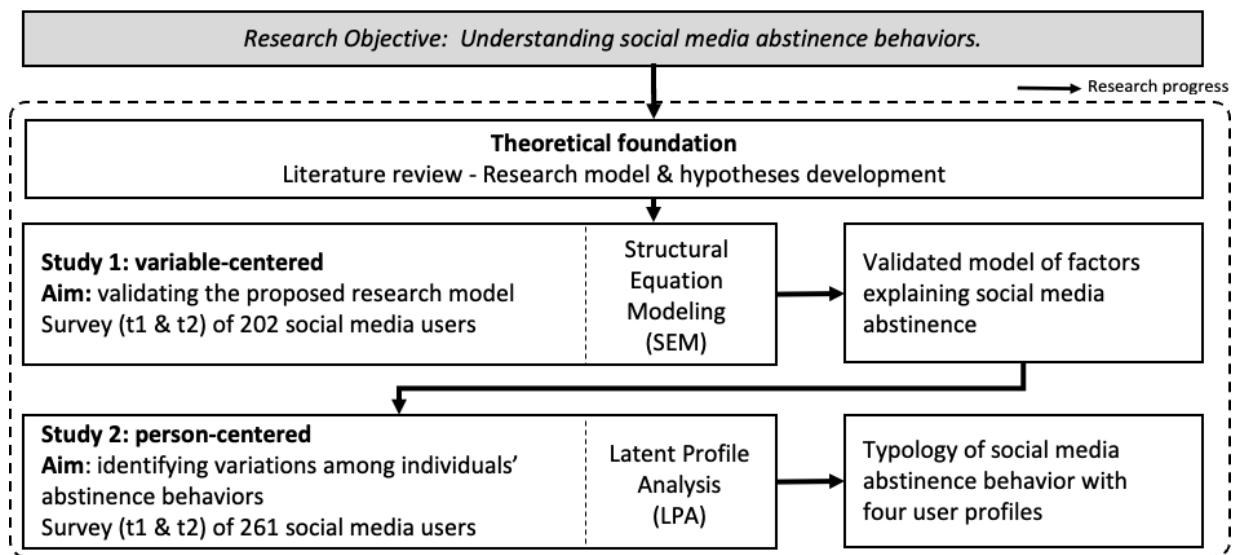


Figure 2. Research Procedure

5 Study 1: Variable-centered Analysis of the Research Model

5.1 Data Collection

We recruited participants from social media users who had at least one active social media account that they used on a regular basis. The first study comprised two stages. In the first stage (t₁), class instructors introduced the study to students as a study on self-control. The instructors then invited participants to complete the initial survey, which gathered data on demographics, their social media accounts, compulsive use, and their attitudes toward abstinence from social media.

Following the survey, we disseminated information about abstaining from social media platforms that participants used most frequently. Participation in the abstinence exercise was completely voluntary and could take any number of days up to one week³. We captured participants' abstinence via voluntary deactivation followed by activation of the social media account (could be 0-7 days after deactivation). To accurately measure how long participants abstained from using social media, a research assistant monitored their reported social media accounts several times a day throughout the week and marked whether they reactivated their accounts at the end of the participants' break. In addition to our objective measurement, we asked participants to self-report how long they abstained from using social media. We required them to submit and upload screenshots that depicted account deactivation and activation with dates. At the end of the week (t₂), they filled out a second survey, which included questions pertaining to the remaining variables in the model.

Among the 275 invitees, 233 filled out the first survey, and 202 (73%; age 18-29, $M = 20.2$, $SD = 1.54$, 43% women) completed both surveys and the abstinence task⁴. From this sample, 46 percent managed to abstain from using social media for one week. The social media platforms they abstained from included Facebook (45%), Twitter (24%), Instagram (16%), Snapchat (8%), and others (7%). They used these platforms on average 6.42 days ($SD = 1.23$) per week for 1 hour and 40 minutes per day ($SD = 1.46$).

³ This choice concurs with prior studies that have examined social media abstinence (Stieger & Lewetz, 2018; Turel & Vaghefi, 2020). Longer data collection, although possible, would reduce data's reliability and accuracy. Instructors provided deactivation/disconnection instructions.

⁴ We ran a series of ANOVA to check if there is a difference between 31 individuals who did not finish the study and 202 who completed it in terms of age, gender, and daily social media use. The results showed that there was no significant difference between the samples (all p -values > 0.1), suggesting that non-response bias was an issue.

Before conducting the study, we received qualitative feedback from 11 social media users based on which we made minor wording adjustments to some instructions. We then pilot tested the survey with 79 social media users. Results from the pilot study demonstrated the validity and reliability of the scales (see Appendix A for details). We also checked for common method bias and found that it did not pose a major concern (See Appendix B for details).

5.2 Measurements

We adapted measurement items (see Appendix C) mostly from well-established measures. We measured compulsive social media use at t_1 using Andreassen et al.'s (2012) scale ($\alpha = 0.83$, average variance extracted (AVE) = 0.54) that captures addiction-like symptoms social media use generates. We measured attitude toward abstinence at t_1 with an attitude toward use scale (Morris & Venkatesh, 2000), which we adapted to the abstinence context ($\alpha = 0.75$, AVE = 0.66). We captured mood during the abstinence period at t_2 by using an extended version of the visual analogue mood scale (VAMS) (van Rijsbergen et al., 2012) ($\alpha = 0.91$, AVE = 0.85).

We captured social media abstinence duration via two items (as described earlier): 1) breaks in the abstinence that the research team logged and 2) participants' self-reported numbers ($\alpha = 0.95$, AVE = 0.95). The communal variance captured abstinence because each measure alone had limited accuracy (e.g., the activation does not necessarily mean users immediately used social media again, and self-reported days may not be accurate).

We captured control variables that may influence our model and that prior research has considered relevant: age, gender, and daily social media use. We also collected participants' social media choices but did not use them in analyses because each subset proved insufficient on its own.

5.3 Data Analysis and Results

We estimated reliability, correlations, and descriptive statistics with SPSS 26. To test the model and hypotheses, we used the structural equation modeling faculties in SPSS AMOS 26. We employed bootstrapping with 2000 re-samples for parameter estimation to overcome distributional assumptions (Mooney & Duval, 1993) and to generate confidence intervals for the direct and mediated paths (Cheung & Lau, 2008).

We report descriptive statistics and correlation among study variables in Table 1. Since we established our constructs as reliable, we commenced with estimating a confirmatory factor analysis model. It presented a fair fit⁵ ($\chi^2(71) = 165.0$, CFI = 0.94, IFI = 0.94, RMSEA = 0.080). We next estimated the structural model with age, gender, and daily social media use as controls. This model also produced a fair fit ($\chi^2(102) = 222.0$, CFI = 0.93, IFI = 0.93, RMSEA = 0.078). We found support for all hypotheses except one. While we found support for H1-H4, we did not find support for H5 (the direct effect of compulsive use on abstinence duration) ($\beta = -0.04$, p -value > 0.1), which suggests that attitude and mood fully mediated the effect of compulsive social media use on abstinence duration. The model explained 22.4, 15.0, and 32.5 percent of the variance in mood during abstinence, attitude toward abstinence, and abstinence duration, respectively. Figure 3 depicts the results (unstandardized coefficients, 95 percent bias-corrected confidence intervals for coefficients in square parentheses, and p -values).

Because our proposed model implies that attitude and mood mediate the effect of compulsive social media use on abstinence duration, we examined the indirect paths (one at a time) with bias-corrected confidence intervals. The indirect effect of compulsive use on abstinence duration through attitude was significant and positive (0.32 (0.13; 0.59), $p = 0.005$), but the indirect effect through mood was non-significant (-0.11 (-0.37; 0.02), $p = 0.111$). These findings mean that, while attitude toward abstinence mediated the relationship between compulsive use and abstinence duration, mood did not.

⁵ The suggested criteria for a fair fit include $\chi^2/df < 5$ (Hu & Bentler, 1998), CFI > 0.90 (Bentler & Bonett, 1980), IFI > 0.90 (Bollen, 1989), and RMSEA \leq 0.08 (Browne & Cudeck, 1993)

Table 1. Descriptive Statistics and Reliability Scores

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)
(1) Compulsive use of social media	2.94	1.06	1					
(2) Attitude toward abstinence	5.35	0.97	0.25**	1				
(3) Mood during abstinence	4.67	1.07	-0.26**	-0.06	1			
(4) Abstinence duration	5.56	1.65	0.06	0.48**	0.12	1		
(5) Age	20.2	1.54	0.16*	0.14*	0.02	0.20**	1	
(6) Gender (0 = male, 1 = female)	0.43	0.50	0.24**	0.20**	-0.07	0.14*	0.04	1
(7) Daily use time	1.66	1.46	0.34**	-0.01	0.07	0.10	-0.03	0.29**

* Correlation is significant at the 0.05 level (2-tailed).
 **Correlation is significant at the 0.01 level (2-tailed).

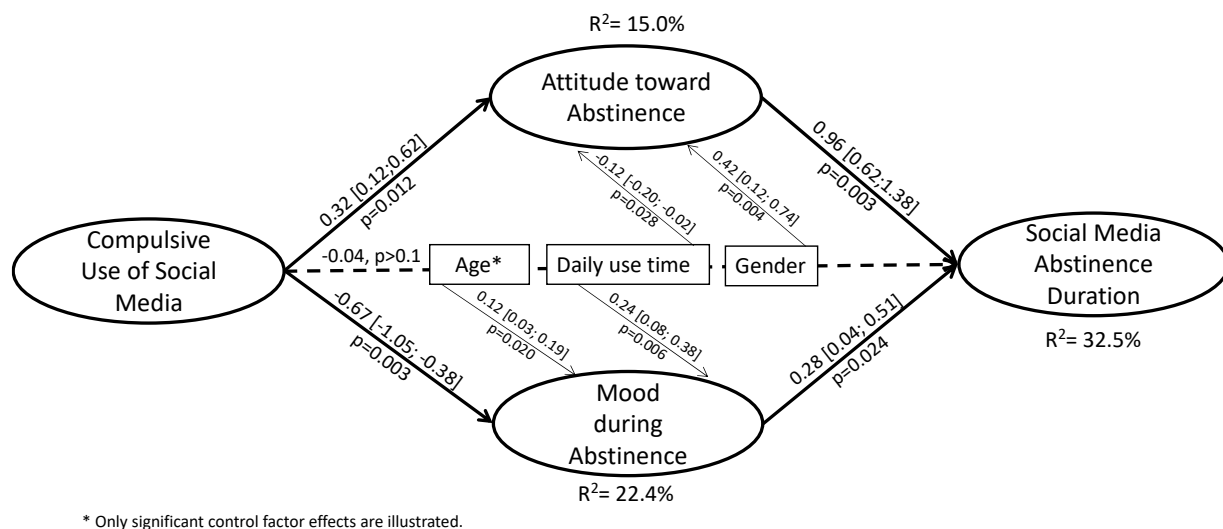


Figure 3. Structural Model

5.4 Summary of Findings

Based on the SEM analysis, we found support for the direct relationships between most model variables (H1-H4 supported, H5 not supported). Furthermore, in assessing the indirect paths implied by the model, we found that attitude is a significant mediator of the effect of compulsive use on abstinence duration, but mood is not. These variable-centered results provide strong support for the proposed model. Still, as we note above, variable-centered analyses portray only the relationships between the model constructs. Via person-centered analysis, we can assess users in a more holistic way and identify the complex interactions among factors that would be difficult to observe through a variable-centered analysis.

Using person-centered analysis can be particularly helpful in studying social media abstinence. Prior studies that have looked at abstaining from social media (ranging from one day to one week) have reported a 40-60 percent failure rate for these efforts (Fernandez et al., 2020; Schoenebeck, 2014; Stieger & Lewetz, 2018). These rates suggest variations among individuals regarding setting abstinence goals and maintaining them. For instance, depending on unique configurations (e.g., low, medium, or high) of compulsive use, attitude, and mood, abstinence duration may vary among social media user subgroups. Given that current research on compulsive use and corrective user behaviors in IS research primarily takes a variable-centered approach, a person-centered approach can serve as a valuable approach toward understanding social media abstinence. More specifically, it can help one identify variations among user behaviors and user subpopulations with distinct configurations. To pursue this complementary approach, we conducted a second study.

6 Study 2: Person-centered Analysis and Typology

6.1 Data Collection and Measurements

We used a similar data-collection procedure, research procedure, and measurements in the second study as the first. Participants (whom we recruited from two large universities in the US) responded to two surveys and finished an abstinence task. Of the 327 individuals invited through our research call, 261 (80%; age: 18-31, $M = 21.9$, $SD = 4.62$, 39% women) completed the surveys and abstinence task (Facebook 28%, Twitter 19%, Instagram 28%, Snapchat 24%, others 1%), and 47 percent of this sample maintained their abstinence for one week. As in the first study, the measurements all showed acceptable psychometric properties.

6.2 Data Analysis and Results

To develop our typology, we followed Asparouhov and Muthén's (2014) three-step LPA procedure using a mixture analysis (using Mplus v7.4), which included 1) identifying the number of optimal profiles, 2) estimating the measurement error in the optimal solution, and 3) introducing the distal outcome variable in the analysis. Given that we had no prior knowledge about the possible number of profiles, we first ran LPA using standardized scores of the independent variables—compulsive use, attitude, and mood—as input and abstinence duration as the outcome. To find the optimal typology and number of user profiles, we drew on three criteria. First, we preferred the profile with the lowest Bayesian information criterion (BIC). Second, we used the parametric bootstrapped likelihood ratio (PBLR) test to compare the fit of two nested models, where one model is a reduced version of the other (e.g., three vs. four profiles) (Nylund et al., 2007). Third, we evaluated each LPA output based on interpretability and parsimony (Hagenaars & McCutcheon, 2002). Following prior recommendations (Wade et al., 2006), we ran LPA iteratively for one to six profile solutions. Considering the criteria and interpretability of the results, we found a four-profile typology as the optimal solution that reasonably explained existing variations among abstinence behaviors. The four-profile solution had the lowest BIC (see Table D1 in Appendix D). The PBLR test also showed that four profiles better fit the data than other possible solutions (e.g., three profiles) (Table D2 in Appendix D). Table 2 shows the configurations for each profile. The standardized mean scores and errors for each profile also appear in Figures D1 and D2 in Appendix D.

LPA results showed significant variations among our participants when considering the independent variables. This variability accounted for differences in abstinence duration among individuals with some being able to sustain it for longer or shorter periods than others.

Table 2. LPA Results (Standardized Scores) and Typology

Profile	1 (challenged strivers)	2 (moderate strugglers)	3 (successful maintainers)	4 (steadfast controllers)
Config				
Size N(%)	25 (10%)	49 (19%)	145 (55%)	42 (16%)
1) Compulsive use of social media	High 0.21	Med-low -0.15	Med-high 0.12	Low -0.31
2) Attitude toward abstinence	High 0.86	Low -1.30	Med-high 0.59	Low -0.74
3) Mood during abstinence	Very low (negative) -2.18	Med-high (positive) 0.44	Med-high (positive) 0.39	Low (negative) -0.98
4) Abstinence duration (outcome)	Very low -0.29	Med-low -0.06	Med-high 0.03	High 0.09

6.2.1 Profile 1 (Challenged Strivers)

These individuals compulsively use social media at a high level and possess a high attitude towards abstinence, which indicates a positive belief in the value of abstaining from social media despite their compulsive use. However, they feature the most negative mood states among all profiles. As a result, they abstain for the shortest duration among all four profile types, which suggests that they struggle to sustain

abstinence for a significant time period. Hence, we refer to this profile as “challenged strivers” because they strive to abstain from social media but face significant challenges in doing so.

6.2.2 Profile 2 (Moderate Strugglers)

These individuals compulsively use social media at a medium to low level and have a low attitude towards abstinence (lowest among the four profiles), which indicates that they lack a positive inclination toward abstaining from social media. During abstinence periods, they have a rather positive mood (moderate to high). However, they abstain for a relatively shorter period than average users. Given their characteristics, we label this profile “moderate strugglers” because, even though they compulsively use social media at a lower level and have a relatively positive mood during abstinence, they still struggle moderately to maintain abstinence for longer periods.

6.2.3 Profile 3 (Successful Maintainers)

These individuals compulsively use social media at a moderate to high level and have a moderate to high attitude towards abstinence, which indicates that they have a moderately positive inclination towards abstaining from social media. During abstinence, they have a relatively positive mood (moderate to high). Notably, they also have a moderate to high abstinence duration (only lower than fourth profile), which suggests that they can maintain their abstinence for a considerable length of time. Therefore, we refer to this profile as “successful maintainers” because they can successfully sustain abstinence periods and exhibit a positive outlook during those times.

6.2.4 Profile 4 (Steadfast Controllers)

These individuals exhibit compulsive social media use at low levels and have good control over their use behaviors. Not surprisingly, they also have a low attitude toward abstinence which indicates that they have little motivation to abstain (or find little benefit in abstaining) from social media. In addition, their mood during abstinence periods remains negative, which suggests they may experience unpleasant feelings during abstinence. Still, they demonstrate remarkable resilience and determination and successfully maintain abstinence for a significant duration (longest among all profiles) most likely because they have good control over their social media use. These individuals persevere in resisting social media’s temptations. Hence, we label them “steadfast controllers” because they exhibit strong self-control and resilience in abstaining from social media for extended periods despite facing negative emotions and low initial motivation.

6.3 Summary of Findings

In the second study, we identified four distinct user profiles that each represent a unique configuration of antecedent variables and outcomes related to social media abstinence duration. While our proposed model suggests that compulsive use can influence abstinence duration through cognitive and affective pathways, the typology provided additional insights. These findings can help one develop customized approaches for users who seek a break from social media. The findings demonstrate that, for individuals in the first profile (high compulsive use and very negative mood), abstaining from social media posed significant challenges. Nevertheless, for individuals in the second profile, a positive mood compensates for a low attitude toward abstinence and enables individuals to maintain their breaks. For individuals in the third profile, higher attitude and mood levels helped individuals suppress the negative effects of compulsive use on abstinence and enabled reasonable abstinence duration. Finally, for individuals in the fourth profile, low compulsive use compensated for low attitude or negative mood states during abstinence and enabled individuals to take a more extended break from social media.

These person-centered findings concur with our findings from the first study. In the first study, we found that compulsive use during abstinence is positively associated with attitude and negatively associated with mood during the break. We also found these factors to have a positive association with abstinence duration. The typology, in turn, shows how unique levels of these factors may exist among user subpopulations. For instance, for some (10% in the first profile), high compulsive use and very negative mood provide detrimental effects on abstinence even though they have a higher attitude toward abstinence than others. For another group of users (19% in the second profile), lower compulsion levels (compared to the first and third profiles) tied with lower attitudes create a challenge for maintaining abstinence even though these users have more positive moods during abstinence. For most users (55% in the third profile), moderate compulsive use exists with moderate attitude (higher than the second and fourth profiles but lower than the first) and mood levels, and an above-average abstinence duration. Finally, users in the fourth profile (16%) have low compulsion

and attitude levels in addition to a negative mood. However, they have the highest abstinence duration likely because they do not depend on using social media and can easily detach from it without experiencing cravings or other withdrawal symptoms. Overall, the person-centered analysis adds nuanced insights into our proposed model and research model factors that we validated in the first study.

7 General Discussion

In this study, we examined how people can maintain abstinence behaviors after initiating them. Drawing on the SOR model (Mehrabian & Russell, 1974), we proposed a theoretical model illustrating that compulsive social media use acts as a stimulus that elicits cognitive and affective reactions in the forms of attitude toward abstinence and mood during abstinence. These reactions, in turn, facilitate or challenge social media abstinence. Using data collected from social media users who volunteered to take a break from social media use in the first study, we found empirical support for the model and hypotheses (variable-centered approach). We complemented these results by conducting a person-centered analysis in the second study. Using a separate dataset, we developed a typology with four distinct profiles (namely, challenged strivers, moderate strugglers, successful maintainers, and steadfast controllers). Each profile showcased a unique configuration of compulsive use, attitude, mood, and abstinence duration and, thus, provided a more granular picture of social media abstinence patterns.

7.1 Theoretical Contributions

First, the paper provides support for the significance and prevalence of social media abstinence among individuals. Prior research has studied several social media behaviors related to the adoption, use (Wang et al., 2019), and compulsive use of these technologies (Hou et al., 2018; Luqman et al., 2017; Turel, 2015). Nonetheless, few studies have examined individual behavior change in the presence of maladaptive social media use (Thomas et al., 2016), and fewer studies have still examined abstinence as a way to overcome adverse outcomes (Tromholt, 2016; Turel et al., 2018). We extend this literature by shedding light on abstinence duration (i.e., when one takes a break from using social media). Using the SOR model that researchers have used to explain behavior change in other compulsive behavior domains (Luqman et al., 2017) and by accounting for both affective and cognitive reactions, we provide a theoretical and empirical explanation for social media abstinence duration (32% variance explained). Our approach to studying abstinence goes beyond simply examining the time at which individuals initiate these behaviors (e.g., by studying users' intentions) (Soliman & Rinta-Kahila, 2019) and considers the duration for which individuals maintain them.

Second, our findings highlight the limited ability of compulsive use to explain social media abstinence duration (Turel & Vaghefi, 2020) and show that the SOR model provides a strong foundation for explaining such behaviors. It also provides both theoretical and empirical evidence that compulsive use has two types of effects and, hence, acts like a double-edged sword in explaining abstinence duration. On the one hand, compulsive social media use instigates a cognitive reaction in the form of a positive attitude toward abstinence. On the other hand, individuals who experience compulsive social media use symptoms, such as feeling that they are missing out or experiencing withdrawal (Stieger & Lewetz, 2018), tend to have negative mood states once abstinence starts. These results extend prior research findings suggesting that individuals will initiate corrective behaviors (e.g., taking a break or quitting use) when a pre-existing or compulsive use or an addiction exists (Luqman et al., 2017; Soliman & Rinta-Kahila, 2019; Turel, 2015). In this way, our findings show that individuals do not automatically initiate and maintain abstinence as a corrective behavior, nor do they do so as a natural response to compulsive use. Furthermore, the user profiles revealed subgroups of individuals whose abstinence behavior, at times, is under the influence of each one of the factors (e.g., low attitude for moderate strugglers); the strength of these factors determines different outcomes (i.e., abstinence duration) for these profiles. In analyzing the mediation paths further, we found that attitude could mediate the effect of compulsive use on abstinence duration.

Third, our person-centered results provide a more nuanced way to view social media abstinence beyond the variable-centered findings and improve our knowledge about variations among individuals' abstinence. Our typology points to four distinct profiles with notable variations in the considered variables that can produce markedly different abstinence outcomes. Depending on the configurations of compulsive use (low, med-low, med-high, high), attitude (low, med-low, med-high, high), and mood (very low, med-low, med-high, high), individuals may hold their abstinence longer or shorter than others.

While, to our knowledge, our typology constitutes the first typology on social media abstinence, our findings in some instances do concur with profiles that prior research has identified. For instance, Vaghefi et al. (2017) proposed an addiction liability typology and found that only a small subgroup of users (7%) showed signs of IT addiction and had difficulty controlling their use. This group's behavior resembles the first profile (challenged strivers) that we identified. Prior research has also discussed a similar group, referred to as "hooked" users (or hooked addicts in Eiser and Gossop (1979)), that has high addiction levels but low tendencies to discontinue social media use (Qahri-Saremi et al., 2021). Vaghefi et al. (2017) also characterized a user profile (thoughtful, 15% of the sample) who use IT at low levels and carefully avoid developing any dependency on it. This profile resembles our fourth user profile (steadfast controllers) who have low levels of compulsive use and have no problem maintaining their abstinence for a considerable period. Overall, researchers have made calls to use a person-centered approach to balance predominantly variable-centered literature (Meyer et al., 2013), particularly in compulsive use contexts (Qahri-Saremi et al., 2021), and our work here extends the recent findings in this domain.

7.2 Practical Implications

From a practical perspective, our findings point to the challenges of implementing social media abstinence and shed light on the factors that directly or indirectly determine its duration. We identified individuals' positive attitude toward abstinence as an important factor that mediates social media abstinence. Thus, manipulating these factors could serve as a target for therapists treating people with compulsive social media use and for users who want to self-regulate social media use through abstinence. Future research should conceive ways (e.g., training, intervention, or fear appeals) to change people's attitude toward abstinence. In addition to attitude, our findings suggest that mood management also influences abstinence duration and should also serve as a target for therapists and individuals. We found that individuals who use compulsively social media use at higher levels tend to experience negative mood states during abstinence. Consistent with the resource allocation model (Ellis & Ashbrook, 1988), the negative mood states could shrink the required resources to maintain abstinence and control lapses. Therefore, individuals should pay attention to those occasions when a negative mood exists (e.g., when individuals feel bored or sad) as it may trigger lapses. Prior findings have shown that, although individuals may experience withdrawal shortly after initiating their social media abstinence (Stieger & Lewetz, 2018), these negative states wear off as one maintains abstinence (Turel & Vaghefi, 2020).

Furthermore, our typology showed that researchers need to consider the combined effects of compulsive use, attitude, and mood to evaluate individuals' abstinence behaviors, and a person-centered approach toward treatments can be helpful in this regard. For some individuals (first profile / challenged strivers), a highly negative mood state during abstinence can override the positive effect of attitude and, thus, lead to shorter abstinence. However, for some others (second profile / moderate strugglers), a positive mood state can offset the low attitude toward abstinence and lead to a short but reasonable abstinence experience. These findings suggest that, for individuals in the first two profiles, training and monitoring attitude could provide better results, while for those in the third profile, such efforts should focus on improving mood via mood management. Nevertheless, the majority of users (third profile successful maintainers) appear to be able to have a fair abstinence experience by having a good (more than average) level of attitude and a positive mood during abstinence. For this group, individuals could focus on reducing the extent to which they compulsively use social media by increasing their awareness and self-regulation with social media and devices that provide access (e.g., internet-enabled smartphones). Once compulsive use reaches a reasonably low level (e.g., steadfast controllers), abstinence (if necessary) will ensue without much support from cognitive and affective mechanisms. As we noted above, one can obtain such detailed insights about user subpopulations only through person-centered analysis (such as LPA, which we used in this paper).

7.3 Limitations and Future Research

Future research can extend our findings. First, we examined abstinence with a limited population segment (university students) and limited social media platforms. Researchers could improve the generalizability of our findings by extending this study to other social media platforms or relevant technologies such as smartphones, online games, and/or online shopping or to other populations. Second, we considered abstinence from social media for only up to seven days. A promising research avenue would involve examining longer-term abstinence and making comparisons about the outcome of such efforts vis-à-vis short-term social media abstinence. Third, we gave instructions for abstinence and provided incentives for participation. Even though people volunteered to take on this challenge and we provided credit to anyone despite their abstinence duration, readers should take caution when interpreting our results. While we found

what occurs once people begin abstinence, participants' decisions to engage with abstinence require further scrutiny. We note, however, that receiving instructions for abstinence, like the one we study here, can be common. For instance, friends, peers, teachers, parents, and therapists can instruct compulsive users to abstain from social media use, but, in many cases, they cannot fully enforce it. Future research could examine if our model holds when people initiate abstinence themselves rather than after someone else asks them to do it. Furthermore, conducting experiments on social media abstinence (i.e., using abstinence as treatment vs. control groups) represents a promising avenue for future research.

Fourth, we studied abstinence from one social media; however, some participants may have conceivably used other social media platforms or other hedonic applications more frequently (e.g., videogames) while doing so. Future studies should extend our findings to situations where people abstain from various social media platforms (e.g., two or more platforms). Fifth, we used relatively lax goodness of fit criteria for model fit. Stricter criteria could require a better fit. Lastly, we acknowledge that we used one specific theoretical lens (SOR) and provided a partial picture of what determines the social media abstinence duration. For parsimony reasons, we focused on key, overarching cognitive (attitude) and affective (mood) organismic reactions in our model. While these factors explained 32.5 percent of the variance in abstinence, other factors, beyond our scope and the SOR model, can possibly affect one's social media abstinence. Examining other factors, such as users' personality (Vaghefi & Qahri-Saremi, 2018), self-esteem (Andreassen et al., 2017), or needs (James et al., 2017), represents a promising avenue for future research. Similarly, considering additional theoretical lenses, such as focusing on stress (Califf et al., 2020), can better explain behavior and duration.

8 Conclusion

Given social media's ubiquity and pervasiveness, individuals can sometimes find themselves using it in compulsive ways. Consequently, many users try to take a break from social media use. Nonetheless, social media abstinence appears to be challenging and sometimes short-lived. In this paper, we take an initial step toward understanding the key factors that explain social media abstinence duration from the SOR perspective. In our first study, we identified the critical role of attitude toward abstinence and mood during abstinence in translating compulsive use into social media abstinence. In our second study, we proposed a typology and provided additional insights on variations among abstinence behaviors. We hope these findings instigate further research on this theoretically and practically important topic.

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Appendix A: Pilot Study Details

We conducted a pilot study to evaluate the psychometric properties of the factors we studied using a different sample of 79 social media users who we recruited from two introductory business classes at two North American universities (one public and one private). We recruited participants via class announcements. Pilot testing results (see Table A1) confirmed the internal consistency of the factors (both Cronbach's α s and composite reliability scores > 0.7) (Cortina, 1993; Fornell & Larcker, 1981). Furthermore, the factors showed acceptable convergent and discriminant validity (square root of AVE scores > 0.7 and larger than correlations with other constructs) (see Table A2). In addition, the item loadings were all above 0.7 and the cross-loadings were below 0.3 (see Table A3). Finally, data had a reasonably normal distribution (absolute value of skewness and kurtosis indices < 1.6).

Table A1. Descriptive Statistics and Reliability Scores for the Pilot Study (n = 79)

	Mean	SD	Composite reliability	Cronbach's alpha	Kurtosis	Skewness
1) Compulsive use of social media	2.80	1.10	0.82	0.85	-0.53	0.43
2) Attitude toward abstinence	5.43	0.97	0.76	0.75	-0.36	-0.26
3) Mood during abstinence	4.55	1.09	0.91	0.91	1.56	-1.17
4) Abstinence duration	5.60	1.59	0.96	0.93	1.39	-1.35
(5) Age	20.13	1.38	-	-	-	-
6) Gender (0 = male, 1 = female)	0.44	0.50	-	-	-	-
7) daily use time	1.80	1.10	-	-	-	-

Table A2. Correlations Table & Average Variance Extracted (Bold, Diagonal)

	(1)	(2)	(3)	(4)
1) Compulsive use of social media	0.511			
2) Attitude toward abstinence	0.310**	0.512		
3) Mood during abstinence	-0.295**	-0.072	0.918	
4) Abstinence duration	0.081	0.528***	0.144*	0.913

* Correlation significant at the 0.05 level (2-tailed).
 ** Correlation significant at the 0.01 level (2-tailed).
 *** Correlation significant at the 0.01 level (2-tailed).

Table A3. Cross-loadings

	Factor			
	(1)	(2)	(3)	(4)
t1Compulsive use_1	0.71	-0.14	0.02	-0.04
t1Compulsive use_2	0.81	-0.09	0.17	-0.08
t1Compulsive use_3	0.80	-0.22	-0.06	0.07
t1Compulsive use_4	0.92	0.20	0.03	-0.06
t1Compulsive use_5	0.72	0.07	-0.11	0.04
t1Compulsive use_6	0.71	-0.06	-0.17	0.21
t1Attitude to Abstain_1	0.13	0.30	0.06	0.70
t1Attitude to Abstain_2	-0.14	-0.07	0.03	0.84
t1Attitude to Abstain_3	0.09	-0.16	0.03	0.71
t2Mood_1	-0.01	0.98	0.04	-0.01

Table A3. Cross-loadings

t2Mood_2	-0.01	0.80	0.05	-0.07
t2Mood_3	-0.03	0.87	-0.10	0.10
AbstinenceDays_1	0.02	-0.04	0.90	0.00
AbstinenceDays_2	-0.07	0.03	0.84	0.11

Appendix B: Common Method Variance Assessment

To mitigate the potential for common method variance (CMV) to influence our results, we implemented various procedural and statistical remedies. First, we used different question-answer formats and randomized the order of items to reduce any systematic biases. Second, in both studies, we collected data in two separate waves to psychologically separate construct measures and further reduce the likelihood that CMV influenced our results (Podsakoff et al., 2003). Third, we used an objective measure of abstinence duration and then triangulated this data with the self-reported duration from users (see measurement section for details) and found significant relationships. These remedies lessen the likelihood that CMV biased our results (Siemsen et al., 2010).

Statistically, we followed the common latent factor (CLF) procedure (MacKenzie & Podsakoff, 2012) and included a latent factor representing CMV in the measurement mode to capture the method-specific shared variance among constructs' indicators. We then estimated the measurement model both with and without CLF and checked the differences in loading between the two models. The largest difference between loadings in the first and second studies was 0.146 and 0.109, respectively. Given that all the differences did not exceed the recommended 0.2 threshold (Podsakoff et al., 2003), we conclude that CMV did not pose a major concern in our analyses.

Appendix C: Measures

Table C1. Measures

Measure	Items
<p>(t₁) Compulsive social media use (Andreassen Et al., 2012)</p>	<p>How often during the last year have you (very rarely (1) to very often (7)):</p> <ul style="list-style-type: none"> • Spent a lot of time thinking about the social media site or planned to use it? • Felt a growing need to use the social media site? • Used the social media site in order to forget about personal problems? • Tried to cut down on the use of the social media site without success? • Become restless or troubled if you have been prohibited from using the social media site? • Used the social media site so much that it has had a negative impact on your job/studies?
<p>(t₁) Attitude toward abstinence (Morris & Venkatesh, 2000)</p>	<p>All things considered, abstaining from using this social media site is a:</p> <ul style="list-style-type: none"> • Bad idea ... good idea • Foolish move ... smart move • Negative thing ... positive thing
<p>(t₂) Mood during abstinence period (van Rijsbergen et al., 2012)</p>	<p>My overall mood since I started abstaining from using the social media site was:</p> <ul style="list-style-type: none"> • Very bad ... very good • Very unpleasant ... very pleasant • Very depressed ... very cheerful
<p>(t₂) Social media abstinence duration</p>	<ul style="list-style-type: none"> • Objective abstinence duration based on deactivation and activation recorded by the research assistant (0-7) • Self-reported abstinence duration during the week of study (0-7)
<p>Controls</p>	<p>Age, Sex (0 = male; 1 = female), daily use time (hours), social media platform.</p>

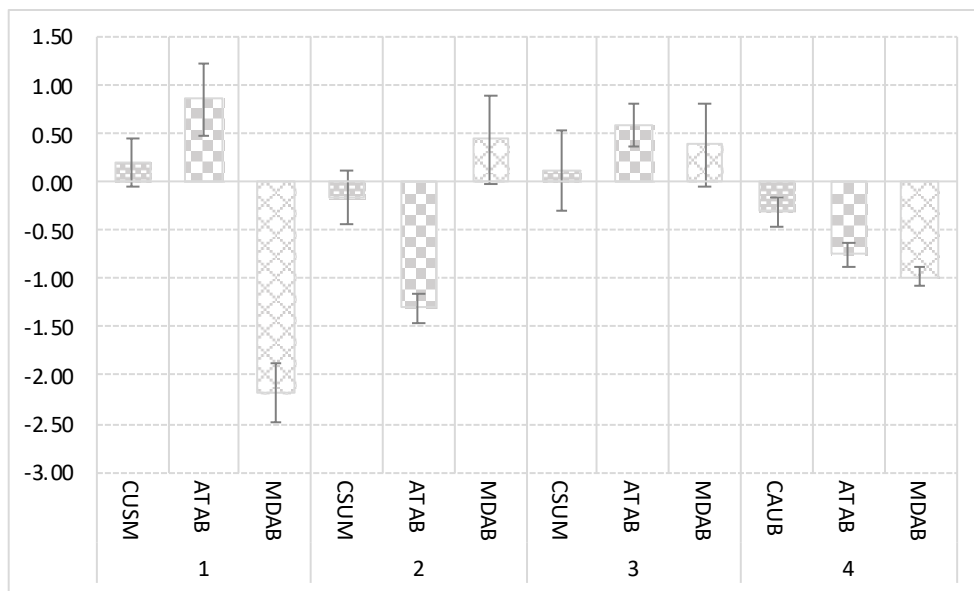
Appendix D: LPA Results

Table D1. BIC Results

Profiles	BIC
2	2214.96
3	2199.10
4	2173.82
5	2179.55
6	2201.21

Table D2. PBLR Test Results for 3 (H0) Versus 4 Profiles

H0 loglikelihood value	-1071.205
Two times the loglikelihood difference	27.606
Difference in the number of parameters	4
Approximate P-value	0.0000
Successful bootstrap draws	20



CUSM: Compulsive Use of Social Media
ATAB: Attitude toward Abstinence
MDAB: Mood during Abstinence

Figure D1. LPA Results showing Configurations of Identified Profiles (Standardized Means and Standard Errors)

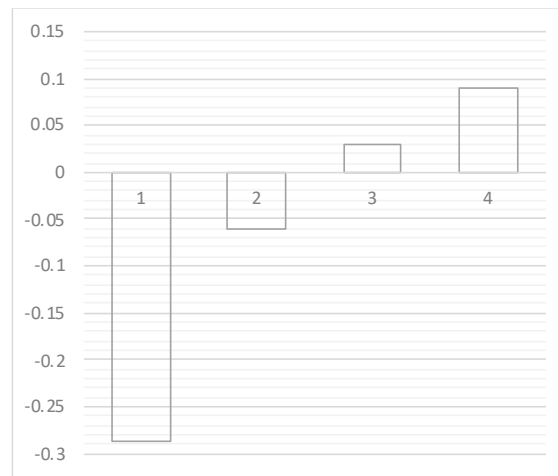


Figure D2. Social Media Abstinence Duration (Distal Outcome) for Identified Profiles

About the Authors

Isaac Vaghefi is an assistant professor of information systems at Baruch College, The City University of New York. His research primarily focuses on the negative aspects of technology use, especially technology addictions and the use of technology in healthcare. His papers have been published in *Information Systems Research*, *Information Systems Journal*, *Journal of the American Medical Informatics Association*, *Communications of the Association for Information Systems*, and others and received best paper awards at conferences such as International Conference on Information Systems, Hawaii International Conference on System Sciences, and HCI International. He has also served as mini-track co-chair and associate editor for several academic conferences, including the ICIS, HICSS, AMCIS, and ECIS. His work has been featured in media outlets, including The Washington Post, PBS, CBS, Fox News, Huffington Post, and Men's Health.

Ofir Turel is a professor of information systems at the School of Computing and Information Systems at the University of Melbourne. His research interests include a broad range of behavioral, bio-physiological, and managerial issues related to information systems and technologies. He has published journal papers in business, research methods, psychology, psychiatry, and medical journals, including such IS journals as *MIS Quarterly*, *Journal of Management Information Systems*, *MIT Sloan Management Review*, *Journal of the Association for Information Systems*, *European Journal of Information Systems*, and *Communications of the ACM*. His research has been featured in numerous media outlets, including TV, radio, podcasts, and newspapers such as The Wall Street Journal, CBC, CNET, Times Higher Education, Rolling Stone, and PBS.

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