Consumption-oriented engagement in social network sites : undesirable influence on personal well-being

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Consumption-Oriented Engagement in Social Network Sites: Undesirable Influence on Personal Well-being

Abstract

Purpose – Mounting empirical evidence shows that engagement in social network sites (SNSs) could have a negative impact on users' personal well-being. However, studies of the undesirable consequences of SNS use have not examined SNSs as a channel for users to share consumption information and experiences. To extend prior research, this study examines the impact of consumption-oriented engagement (COE) in SNSs on young adult consumers' personal well-being and excessive spending.

Design/methodology/approach – Surveys were the primary means of data collection from a sample of young college students ($N = 900$). Moderated hierarchical regression was employed to test the hypotheses.

Findings – COE is positively associated with anxiety and excessive spending, and negatively associated with self-esteem. Social comparison mediates these relationships and individuals' materialistic values moderate the mediation.

Research limitations/implications – This study demonstrates the psychological and behavioral outcomes of consumer socialization via digital media among young adult consumers. It introduces and empirically validates social comparison as a theoretical explanation for the effects of COE. In addition, it validates materialistic value as a personal trait that moderates the effects of COE.

Originality/value – Findings shed light on the negative repercussions of engagement in SNSs in the consumption domain and provide an impetus for educators, researchers, and policy makers to make further efforts to gain a thorough understanding of the pitfalls of social media use.

Keywords Social network site, Socialization, Materialistic values, Personal well-being, Social comparison, Consumption

Paper type Research paper

Introduction

The proliferation of social network sites (SNSs) like Facebook, Instagram, and Twitter over the last decade has considerably changed the ways in which people, especially young people, interact and socialize with peers within their social networks (Bolton *et al.*, 2013; Boyd and Ellison, 2007; Brandtzæg, 2012).¹ Unlike traditional media, SNSs allow users to create and share their own content and to access content generated by other users. SNS users can also communicate with these content providers through messaging and by posting comments on the content received. Features of SNSs that facilitate feedback from peers, such as news feeds and status updates, encourage self-expression and sharing of daily experiences in the online space (Ellison and Boyd, 2013; Smock *et al.*, 2011). Since for many young adults engaging in SNSs has become an integral part of daily life, public concern has grown regarding the potentially harmful impact of these platforms on users' psychological health (Michael, 2014; Whiteman, 2015). In response, research has begun to examine the link between frequent SNS use and personal well-being among young adults, as well as specific user behaviors that hold significant implications for well-being, such as self-disclosure (Utz, 2015) and online supportive interactions (Oh *et al.*, 2014).

In developed economies, where the consumer culture is prevalent, the content that users share often contains embedded symbols and artifacts of consumerism, such as images of brands and luxury goods (Presi *et al.*, 2015; Van Vark, 2012). In addition, SNSs have become a popular channel for companies' promotion of products and brands through targeted marketing messages

¹ A recent US survey indicates that 86% of young adults use SNSs and that 58% of the population spend 2.7 hours a day on such platforms (Pew Research Center, 2016). In comparison, in Singapore, where our study was conducted, 77% of the population use social media and spend more than 2 hours per day on average (We are social, 2017), with 90% of young people between 15 and 34 using social media and 78% browsing these sites daily (National Youth Council Singapore, 2016).

(Beukeboom *et al.*, 2015; Campbell *et al.*, 2014; Confos and Davis, 2016). Users' sharing of such consumption-related content on SNSs may stimulate further dialogue with peers on consumption topics, with a potential impact on both the sender's and the receiver's beliefs and actions in the consumption domain (Huang *et al.*, 2011; Zhu *et al.*, 2016). Importantly, these mediated communications may engender undesirable influence on SNS users' well-being (Valkenburg *et al.*, 2006, 2016).

Marketing scholars often suggest that consumers benefit from having greater access to product and brand information, including information pertaining to peers' word-of-mouth recommendations (Bickart and Schindler, 2001). This contention, however, may not hold true when exposure to the consumption information shared by peers triggers social comparisons (Sirgy *et al.*, 2012). Arguably, SNS users' sharing, receiving, and reacting to consumption content could facilitate social comparisons with peers, with potential negative impact on well-being.

This important issue is worthy of study because online users, especially young adults, spend growing amounts of time on SNSs (Pew Research Center, 2016) and increasingly rely on these platforms to stay in touch with their personal (Ellison *et al.* 2008) and professional networks (Utz, 2016). Arguably, young adults cannot escape from the influence of their peers' online sharing. To examine this phenomenon, the present study draws on social comparison theory (Festinger, 1954) and argues that social comparison is a critical psychological process accounting for the effects of consumption-oriented use of SNSs on users' well-being. In addition, this study proposes that these effects would be moderated by consumers' materialistic values. Since prior research indicates that consumers' susceptibility to media and interpersonal influence is driven by personal values (Kropp *et al.*, 2013; Valkenburg *et al.*, 2016), the authors propose

that consumers high in materialistic values are more responsive to the consumption content appearing on SNSs. Materialistic values are examined as a potential moderator.

This study's theorization focuses on young adults² between 18 and 24 for several reasons. First, various large-scale survey studies indicate that members of this age group are the heaviest users of social media (Griffin, 2015; Pew Research Center, 2016). Second, in comparison to older adults, young adults tend to be more susceptible to influence from new media (Valkenburg *et al.*, 2016) and engage more frequently in social comparisons with peers (Callen *et al.*, 2015). These tendencies are attributed to young adults' greater exploration with self-identities and their heightened need for affiliations during their transition from adolescence to adulthood (Benson and Elder, 2000). In addition, since emerging adults are often away from their parents (and thus the media regulation and/or supervision their parents provided), emerging adulthood may represent a particularly salient time for the development of risk behaviors in social media use (Coyne *et al.*, 2013).

This research examined two aspects of personal well-being that have been widely studied in social media and consumer research: self-esteem and anxiety (Błachnio *et al.*, 2016; Burroughs and Rindfleisch, 2002; Dittmar *et al.*, 2014; Primack *et al.*, 2017; Steinfield *et al.*, 2008; Valkenberg *et al.*, 2006; Vannucci *et al.* 2017), which reflect an individual's self-appraisals and mental health.³ For example, positive comments from peers on SNS were

² The US draft youth policy framework "Pathways for Youth" from 2013 defines youth as those under 25 years old in three stages: early adolescence (under 14), middle adolescence (15–17), late adolescence and early adulthood (18–24) (see <http://www.youthpolicy.org/factsheets/country/united-states/>).

³ Personal well-being in general refers to a person's overall psychological health, which can be assessed by a large number of indicators, including self-esteem and anxiety (Dittmar *et al.*, 2014). Self-esteem refers to a person's evaluation of the self—the extent to which an individual views the self as worthwhile (Rosenberg, 1989). Anxiety refers to a person's excessive worries about a variety of circumstances that he/she encounters in daily lives and the feeling of lacking control over such worries (Stern and Heimberg, 2004).

associated with public evaluation of the self (Valkenberg *et al.*, 2006), and the frequency of social media use predicted the intensity of anxiety that interfered with work, school, or home activities (Vannucci *et al.* 2017). In addition, the study examined SNS users' excessive spending as a behavioral correlate of poor well-being, since prior research shows that addictive consumer behavior such as a compulsive buying disorder is closely related to poor well-being (Dittmar, 2005; Ridgway *et al.*, 2008; Rindfleisch *et al.*, 1997). Assessing excessive spending allows evaluation of not only the psychological but also the behavioral consequences of consumption-oriented SNS use.

Singapore was chosen as the locale for the current study for several reasons. First, the level of Internet penetration and amount of time people spend on social media are among the highest in the world (*We are Social*, 2017). Importantly, social media addiction has become a growing concern in this country (Tang and Koh, 2017). Second, Singapore's national culture places heavy emphasis on the financial prosperity of individuals, which has driven the rising of consumerism over the past few decades (70% of *Singaporeans*, 2011). Singaporeans rate material life as highly important (Keng *et al.*, 2000) and youths are keen on exchanging product and consumption information with peers (Chia *et al.* 2012). Therefore, the socioeconomic environment provides a highly suitable context for studying consumption-oriented use of SNSs.

This research contributes to the marketing and social media literature in several ways. First, it shows the psychological (well-being) and behavioral (excessive spending) outcomes of consumer socialization via SNSs among young adult consumers. Second, it offers theoretical explanations for the impact of consumption-oriented SNS use on young adults and empirically tests social comparisons as the mechanism underpinning such impact. Third, it validates materialistic values as a personal trait magnifying the harmful impact of consumption-oriented

SNS use and thus identifies a critical characteristic of those young consumers who are more vulnerable to heavy use of SNSs.

Hypotheses

Negative impact of engagement in SNSs on users' personal well-being

In light of the burgeoning use of SNSs among young adults, understanding the impact of SNSs on users' well-being has significant value for academics and policy makers. Prior research has shown that young adult users obtain various benefits from the use of SNSs, such as social support (Ellison *et al.*, 2008; Manago *et al.*, 2012), accumulation of social capital (Steinfeld *et al.*, 2008), and psychological well-being (Burke and Kraut, 2016). In addition, the marketing literature indicates that consumers enhance their brand experience through engagement with their favorite brands on social media (Godey *et al.*, 2016; Hudson *et al.*, 2016; Presi *et al.*, 2016).

While SNSs enable users to reap various psychosocial benefits, they also have shortcomings. Previous studies have documented undesirable psychological outcomes of SNS use (Bolton *et al.*, 2013; Steer *et al.*, 2014). For instance, SNS use has been found to have adverse effects on various indicators of well-being, including happiness, self-esteem, stress, and depression among young adults (Chen and Lee, 2013; Krasnova *et al.*, 2013). In addition, college students' tendency to compare themselves with others on Facebook is associated with lower mental health (Jang *et al.*, 2016). Exposure to SNSs that facilitate appearance comparison is linked to greater body image disturbance among college students (Fardouly and Vartanian, 2014). Specific behaviors exhibited on social media like feedback-seeking are associated with depression (Lup *et al.*, 2016).

This growing evidence about the undesirable impact of SNSs on users' well-being suggests the importance of delving further into the specific context in which these effects occur

and the underlying psychological process. One notable limitation in previous studies is a lack of differentiation among various uses of SNSs. Young adults can use these platforms to access news, seek entertainment, keep informed of the latest happenings of interest groups, and communicate with their social networks. However, research examining the well-being effects of SNS engagement has often measured mainly the time spent on the sites and provides limited insights regarding specific uses of SNSs that may affect well-being. Therefore, to extend this literature, this study focuses on consumers' use of SNSs as an information-sharing tool relating to product news, marketing messages, and consumption experience. Within this context, this research examines how young adults' engagement in SNSs affects their personal well-being and spending. The study also theorizes social comparison as a psychological mechanism that mediates the effects of consumption-oriented engagement. Results of the study's empirical analysis provide clear evidence linking users' well-being to this specific use of SNS.

Consumption-oriented user engagement

Consumption-oriented engagement (COE) refers to consumers' use of SNSs to communicate with peers with respect to products, brands, and advertising messages, as well as purchasing and consumption experiences (Ho *et al.*, 2016). Since SNSs promote self-disclosure and facilitate sharing of user-generated content and responding to such content, COE would include posting pictures of goods and consumption experiences (e.g., fine dining, indulgence in a spa, holidays at a luxury resort), commenting on peers' photos of shopping sprees and consumption activities, and forwarding marketing messages to peers. Thus, COE represents a form of Internet-mediated communication and socialization among consumers (Ho *et al.*, 2016; Valkenburg *et al.*, 2016). COE likely occurs frequently among young adults, since they tend to embrace the consumer culture and are more attentive to consumption trends (Dittmar, 2007; Schor, 2004). Further,

young adults have greater purchasing power and discretion in spending than adolescents. In addition, in recent years marketers have made increasing efforts to target millennial consumers via social media marketing, which could further stimulate customer engagement and occurrence of COE among young adult consumers (Beukeboom *et al.*, 2015; Brettel *et al.*, 2015).

The mediating role of social comparison

Social comparison theory holds that people compare themselves with others to correctly appraise who they themselves are (Festinger, 1954; Corcoran *et al.*, 2011). To gain accurate self-knowledge, people compare themselves against friends, romantic partners, siblings, or co-workers who hold similar characteristics (Tesser, 1989). The specific targets of comparison depend on individuals' goals. They select a superior target to identify their own shortcomings and improve themselves (Wheeler, 1966), an inferior target to maintain positive self-image (Wills, 1981), and an equivalent target to verify the self (Taylor *et al.*, 1996). As the self-knowledge acquired through the comparison helps individuals to assess their standing relative to others in important life domains such as appearance and success, people automatically and routinely engage in social comparison when they are confronted with information about how others are faring and what others have done (Mussweiler and Epstude, 2009). In recent years, researchers have expanded upon the idea that long-term destructive emotions are related to the act of frequently socially comparing oneself to others rather than the direction of social comparison (White *et al.*, 2006). Therefore, any benefits gained from making social comparisons may be temporary, and engaging in frequent social comparisons of any kind may be linked to lower well-being.

The tendency to engage in social comparison among peers is especially salient in emerging adulthood, which is associated with identity transition from adolescence and an

elevated need for expanding social relationships (Manago *et al.*, 2012). According to developmental psychology, emerging adults engage in social comparison to explore a desirable self-identity (Benson and Elder, 2011). To this end, young adults tend to look for opportunities for social comparison and pay close attention to peers' behaviors (Cialdini and Goldstein, 2004).

SNSs help young adult users to negotiate their proximate and distal social connections, maintain a large, diverse network, and access information about others. Thus, SNSs offer avenues for socialization within the virtual space, vastly expanding the opportunities for social comparison (Lee, 2014). Features of SNSs such as real-time news feed and updates on Facebook provide a stream of information about peers' lives, achievements, experiences, and consumption, creating a fertile ground for social comparison – especially as users of SNS are often privy to information about their friends that they might not have had access to otherwise (Ellison and boyd, 2013). Self-portraits shared on SNSs such as Facebook and Instagram not only fulfill users' self-expression needs (Haferkamp *et al.*, 2012); they also facilitate observations of how peers present themselves and encourage the use of such information for social comparison. In addition, since conforming to peer norms fosters social acceptance (Cialdini and Goldstein, 2004; Chia *et al.*, 2012; Rimal and Real, 2005), peers' consumption behaviors both offline and online are a salient frame of reference for young adults (Kleine III *et al.*, 1993). Therefore, online communication with peers regarding consumption topics or exposure to the shared posts on SNSs that contain embedded consumption symbols will trigger higher levels of social comparison among young adult consumers.

Limited research has documented the detrimental impact of social comparison induced by engagement in SNSs on personal well-being (Steinfeld *et al.*, 2008; Valkenburg *et al.* 2006; Vannucci *et al.*, 2017). Most existing findings relate to comparisons of physical appearance with

others. For instance, studies have shown that the intensity of SNS use is linked to more frequent social comparisons, which in turn elevate young adult users' negative feelings (Fardouly *et al.*, 2015; Lee, 2014) and lower self-perceptions of physical attractiveness and social competence (De Vries and Kuhne, 2015). Young adult users reported unfavorable body image and negative affect when they viewed SNS profile pictures of attractive people (Haferkamp and Krämer, 2011). Viewing and commenting on peers' profiles and updates boosts college students' urge to improve body shape, and such effects are attributed to social comparison (Kim and Chock, 2015).

These studies indicate that young adults suffer negative consequences of engagement in SNSs because exposure to SNS content could set off upward social comparisons. As users are able to edit photos and content before posting these on SNSs and thus present their lives in a positive light, their online profiles are often an idealized version of the self (Fardouly *et al.*, 2015; Kim and Chock, 2015). These online profiles and shared pictures are often more socially desirable and glamorous than reality (Rosenberg and Egbert, 2011), and thus are biased representations with potential impact on viewers. For instance, college students who spent more time on Facebook tended to perceive others as happier and as having better lives than themselves (Chou and Edge, 2012). Therefore, as SNS users engage in social comparison using inflated perceptions of their friends' standard of living and consumption levels, negative affect and self-appraisals may arise that undermine psychological health.

The present research suggests that social comparisons are likely to mediate the effects of COE on young adult consumers' excessive spending and personal well-being, including self-esteem and anxiety (Błachnio *et al.*, 2016; Primack *et al.*, 2017; Valkenburg *et al.*, 2006). The process is similar to that of individuals who observe attractive profile pictures on SNSs and

subsequently experience lower self-esteem, negative emotions, and elevated motivation to improve their physique. First, when young adults make comparisons with peers who appear to be enjoying higher standards of living, the divergence between their current standard of living and their ideal may provoke the desire for material possessions, leading to excessive spending. In fact, prior research has found that one's attention to social comparison information is positively correlated with compulsive buying (Attiq and Azam, 2015). While young adults could engage in excessive spending to reduce unpleasant feelings associated with the discrepancy, such attempts often fail to make a person happier, resulting into further emotional upset (Dittmar *et al.*, 2014; Kasser *et al.*, 2007).

Second, prior research has shown that frequent exposure to other SNS users' positive self-presentation is associated with lower self-esteem (Chen and Lee, 2013). As the presence of socially desirable people could erode an individual's self-image (Morse and Gergen, 1970), exposure to an inflated number of seemingly affluent peers on SNSs is likely to result in lower self-evaluation among young adult consumers.

Third, a qualitative study of Facebook users has reported that young adults are preoccupied with peers' activities on Facebook and often experience envy or dissatisfaction because they perceive their peers to have a better life (Fox and Moreland, 2015). Thus, comparison with the idealized images of affluence and attractiveness among peers might trigger a higher level of anxiety (Richins, 1991) – an affective response stemming from the inability to resolve the discrepancy between these images and the young adult consumers' self-perceptions (Schlenker and Leary, 1982). On the basis of the above discussions, the following hypotheses are proposed.

H1a. COE is associated negatively with personal well-being and positively with excessive spending.

H1b. Social comparison mediates the associations between COE and personal well-being as well as excessive spending.

The next section discusses why the effects of COE on young adult consumers' social comparisons and well-being may vary among individuals who embrace materialistic values to different degrees.

The moderating role of individuals' materialistic values

In developed economies where the consumer culture prevails, individuals inevitably compare their wealth, success, and material possessions with those of others. Advertising and marketing messages foster the consumer culture by creating an illusion that acquiring and possessing material goods will bring happiness (Dittmar, 2007) and by elevating the frame of reference for what ought to be with respect to one's material possessions, lifestyle, and standard of living (Richins, 1995). Relatedly, considerable evidence shows that mass media exposure, such as television watching, is associated with viewers' materialism and overestimation of the affluence level in a society (Shrum *et al.*, 2011).

Materialism has been defined as "individual differences in people's long-term endorsement of values, goals, and associated beliefs that center on the importance of acquiring money and possessions..." (Dittmar *et al.*, 2014, p.880).⁴ Thus, materialism is a personal value reflected by an individual's belief of the centrality of material goods in a person's life, as well as

⁴ Materialism can also refer to a consumption-oriented culture and societal beliefs about the goals that a society should pursue rather than an individual's personal values and beliefs (Belk, 1985; Dittmar *et al.*, 2014; Richins, 1995). Although the psychology and marketing literature commonly uses the term materialism to denote personal values, this paper avoids confusion by using the term "materialistic values" in lieu of materialism throughout the rest of the paper.

the belief about improved success and happiness resulting from such acquisitions (Richins and Dawson 1992). Previous studies have used different measures to assess materialism but the Material Values Scale developed by Richins and Dawson (1992) has been most widely accepted in consumer research.

Prior research shows that individuals high in materialistic values (materialists) tend to use material possessions to define and communicate their self-identities (Richins, 1995). For example, to engender a positive sense of self, materialists use conspicuous consumption to signal the prestige of their goods relative to goods owned by others (Heaney *et al.*, 2005). Materialists are also more likely to decode others' status or identities through their possessions (Richins and Dawson, 1992). Because materialists emphasize possessions in evaluating themselves and others, they tend to be more attentive to the signals consumer goods may send about their owner's identities. Materialistic people are also more susceptible to normative influence and more conscious of the impression they make on others, which could result in a higher propensity to search for cues from others to aid their own self-presentation and pursuit of social approval (Hall *et al.* 2014; Richins, 1999).

Prior research further suggests that in processing media information, people fall prey to confirmation bias, tending to seek and focus on information that confirms pre-existing beliefs and to discount information that contradicts such beliefs (Moskowitz, 2005). Regarding media use, confirmation bias and selective exposure apply to a wide range of beliefs, including beliefs about products (Yin *et al.*, 2016), gender (Knobloch-Westerwick and Hastall, 2006), personal relationships (Knobloch and Zillmann, 2003), politics (Knobloch-Westerwick *et al.*, 2014), and race (Knobloch-Westerwick *et al.*, 2008). The information individuals selectively attend to can be used for self-evaluation and validation of their relative standing among comparable others

(Appiah *et al.*, 2013). Selective exposure will drive media users to attend more to informational cues (or choose media) consistent with their beliefs and ignore cues inconsistent with their beliefs (Knobloch-Westerwick and Meng, 2009; Smith *et al.*, 2007). In the context of SNSs, since users receive numerous posts, updates, and images every day, they are likely to filter out content that is of little personal relevance and focus on content congruent with their central beliefs. Consequently, materialists are likely to pay closer attention to content that contains symbols and artifacts of the consumer culture and capture their peers' consumption behaviors, resulting in a greater impact of COE on social comparison. Therefore, COE is expected to induce more frequent social comparisons among consumers high in materialistic values.

H2a. Materialistic values magnify the relationship between COE and social comparison.

As noted earlier, comparisons between one's present situation and unmet materialistic goals or someone of higher economic status will lead individuals to feel unhappy and less worthy, driving them to spend and consume in an attempt to reduce unpleasant feelings – resulting in a downward spiral of deteriorating well-being (Dittmar *et al.*, 2014). Also, social comparison theory posits that comparisons on life domains that have high self-relevance have greater impact than comparisons that do not bear on the self-concept (Wood and Taylor, 1991). For materialistic people, material possessions and consumption constitute their self-identities. Therefore, posts and photos related to products, advertising, and consumption on SNSs would be recognized more easily, processed more deeply, and connected with self-relevant nodes, causing them to exert a stronger psychological impact among materialists. In other words, since materialistic consumers tend to be more concerned with their relative standing among peers in the consumption domain, they would be more susceptible to the negative repercussions of COE, making the associations between COE and well-being/excessive spending stronger.

Overall, consumers high in materialistic values would be more sensitive and responsive to the shared content on SNSs that contains messages about consumption matters. These materialistic consumers might also comment more often on peers' consumption-related content and initiate further conversations. As a result, materialistic values will positively moderate the relationship between COE and well-being/excessive spending, mediated by social comparison.

H2b. Materialistic values positively moderate the mediated relationship between COE and personal well-being as well as excessive spending.

Methodology

Participants and procedure

The study's sample of young adults comprised college students. Relative to their working counterparts, college students have more opportunities to socialize with peers because living on campus is common (Chia *et al.* 2012). Importantly, research indicates that college students and young working adults have highly similar perceptions of emerging adulthood which is independent of social roles (Arnett, 1997). A recent meta-analysis of the relationship between social media use and civic engagement shows that the effects reported in studies using college student samples are similar to those using general young adult samples (Boulianne, 2015). Therefore, any statistical significant results found in the current study can be conceivably generalized to young adults. In addition, considerable research on the well-being effects of SNSs has used college student samples, allowing direct comparison of this study's findings with those of previous studies.

Data for this study were extracted from a dataset constructed from a survey of college students' social media use in Singapore. The survey was an anonymous paper-and-pencil instrument conducted in five tertiary educational institutions in Singapore. These institutions had

the highest numbers of enrollment and the most demographically diverse student populations. The survey was administered by trained research assistants in the campuses of the selected institutions. Students studying in the libraries were invited to participate in the survey and each respondent received an incentive of US\$4 for completing the questionnaire. The total number of completed questionnaires with valid responses was 900. Participants ranged in age from 17 to 24 years ($M = 19.60$, $SD = 1.62$) and 46% were male. Similar to the country demographics for young adults, the majority of respondents (86.8%) were Chinese, 5.9% were Malay, 4.6% were Indian, and 2.7% belonged to other racial groups. The majority of respondents reported spending on average more than 4 hours (34%) on the Internet and more than 2 hours (35%) on SNSs daily.

Measures

COE. This construct was measured with a six-item scale adapted from Ho *et al.* (2016), which captures individuals' sharing of visual media and marketing messages with peers on SNSs regarding products, spending, and consumption. The original scale has eight items in which six items assess individuals' consumption-centered communication on SNSs with peers and two items assess communication with marketers. Since the construct of COE focuses on peer communication, only the former six items were used. Using a five-point response scale (1 = *never* to 5 = *always*), participants rated the frequency of their engagement in SNSs, including posting product photos, forwarding ads and product news, reading and commenting on friends' posts and photos, and instant online chat with friends, with respect to purchasing and consumption activities.

Personal well-being. Two widely studied aspects of personal well-being were assessed: self-esteem and anxiety. Self-esteem was measured with the Rosenberg self-esteem scale (Rosenberg, 1989). Participants reported the extent of their agreement with ten items assessing

self-worth, providing responses on a 6-point response scale (1 = *strongly disagree* to 6 = *strongly agree*). Anxiety was measured with the seven-item GAD-7 scale that assesses individuals' generalized anxiety disorder (Spitzer *et al.*, 2006). Participants indicated the frequency of certain feelings during the two weeks prior to the survey (1 = *rarely* to 4 = *nearly every day*). The four-point response scale was adopted directly from the original scale.

Excessive spending. No scale exists in the literature for measuring excessive spending. The more relevant scales are those used for assessing compulsive buying disorder, which refers to an individual's inability to suppress his/her impulse to buy things and the associated detrimental psychological and financial consequences. Thus, relevant items from compulsive buying scales were adapted to measure excessive spending (e.g., Dittmar, 2005; Ridgway *et al.*, 2008). Participants rated the following five statements on the basis of the degree to which each statement described them accurately (1 = *strongly disagree* to 6 = *strongly agree*): "In order to buy things I want, I am willing to borrow money from my family and friends"; "I spend more money than I can afford"; "I feel that I cannot cut down my expenses on shopping"; "It is hard to control my urge to buy things" and "I nudge my parents to give me more allowance."

Social comparison. Existing social comparison scales were not suitable for this study as they assess individuals' general propensity to compare themselves with others (i.e., social comparison orientation) or assess comparison domains other than consumption, such as physical appearance (e.g., Kim and Chock, 2015). Therefore, a new scale was developed to measure individuals' tendency to compare themselves with peers with respect to spending and consumption. Participants rated the following five items as to the frequency with which each statement occurred (1 = *never* to 5 = *very often*): "I pay attention to the things my peers own"; "I try to keep up with my peers' spending habits"; "I want my friends to notice the things I have

just bought”; “I feel keeping up with the spending of my friends is important” and “I feel unhappy when I could not afford to buy similar things that my peers have.”

Materialistic values. This construct was measured with the abbreviated version of Material Values Scale (Richins, 2004; Richins and Dawson, 1992), which assesses the centrality of material goods to an individual as well as beliefs about improved success and happiness resulting from product acquisitions. Participants rated nine items on the degree to which each statement described them accurately, providing responses on a six-point scale (1 = *strongly disagree* to 6 = *strongly agree*).

Demographics and control variables. The analysis measured and controlled for demographic variables that could be associated with individuals’ well-being, including ethnicity, gender, age, family socioeconomic status, and housing conditions. In addition, the levels of participants’ overall media use and overall use of SNSs were controlled for. Participants reported a daily average of the amount of time spent on commonly used media, including watching television; watching video clips, TV programs, and movies downloaded from the Internet; browsing the Internet; and reading printed and online magazines. Participants responded on a five-point scale ranging from 1 = *rarely* to 5 = *more than 4 hours*. Averaging responses across these items formed a composite measure that assessed overall media consumption. Participants also reported their daily average amount of time spent on social media by responding on a six-point scale ranging from 1 = *less than 30 minutes* to 6 = *more than 2 hours*. Finally, participants reported the number of media outlets focusing on consumption content among the top three they most frequently visited across such media as paid TV channels, magazines, websites, and online blogs/forums. Averaging responses across these media formed a composite measure that

assessed participants' general media use focused on consumption. Details of all the measurement items reported above appear in Appendix.

Analysis and results

EQS6.3 was used to perform confirmatory factor analysis (CFA) on each construct to assess construct validity. The results show that the factor loading of all measurement items for the six latent constructs were significant at the 0.05 level and all standardized loading values exceeded the threshold of 0.5. The goodness-of-fit indices for each construct either met or surpassed the widely acceptable thresholds and thus the constructs show good convergent validity (Table I). Cronbach's alpha and composite reliabilities for all the scales was well above 0.7, suggesting good reliability of the multi-item measures.

---Insert Table I about here---

Table II reports descriptive statistics of the variables in the conceptual model. H1a and H1b were tested using the bootstrapping approach (Hayes, 2013; Preacher *et al.*, 2006) to assess the statistical significance of the indirect (mediated) effect of COE on the three dependent variables. The bootstrapping approach has proven to be more robust than the causal steps approach advocated by Baron and Kenny (1986) (see Hayes, 2013). This study used Hayes' PROCESS (Hayes, 2013) with 5,000 bootstrapping resamples and included demographic variables and time spent on SNSs and mass media, as well as exposure to media focused on consumption as control variables. Results indicated that the indirect effects of COE were significant for self-esteem ($b = -0.06$, $SE = .01$, 95% bias-corrected CI $[-.08$ to $-.03]$), anxiety ($b = .07$, $SE = .01$, 95% BC CI $[.05, .10]$), excessive spending ($b = .13$, $SE = .03$, 95% BC CI $[.08, .16]$). The directions of these effects were consistent with predictions (i.e., negative for self-esteem, positive for anxiety and excessive spending). Thus, the results confirmed that social

comparison mediated the relationship between COE and the three dependent variables. H1a and H1b are supported.

---Insert Table II about here---

Results also indicated that, after the indirect effects were partialled out, the direct effects of COE were significant with respect to excessive spending ($b = .13$, $SE = .03$, 95% BC CI [.07, .20]) but not self-esteem ($b = .06$, $SE = .04$, 95% BC CI [−.03 to .14], ns) and anxiety ($b = .05$, $SE = .04$, 95% BC CI [−.02, .12], ns). These results demonstrated that social comparison fully mediated the effects of COE on anxiety and self-esteem but partially mediated the effects of COE on excessive spending.

Table III reports the results of moderated hierarchical regression used to test the interaction effect between COE and materialistic values on social comparison as stipulated in H2a. The results indicated that both COE ($b = .24$, $t = 7.00$, $p < .01$) and materialistic values ($b = .40$, $t = 14.33$, $p < .01$) were significant predictors of social comparison after the effects of control variables were partialled out. The interaction itself was also a significant predictor ($b = .07$, $t = 2.60$, $p < .05$). Simple slope analysis revealed that the positive relationship between COE and social comparison was significantly stronger at a high level (+1SD) of materialistic values ($b = .30$, $t = 7.78$, $p < .01$) than at a low level (−1SD) of materialistic values ($b = .18$, $t = 3.64$, $p < .01$). These results show that materialistic values magnify the relationship between COE and social comparison. Therefore, H2a was supported. Among the control variables, age had a significant negative effect, whereas overall level of media use had a significant positive effect on social comparison.

---Insert Table III about here---

Finally, Hayes' PROCESS was used to test the moderated mediation stipulated in H2b. The indexes of moderated mediation (Hayes, 2013) reported in Table IV assess whether the mediated effects (i.e., indirect effects) of COE on the three dependent variables were moderated by the level of materialistic values. The results indicate that the relationships between COE and self-esteem, anxiety, and excessive spending through the mediation of social comparison were significant at both low (-1 SD) and high ($+1$ SD) levels of materialistic values. More importantly, such associations were stronger for individuals high in materialistic values than for individuals low in materialistic values. This evidence indicates that materialistic values positively moderate the mediated relationship between COE and well-being as well as excessive spending. H2b is supported.

---Insert Table IV about here---

Discussion

Prior research has reported mixed results regarding the impact of engagement in SNSs on users' well-being (Gerson *et al.*, 2016). On the one hand, empirical evidence indicates that young adult users obtain various benefits from SNS use, such as social support (Ellison *et al.*, 2008; Manago *et al.*, 2012), accumulation of social capital (Steinfeld *et al.*, 2008), and personal well-being (Burke and Kraut, 2016). On the other hand, studies document various undesirable psychological outcomes of SNS use, including negative affect, depression, and risk behaviors (Bolton *et al.*, 2013; Steer *et al.*, 2014). This inconsistency could be attributed to the lack of differentiation among various uses of SNSs and the omission of key variables in the theoretical model that predicts personal well-being (Valkenburg *et al.*, 2016). By focusing on consumers' use of SNSs as an information-sharing tool relating to product news, marketing messages, and consumption experience, this research examines how such consumption-oriented engagement in SNSs (COE)

affects young adults' personal well-being and spending behavior. The study also theorizes social comparison as a psychological mechanism that mediates the effects of COE.

The findings lend strong support to the proposed theoretically driven model. Consistent with the hypotheses, the findings show that social comparison mediates the relationship between COE and anxiety, self-esteem, and excessive spending. Materialistic values moderate the mediated relationships, as young adult consumers high in materialistic values engage in higher levels of social comparison and thereafter suffer from more negative psychological and behavioral outcomes than individuals low in materialistic values. The moderation remains strong after accounting for the time individuals spent on SNSs and mass media, as well as exposure to media focused on consumption. In addition, while COE has indirect effects on the three dependent variables via the mediation of social comparison, COE also has a direct effect on excessive spending. In other words, social comparison fully accounts for the relationships between COE and anxiety and self-esteem respectively but partially accounts for COE's relationship with excessive spending.

Two possible reasons may explain the partial mediation for excessive spending. First, social comparison entails highly autonomous cognitive processes that SNS users may not be aware of engaging in, thus they may have understated their social comparisons with peers when answering the survey measures. Second, other cognitive and affective processes, such as perceived peer acceptance and stress, may mediate the link between COE and excessive spending concurrently with social comparison.

Theoretical Implications

This research sheds new light on the literature in several ways. First, adding to prior research that examines the impact of general use of SNSs (often measured as usage frequency and intensity),

the present study assesses young adults' consumption-oriented engagement in SNSs—behaviors reflecting their needs to connect and socialize with peers through online communication regarding shopping and consumption experiences. Since peers are important socialization agents for consumer behavior and since youths increasingly communicate with each other through social media, marketing academics must understand how young adult consumers use the new media to discuss consumption topics and the implications of such socialization processes. This study takes an initial step toward this research direction.

Second, this study identifies and validates social comparison in the consumption domain as a crucial psychological process that mediates the relationship between COE and personal well-being as well as spending disorders. COE instigates social comparison among young adult consumers on SNSs probably because exposure to peers' consumption experiences elevates their urge to assess self-knowledge and their relative standing among peers, as such motivations are apparent in prior studies of social comparison in physical appearance (Fardouly *et al.*, 2015). Furthermore, SNS features such as status update make information essential to social comparison more accessible than in offline interactions. With an e-mail reminder, a pop-up window, or a news feed, the opportunities for young adult consumers to engage in social comparison with peers are only one click away. Extending studies of social comparison as the mechanism underpinning the negative psychological effects of SNS use (Gerson *et al.*, 2016; Steers *et al.*, 2014), this research underscores the role of social comparison processes in the context of consumption-oriented communication and socialization occurring on SNSs.

Third, this study confirms the role of materialistic values, as a personal trait, in amplifying the mediated relationships between COE and personal well-being as well as excessive spending. This positive moderation suggests that materialists tend to pay more

attention to the content and messages on SNSs containing embedded symbols of consumerism (Kasser, 2016; Richins, 1991). Thus, the findings illustrate that materialists are more responsive to their peers' consumption behaviors exhibited in the virtual space of SNSs, which echo media studies showing that materialists suffer more negative repercussions from mass media use (Sirgy *et al.*, 2012). This insight also adds new knowledge to the materialism literature, which focuses mainly on finding the antecedents and consequences of materialistic values and scarcely examines materialistic values as a moderator of media effects on individuals' cognitions, affect, and behaviors (Dittmar *et al.*, 2014; Valkenburg *et al.*, 2016).

Implications for Practices and Public Policies

Prior research indicates that a delay in exchange of information in computer-mediated communication allows people to polish the messages they share so as to give a favorable impression to others (Walther, 2007). In line with this research, the present study shows that the photos, images, and messages peers share on SNSs serve as a salient frame of reference for social comparison among users and that such shared content may reflect an idealized, beautified version of their peers' lives—this characteristic of SNSs inadvertently promotes upward social comparison (Fardouly *et al.*, 2015; Kim and Chock, 2015). As a result, young adult consumers would use their positively biased perceptions of peers' standard of living as the standard of comparison and suffer from deteriorated psychological health and risk behaviors. These negative influences are likely to prevail because SNS users seldom check the authenticity of the information they use for social comparison (Krasanova, 2013).

In this regard, this study provides important timely insights, as marketers have put increasing resources into disseminating targeted marketing messages to SNS users, especially young adult consumers (Lawlor *et al.*, 2016). Arguably, the features of SNSs would encourage

consumers to share the received product and brand news with peers, exacerbating the adverse effects of COE. Thus, contradictory to prior research that reveals the positive brand experience consumers benefit from by interacting with their favorite brands on SNSs (e.g., Presi *et al.*, 2016), this study suggests that advertising and promotional contents would induce higher levels of COE that undercuts consumers' well-being. Therefore, marketers must beware of such implications when they use SNSs as the channels for disseminating marketing messages. Since marketers have long been accused of being the culprit for cultivating the rising consumerism via the mass media, they now bear the responsibility to prove how marketing activities on SNSs can indeed create value for consumers.

Given the increasingly influential role of social media in the social lives of youths, the findings of this research are informative as to the adverse repercussions of SNS use for young adult consumers, and the results advance understanding of the precursor to mental health risks and behavioral disorders. While SNSs would provide users with certain benefits, such as fulfilling the need to belong and the need for self-presentation, the present study provides clear evidence of harmful psychological outcomes. Therefore, to prevent the negative repercussions from heavy use of SNSs among young consumers, government agencies and educational institutions should introduce programs that help youths to be more conscious of their tendency to engage excessively in SNSs. In addition, this study reveals that people who are younger, materialistic, and heavy media users are more susceptible to the ill effects associated with SNS use. Hence, social support and intervention programs should be designed to target these vulnerable groups.

Finally, heightened awareness of the implications of SNS use for the well-being of users provides an impetus for educators, researchers, and policy makers to make further efforts to gain a thorough understanding of the pitfalls of social media use, especially among young adults.

Limitations

This study has several limitations. First, because of the cross-sectional nature of the data, the empirical results cannot validate the causal relationship between COE and individuals' well-being. While proposing COE to be an antecedent to social comparison and personal well-being is theoretically justifiable, the study's results cannot rule out the possibility that the relationship between COE and personal well-being could be bilaterally reinforcing in nature. Conceivably, young adult consumers with lower self-esteem may be more inclined to compare themselves with peers and communicate with peers about consumption matters in an effort to understand peer norms. Therefore, future research should consider using longitudinal data to validate a causal relationship between COE and personal well-being.

Second, the study collected data in Singapore, and thus the generalizability of the findings to other countries warrants further assessment. Although Singapore embraces a strong work ethic, the country's prevailing consumer culture and aspiration to the Western lifestyle place increasing emphasis on material values and hedonism. This unique socio-cultural environment may drive young adult consumers to frequently compare their financial success, material possessions, and consumption choices with those of peers, resulting in a strong impact from COE.

Last, survey respondents were college students, who may have higher aspirations for financial success relative to their working counterparts. Also, as emerging adults, college students undergo continuous self-evaluation in their transition from adolescence to adulthood.

Since college life offers considerable opportunity for social comparison and self-affirmation, college students may pay more attention to and respond more frequently to the content and messages shared by their peers on SNSs, especially content that signals consumption. Therefore, further studies could assess the extent to which the findings of this study are generalizable to various demographic groups.

Conclusion

Increasing empirical evidence shows that engagement in SNSs could have a negative impact on users' personal well-being, but the context in which this effect occurs is unclear. To extend this research stream, this study examines consumers' use of SNSs as an information-sharing tool for product news, marketing messages, and consumption experience. Within the context of this particular SNS use, the present study shows that COE mitigates personal well-being and increases excessive spending among young adult consumers. In addition, these effects are mediated by social comparison and such mediation is moderated by consumers' materialistic values. The findings shed light on the negative repercussions of engagement in SNSs in the consumption domain and provide an impetus for educators, researchers, and policy makers to make further efforts to gain a thorough understanding of the pitfalls of social media use. Since social media have become more diverse and fragmented in recent years, future research examining the impact of social media use on users' psychological health should identify the unique context in which such an impact may or may not happen.

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Table I.
Confirmatory factor analysis

Construct	Non-normed fit index (NNFI)	Comparative fit index (CFI)	Standardized root mean square residual (SRMR)	Root mean square error of approximation (RMSEA)	Composite reliability	Cronbach's alpha
COE	.939	.975	.035	.082	.792	.852
Self-esteem	.938	.967	.050	.083	.800	.899
Anxiety	.949	.969	.038	.081	.887	.895
Excessive spending	.943	.987	.029	.062	.753	.823
Social comparison	.977	.993	.015	.065	.819	.848
Materialistic values	.928	.954	.041	.077	.851	.869

<p>Table II. Means, standard deviations, and bivariate correlations of variables ($N = 900$).</p>								
	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. COE	2.07	.76	.52					
2. Self-esteem	4.15	.82	.02	.50				
3. Anxiety	1.93	.72	-.41**	.18**	.55			
4. Excessive spending	2.16	.73	-.08*	.71	.73	.50		
5. Social comparison	2.36	.88	.11**	.57**	-.13**	.22**	.51	
6. Materialistic values	3.70	.84	-.19**	.41**	-.18	.18**	.55**	.51

Notes: diagonal entries are the square root of average variance extracted of each measure.

* $p < 0.05$. ** $p < 0.01$.

Table III.
Moderated hierarchical regression results.

Predictors	Unstandardized coefficient	SE	t	R ²
Age	−.03	.01	−2.25**	.39***
Gender	−.05	.05	−.10	
Ethnicity	.05	.06	.74	
Family socio-economic status	.22	.01	1.59	
Time spent on media	−.05	.03	−1.70*	
Time spent on SNSs	.08	.09	.91	
Exposure to media focused on consumption	.69	.03	2.60***	
COE	.24	.03	7.00***	
Materialistic values	.40	.03	14.33***	
COE × Materialistic values	.07	.03	2.20**	

* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table IV.
Conditional indirect effects of COE at low and high levels of materialistic values.

	b	SE	95% Bias-corrected confidence intervals	
Excessive spending				
Low materialism (−1 SD)	.08	.02	.04	.12
High materialism (+1 SD)	.13	.02	.09	.18
Index of moderated mediation	.03	.02	.002	.06
Self-esteem				
Low materialism (−1 SD)	−.04	.01	−.06	−.01
High materialism (+1 SD)	−.06	.02	−.09	−.03
Index of moderated mediation	−.14	.01	−.03	−.001
Anxiety				
Low materialism (−1 SD)	.04	.01	.02	.06
High materialism (+1 SD)	.06	.01	.04	.09
Index of moderated mediation	.01	.008	.001	.03

Appendix Measurement

Construct and Source	Measure	Scale anchor
Dependent variable		
Self-esteem (Rosenberg, 1989)	<p>Please indicate to what extent you agree or disagree with the following statements about yourself.</p> <p><i>On the whole, I am satisfied with myself.</i></p> <p><i>I feel that I have a number of good qualities.</i></p> <p><i>I am able to do things as good as most other people do.</i></p> <p><i>I feel that I am a person of worth, at least on an equal plane with others.</i></p> <p><i>I take a positive attitude toward myself.</i></p> <p><i>At times, I think I am no good at all.</i>[R]</p> <p><i>I feel I have not much to be proud of.</i>[R]</p> <p><i>I certainly feel useless at times.</i>[R]</p> <p><i>I wish I could respect myself more.</i>[R]</p> <p><i>On the whole, I tend to feel that I am a failure.</i>[R]</p>	<p>Strongly disagree = 1, Moderately disagree = 2, Slightly disagree = 3, Slightly agree = 4, Moderately agree = 5, Strongly agree = 6</p>
Anxiety (Spitzer <i>et al.</i> , 2006)	<p>Over the last two weeks, how often have you been bothered by the following feelings?</p> <p><i>Feeling nervous, anxious, or on edge.</i></p> <p><i>Not being able to stop or control worrying.</i></p> <p><i>Worrying too much about different things.</i></p> <p><i>Trouble relaxing.</i></p> <p><i>Being so restless that it is hard to sit still.</i></p> <p><i>Becoming easily annoyed or irritable.</i></p> <p><i>Feeling afraid as if something awful might happen.</i></p>	<p>Rarely = 1, Several days = 2, Over half the days = 3, Nearly every day = 4</p>
Excessive spending (items modified from Dittmar, 2005; Ridgway <i>et al.</i> , 2008)	<p>Please indicate to what extent you agree or disagree with the following statements about yourself.</p> <p><i>In order to buy things I want, I am willing to borrow money from my family or friends.</i></p> <p><i>I spend more money than I can afford.</i></p> <p><i>I feel that I cannot cut down my expenses on shopping.</i></p> <p><i>It is hard to control my urge to buy things.</i></p> <p><i>I nudge my parents to give me more allowance.</i></p>	<p>Strongly disagree = 1, Moderately disagree = 2, Slightly disagree = 3, Slightly agree = 4, Moderately agree = 5, Strongly agree = 6</p>
Independent variable		
Consumption-oriented user engagement (items adapted from Ho <i>et al.</i> , 2016)	<p>Please indicate how frequent you do the following activities on social networking sites.</p> <p><i>Post photos of goods or clothing that you have just purchased.</i></p> <p><i>Post photos of goods or clothing that you like when you shop around.</i></p> <p><i>Forward ads or news about products, shopping, and spending.</i></p> <p><i>Comment on friends' posts about products, shopping, and spending.</i></p> <p><i>Read friends' posts about products, shopping, and spending.</i></p> <p><i>Instant online chat with friends on topics about products, shopping, and spending.</i></p>	<p>Never = 1, Occasionally = 2, Sometimes = 3, Often = 4, Frequently = 5</p>
Materialistic values (Richins, 2004)	<p>Please indicate to what extent you agree or disagree with the following statements about yourself.</p> <p><i>My life would be better if I owned certain things I don't have.</i></p> <p><i>I try to keep my life simple, as far as possessions are concerned.</i>[R]</p> <p><i>Some of the most important achievements in life include acquiring material possessions.</i></p> <p><i>I like to own things that impress people.</i></p> <p><i>I admire people who own expensive homes, cars, and clothes.</i></p> <p><i>Buying things gives me a lot of pleasure.</i></p> <p><i>I like a lot of luxury in my life.</i></p> <p><i>I would be happier if I could afford to buy more things.</i></p> <p><i>It sometimes bothers me quite a bit that I cannot afford to buy all the things I want.</i></p>	<p>Strongly disagree = 1, Moderately disagree = 2, Slightly disagree = 3, Slightly agree = 4, Moderately agree = 5, Strongly agree = 6</p>

Appendix Measurement

Construct and Source	Measure	Scale anchor
Social comparison (new measure)	<p>Please rate the following items as to the frequency with which each statement occurred.</p> <p><i>I pay attention to the things my peers own.</i></p> <p><i>I try to keep up with my peers' spending habits.</i></p> <p><i>I want my friends to notice the things I have just bought.</i></p> <p><i>I feel keeping up with the spending of my friends is important.</i></p> <p><i>I feel unhappy when I could not afford to buy similar things that my peers have.</i></p>	<p>Never = 1,</p> <p>Occasionally = 2,</p> <p>Sometimes = 3,</p> <p>Often = 4,</p> <p>Frequently = 5</p>