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A theory of social media dependence: Evidence from microblog users



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ABSTRACT

Anecdotal evidence suggests that problematic use of social media has become prevalent among a large proportion of users and led to significant behavioral and psychological problems. Nevertheless, theory-driven investigation into this issue is still relatively scarce, and the few existing studies tend to adopt only a conceptual or descriptive approach. This study uses a theory-guided approach and seeks to clarify the development of psychological dependence in the context of social media, with a particular focus on microblogging. Building on the theory of rational addiction, this study hypothesizes that dependence is initially developed from habit. Furthermore, the study draws on the cognitive–affective–behavioral modeling paradigm to hypothesize that maladaptive cognition and affect tend to distort habit into psychological dependence. We conduct a longitudinal empirical test to validate the underlying mechanism of social media dependence as theorized in our study. The study concludes with a discussion of theoretical and practical implications.

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1. Introduction

As part of the development of online social networks, social media (e.g., Facebook, Twitter or Instagram) have become an all-pervasive factor in the way we relate to others. These media allow people to connect with almost anyone, anywhere, at any time. The fundamental driving force in this expansion of connection and interaction is the burgeoning development of various mobile social media applications. The interactive capabilities of social media create functional building blocks for individuals, communities or organizations to hold conversations, share ideas, form relationships, interest groups, and develop their presence, reputation and identity [21].

Nevertheless, pervasive access to social media drives up the rate of excessive usage, which can exert negative effects on both individuals and on society as a whole. Anecdotal evidence suggests that the problematic use of social media has become prevalent among a large proportion of users, as seen in cases of Weibo Kong or Facebook addiction [40]. Individuals who are addicted to social media may suffer loss of productivity and feelings of isolation, anxiety or depression. Despite these negative outcomes, the craving for social media tends to be extremely strong and even irresistible. It has been reported that many users constantly refresh their microblog pages every few seconds for new tweets. They get excited whenever someone follows, comments or retweets. They may even spend all day on microblogging while giving rational excuses for such a loss of self-control [11].

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In spite of the practical pertinence of this issue, problematic social media use has not received sufficient attention either in the psychiatry literature or in IS research. The few existing studies tend to only adopt a conceptual or descriptive approach. For instance, Miles and Zhang [35] claimed that addiction to social media in China has become a national problem according to their analysis of media content. Similarly, Thadani and Cheung [46] developed a general tool for detecting online social network dependency through measuring the magnitude of mood alternations, negative outcomes and excessive expenditures of time. Despite their considerable merits in understanding problematic social media use, few theory-based empirical studies on this subject have been made to date.

To fill this research gap, our study examines the underlying mechanism for problematic use of social media, with a particular focus on microblog dependence. We assume that rational and irrational behavior paradigms play a joint role in the development of psychological dependence. From the perspective of rational behavior, microblogging provides a number of technological features that can help to satisfy or intensify an individual's needs for information-seeking and social connection [6]. In this regard, social media dependence develops from "normal" usage habit that appears "harmless," and its negative effects tend to be "accepted" by the individuals concerned. However, the utility of social media can induce people to engage in excessive use, which can modify their patterns of thought and feeling. The rational use of social media thus moves from habit toward irrational behavior [51]. Therefore, the theory of rational addiction is used to explain how individuals initially engage in repetitive behavior to maximize utility of the media [6], but the irrational behavioral paradigm is used to explain how overdeveloped habit gives rise to biased cognition and affect, and even psychological dependence [47]. On this theoretical basis, a habit-

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developed cognitive–affective–behavioral model is proposed to explain the mechanisms that influence the user's level of social media dependence. To assess these theoretical relationships, we conduct an online survey among active microblog users.

This study makes several theoretical and practical contributions to social media research. In terms of theory, the study shows how insights from the social psychology literature can enable understanding of social media dependence. The proposed model advances our understanding of how improper and unregulated use of social media can become addictive and can make people behave irrationally. In terms of practice, this study provides empirical evidence concerning the need for individuals to moderate their behavior and avoid adverse effects on themselves and society. This study also highlights the need for systematic education in schools, colleges and workplaces about the serious negative personal consequences of overuse, habituation and addiction to social media.

The rest of this paper is organized as follows. First, we provide an overview of the literature for related areas of research and present the research model and hypotheses. Then we describe the research methodology used in the study, followed by the results of an online survey. We conclude the paper by discussing the implications of our findings for both professionals and practitioners.

2. Theoretical background

2.1. Social media dependence

A plethora of terms have been proposed to describe psychological dependence on media. Such terms include media/Internet dependency [23, 46], media addiction [24,52] and technological addiction [5,47]. Despite the inconsistencies that exist between different approaches to dependence research, a growing consensus of scholars views dependence as a phenomenological process that is reflected by addiction behavior [46]. Dependence refers to the psychological state, and addiction describes the related behavior. In other words, dependence and addiction can, to some extent, be used interchangeably. However, in the field of clinical psychology for media use, the term *dependence*, is preferred to *addiction* in describing the state of problematic media use [23]. Therefore, the term *social media dependence* is adopted in this study to describe the problematic use of social media, although we also use the term *addiction behavior* (i.e., engaging in a continuous action despite its adverse effects [2]) to describe the actions resulting from dependence.

Although media dependence has been extensively explored in IS research, a critical distinction exists between our study and the previous research. Unlike prior researchers on technology addiction, we believe that social media dependence initially arises as a "harmless" habit, and its negative effect tends to be "accepted" by the individuals concerned [50]. To further describe such habitual behavior, Wright [50] introduced the nomenclature of soft addiction to refer to those types of problematic behavior that satisfy surface desires/urges while ignoring deeper needs. Such soft addictions can include overuse of cellphones, Internet surfing or social media. The important features of soft addiction are that affected individuals become complacent, seek to avoid anxiety and feel a superficial sense of fulfillment from their habitual activities. These feelings lead soft addicts to spend a majority of time and energy engaging in their addiction behavior. Unlike other types of addiction (e.g., auctions or gambling), soft addiction is more likely to be perceived as a normal and socially accepted activity. Its inverse negative effects are often completely overlooked by addicted individuals.

Despite the seemingly harmless and normal nature of such behavior, negative outcomes of soft addiction appear when the behavior is performed excessively and without restraint. Anecdotal evidence indicates that compulsive users commonly lose track of time while online and have trouble completing tasks or feel guilty over their obsessive usage behavior [40]. Moreover, users who feel unable to abstain from the use of social media often come into conflict with others, which can seriously harm their capacity to function normally [47]. In this way, a

thinking human being begins with a rational decision, but ends up in an irrational behavioral outcome [10]. Based on this definition of soft addiction, social media dependence can be classified as a kind of soft addiction in which, habitual (or rational) usage patterns develop into irrational behavior patterns. Furthermore, according to the characteristics of soft addiction, the critical roles of habit and affect can be identified in the development of social media dependence.

2.1.1. The role of habit

Drawing upon research in both economics and psychology, Becker and Murphy [4] developed the theory of rational addiction to clarify the reasoned point of addiction behavior. Taking an economic perspective, they proposed that addiction rationality refers to "a consistent plan from stable preferences to anticipate the future consequences of the choices and to maximize utility over time" [4, p. 675]. In line with this point, the habitual usage pattern has been widely acknowledged as an automatic response that is repeated in specific situations to obtain certain goals or end states [24,28]. Such patterns, are formed in the process of developing rational social cognitive paradigms in which intention can still be partially controlled by the affected individuals [28].

In the context of microblog use, users might originally attempt to maximize media utility through the repetitive use of microblogs. In other words, people are seeking "rational and conscious" gratifications to satisfy their media needs through frequent usage behavior [24]. For example, it has been addressed that the main reasons for using microblogs are to keep in touch with others, raise the visibility of interesting things, gather useful information or release emotional stress [54]. In addition, forming community associations [20], spreading information [36] and gaining contact gratification [6] are typical motives that spur users toward frequent microblogging. From this viewpoint, individuals accept and normalize their habitual usage pattern to achieve and maximize media utility, and believe that this type of behavior will not negatively affect their daily lives [50].

However, when such habitual usage pattern is pursued without restraint and acted upon continuously regardless of attempts to stop, it involves an increasing risk of personal and social problems [32]. In pursuing the valued goals or desires, stable preferences (e.g., the habitual usage patterns) become destabilizing (e.g., behavioral changes) when the behavior "continues to increase over time even though the one fully anticipates the future and the rate of time preference is bigger than the rate of interest" [4, p. 683]. To further illuminate this behavior change, McCarthy [33] proposed that individuals tend to choose inconsistent actions that stray from expected utilities, and thereby "the rational choice paradigm never precludes the irrational possibility of people's action " (p. 421). Consistent with this point, Strack et al. [44] claimed that most human behavior is a result of trade-offs between reflective and reflexive determinants, although the proportions of these two factors may differ at various stages of the process. Hence, we believe that habit plays a primary role in the development of social media dependence. The seemingly harmless habit first induces continuous usage behavior, which then evolves into dependence due to the effect of irrational behavioral system.

2.1.2. The role of affect

Irrational behavior always exhibits more hedonic complexity and emotionality than rational behavior [42]. People may pursue a course of action only "because of an emotional state" [33, p. 421]. Such emotional state, which can be termed as affect, has been demonstrated to be a crucial factor in irrational decision-making [49]. In line with this point, the pursuit of short-term rewards (i.e., emotion modification) has been found to play a key role in the development of addiction behavior [53]. The desire to gain pleasant feelings (e.g., of excitement, euphoria or exhilaration) and to avoid unpleasant feelings (e.g., of apprehension, anxiety or loss) thus keeps individuals coming back to the addictive behavior that provides such rewarding experiences [52].

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