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Development and Psychometric Assessment of the Social Media Motives Scale among University Students

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Abstract: Social media (SM) use is a rapidly growing phenomenon among Millennials. Thus, a growing body of studies have explored the beneficial applications and negative consequences of their use in an increasingly virtual world. The current study aimed to develop and validate a scale that measures university students' motives for using SM from a psychological and social perspective. In Study 1 (N = 316), the psychometric properties of SM motives were examined. The estimated factorial structure was validated in Study 2 (N = 200). The Study 1 results showed two active personal motives scales (i.e., self-actualization and purposive motives), one passive motive scale (i.e., enjoyment), one active contextual motive scale (i.e., self-enhancement), and a contextual (neither active nor passive) motive scale (i.e., a factor of convenience). Study 2 findings confirmed this factorial structure. Construct validity was supported with significant differences between three types of users (i.e., productive, consuming, and disinterested) on their motives (151 words).

Keywords: *Social media, self-actualization, purposive, enjoyment, self-enhancement motives, convenience, scale development, and validation.*

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Introduction

Social media (SM) is an ever-present phenomenon in the lives of Millennials (i.e., those born between 1981 and 1996; Pew Research Center, 2018). Statistics from the Pew Research Center (2018) show that American youth (i.e., aged 18 - 24) outperform all other age groups in terms of time spent using SM, frequency of use, and the number of SM accounts. Besides Facebook and YouTube, young adults are increasingly using other platforms like Snapchat (78%) and Instagram (71%). Additionally, the pattern of use varies considerably among these youth. Some undergraduates use SM on their smartphones during classes, killing time, and watching their friends snaps and Instagram profiles, which can be distracting to faculty and students as well. This could adversely affect students' academic outcomes (e.g., perceived academic competence, Tunc-Aksan & Akbay, 2019). Other undergraduates use SM in a productive manner, such as: (1) Watching YouTube to deepen their understanding, (2) Promoting their small business through Instagram, or (3) Changing their community by conducting a dialogue with politicians and experts through Twitter. Central to the descriptions of these users are their underlying SM motives, which identify the types of SM use's consequences (i.e., positive or negative). One example of adverse effects is the association between SM websites and internet addiction (Babakr et al., 2019). In their study, they found that several SM (i.e., Facebook, Instagram, Snapchat, and YouTube) have significant effects on predicting internet addiction where Snapchat users had the highest mean of internet addiction.

Multiple motives can influence how Millennials use SM. These categories of motivations result in various use types, including: (1) Active use (i.e., producing content), and (2) Passive/consuming use (i.e., consuming content; Yu, 2016). Understudied in the literature, an additional type of use has been labeled "Disinterested" (i.e., opening SM accounts without actual involvement). These different categories evoke interest in measuring and identifying the underlying SM use motives in the young adult population.

After reviewing a substantial body of SM motives literature, two themes emerged. First, psychometric research illustrates factorial diversity in SM motives. The literature supports two-factor (Luchman et al., 2014), three-factor

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(Mao, 2014), four-factor (Ifinedo, 2016), and five-factor structures (Al-Menayes, 2015). Second, most of the previous studies have relied on social theoretical support, specifically the "Uses and Gratifications Theory" (UGT; Al-Menayes, 2015; Khan, 2017). Few studies have explored SM motives from a psychological perspective using intrinsic and extrinsic approaches (Wamba et al., 2017) and the theory of psychological ownership (Karahanna et al., 2015). As two examples, one study examined SM motives using a heterogeneous sample of workers from the United Kingdom, USA, Canada, India, and Australia (i.e., ages 18 to above 55; Wamba et al., 2017). In the second example, Karahanna et al. (2015) examined a general sample of users whose ages ranged from 18 to 73 years old (i.e., N = 587 of internet users on the "eSearch" website). The above two studies examined SM motives from a psychological perspective among diverse samples in terms of age and culture. SM motives were examined in these heterogeneous samples, which vary considerably in their characteristics compared to more individualistic Millennials in the USA at higher education institutions. Factor structures may differ in Millennials, and more specifically, this young adult group in the U.S., where SM use is pervasive and has existed for over a decade.

The current study examines Millennials' psychological motives for using SM and the relationships these motives may have with types of SM use by conducting two studies. That is, the aim of this article was three-fold, which includes: (1) Developing an SM motive scale by merging the psychological and social theoretical frameworks – Social Cognitive Theory (SCT; Bandura, 1986) and the Uses and Gratification Theory (UGT; Katz et al., 1974) and estimating an initial factorial structure using Exploratory Factor Analysis (EFA) in Study 1, (2) Validating the estimated factorial structure using Confirmatory Factor Analysis (CFA) in Study 2, and (3) Assessing construct validity. Evidences of validity were obtained by examining the relationships between SM motives, gender, age, and duration of smartphone use, as well as examining differences in SM motives across three types of SM uses (i.e., productive, consuming, and disinterested).

Literature Review

Social Media Use

SM websites are online platforms where individuals upload, initiate, share, and consume various information, such as personal and professional content. For example, in 2016, 34% of U.S. adults posted information about their family (Statista, 2018), and 33% acknowledged the importance of reading and understanding science-related posts on SM (Pew Research Center, 2018). Additionally, users present content differently on SM websites such as in written, audio, video, or picture formats. For instance, in general, visual content (i.e., photos and videos) is 40 times more likely to be shared on SM relative to other formats (SocialPilot, 2018). In general, the sources of the shared content vary among users. Given that, some of the content is prepared by the individuals themselves or shared from other platforms (Yu, 2016).

Users' selection of specific SM websites depends on many demographic variables, such as age, gender, ethnicity, nationality, and geographic location, among others. For instance, young adults are the largest segment of SM users in the U.S., with specific websites like Snapchat and Instagram showing rapid growth compared to others (Pew Research Center, 2018). Regarding gender differences, females represent 81% of Pinterest users (SocialPilot, 2018), and males were more likely to dislike videos on YouTube (Khan, 2017). Frison and Eggermont (2016) found that there was an increase in active private use of Facebook across adolescence, particularly among girls. That is, females reported a higher active private use compared to males, aligning with their expected social role (i.e., using SM for social connectivity and building relationships). Ethnically in the U.S., WhatsApp is more prevalent among Hispanic SM users (49%) compared to Caucasian (14%) and African-American SM users.

Particularly germane to the current study, Millennials vary in *how* they use SM websites. Two main types of use have been identified in the literature: (1) Active and (2) Passive. Active use is defined by SM users' efforts to produce content by posting videos, photos, or articles prepared by them, sharing exciting content, and commenting on other SM users' posts. Comparatively, passive use is defined by SM users' consuming behaviors such as viewing SM content, with little to no interaction directed toward the displayed content or the user that posted it (Yu, 2016). Furthermore, a third type of SM use has emerged as more people show an initial objection to joining or participating in the SM virtual world. The current study identifies this group as "disinterested" who resist creating SM accounts for various reasons related to their values and believes (Choi & Kang, 2014).

The motivations that individuals have for using SM are essential in shaping the types of use. For instance, Khan (2017) investigated the associations between YouTube user's motives (N = 1,143) and the types of use (i.e., active and passive). Findings showed that relaxation and entertainment motives were significant predictors of the following variables: (1) Liking and disliking videos as an active use and (2) Watching videos as a passive use. The motivation to provide information was positively related to sharing as an active use, and information-seeking motives were positively associated with reading comments as a passive use. Additionally, one SM feature, anonymity (i.e., the ability to be relatively or completely anonymous by hiding names or identifiers), leads to increased video uploading and sharing.

Additional evidence supports the association between young adults' motives and SM use in undergraduate student populations. Choi and Kang (2014) classified undergraduates (N = 840 students) into two lists based on the underlying motives and the corresponding type of users. The first list was related to *why* undergraduates use SM, which were: (1)

Passive relationships, (2) Networking for learning purposes, (3) Establishing social connections, (4) Sharing information, and (5) Solving problems. The second list contains what type of user he/she is based on how they use the SM, which were: (1) Community-oriented consumer, (2) Community-oriented prosumer, (3) Disinterested, and (4) Consumer of data. Choi and Kang (2014) also showed that undergraduates' motives were strong predictors of SM use types. For instance, the likelihood of classifying students who approach SM to solve tasks/problems as prosumer was more than ten times higher relative to classifying them in disinterested users' category.

Comparatively, Millennials allocate different amounts of time to browse SM on their smartphones. Several studies suggest that SM motives are related to a time spent using SM. Al-Menayes (2015) showed that motivations related to entertainment and personal utility correlated positively with three features of use, including: (1) Satisfaction with SM, (2) Daily duration of SM use, and (3) Time since the creation of an SM account. Information seeking and convenience were related to only two SM use features, which were: (1) Daily duration and (2) Satisfaction. These results indicate that as the duration of daily use and satisfaction increases, the motivation to use SM strengthens.

Social Media Motives

Young adults hold various motives and purposes for using SM, which specify, to some extent, their favorite SM websites. For instance, some undergraduates watch YouTube lessons to learn specific skills or deepen their understanding of certain topics that they do not grasp properly in class. Other students may decide to launch their own small business from their homes using Instagram or Pinterest pages, which may reduce some of the initial burdensome costs associated with startups. Conversely, other students may decide to join certain websites like Snapchat to have something in common with their peers and/or friends. For example, young adults enjoy watching their friends' fun "snaps" knowing where they were/are and what they are doing by checking or inspecting Snapchat "actionmojis" (i.e., pictures that reveal what others are doing in a Snapchat map). However, prolonged use may foster a harmful dependency, resulting in more wasted time and an "addiction" to following the lives of others (Roberts et al., 2015).

To illustrate the above paragraph, Luchman et al. (2014) investigated 1,686 American youths' SM motives (i.e., 12 items) using Multi-Dimensional Scaling. Results across 19 SM sites showed two underlying motives – fun-related and content-specific. Fun-related motives represent the tendency to share updates, have fun, and be entertained. This factor was the strongest (i.e., 51% of the variance), and is associated with Facebook, Instagram, Pinterest, and Twitter use. Content-specific motives are defined by being proficient in an area, learning something new, and not sharing personal information or updates. The SM websites associated with these motives are YouTube, MMORPGs (i.e., massively multiplayer online role-playing games), and Wikipedia.

Similarly, Wamba et al. (2017) highlight three types of SM and internet websites based on individuals' purposes and motives. That is, some websites are more utilitarian in which individuals are more likely to engage productively due to perceived usefulness, such as Blackboard. On the other hand, some sites are categorized mainly for hedonic (i.e., pleasure-oriented) use like Snapshot, where the main motive is perceived enjoyment. Combining the two noted above, other websites can be used for both perceived utility and enjoyment, such as YouTube.

The literature demonstrates a substantial effort to explore youths' motives for using SM. Unlike Luchman et al. (2014), most of these endeavors drew upon social theories like the UGT, social influences, and social presence. From a social perspective, two trends of studies were observed. First, some studies focused solely on one theory (i.e., UGT; Al-Menayes, 2015; Khan, 2017). Second, other studies examined a combination of social theories (e.g., Cheung et al., 2011; Ifinedo, 2016). For instance, Ifinedo (2016) investigated the pervasive use of social networking sites among a diverse sample of university students (i.e., Argentina, Mexico, Canada, and the USA) based on a combination of the UGT and the Social Influence (SI) theory. Other studies approached the motives from a psychological perspective.

Psychologically, motivations for using SM have been studied from two angles. Some articles have investigated young adults' motives anchored in psychological ownership (i.e., three ownership motives, including: "Efficacy and Effectance," "Having a Place," and "Self-Identity"; Karahanna et al., 2014), intrinsic motives (e.g., perceived enjoyment and perceived playfulness), and extrinsic motives (e.g., image and perceived usefulness; Wamba et al., 2017). Other studies have examined the relationship between self-determination and self-presentation in SM (Ferguson et al., 2015; Lewis & Neighbors, 2005). None of these studies have examined SM motives using Social Cognitive Theory (SCT), nor in combination with any other psychological or other social theories. The following section expresses the rationale of adopting an integrated approach between social and psychological theories when investigating SM motives.

The Psychological and Social Frameworks – Social Media Motives.

A large body of literature has investigated the pervasive and negative effect of SM; however, the current study examines differences between SM users in their motives and acknowledges the diversity of SM motives, which could distinguish the positive from the adverse consequences. For instance, 71% of US businesses used Instagram in 2017 (Mendenhall, 2017). This pattern applies to medium-small, started-new entrepreneurs' projects. The purposive motives in this case (i.e., achieve profit by reaching a large segment of the targeted audience) identify the SM websites (e.g., Instagram) in which young adults are the primary audience. Conversely, watching others' Snapchat when the person is bored is a kind

of entertainment motivation that is used to kill time. Overall, the underlying motives inform the quality of SM use. Adopting an integrated approach between social and psychological frameworks provides a broader perspective for explaining the differences in SM motives. It also presents a bigger picture of the associations between personal motives and contextual influences on the users' behavior (i.e., the pattern of SM use, duration, and intensity of SM use).

Therefore, the current study combined SCT and the UGT. One of the fundamental concepts in Bandura's SCT is the triadic reciprocal causation that identifies a person's actions between three components: (1) Personal variables, (2) Environmental/contextual variables, and (3) Behavior. In the current study, this means that the user's behavior (i.e., duration and type of SM) is a result of personal factors (i.e., motives, goals, and desires) in addition to the contextual variables (i.e., responses of followers, number of retweets, likes, or shares). The essential part of this theory acknowledges users as autonomous and responsible for their behaviors while recognizing the effect of environmental factors that can impact the behavior.

The role of the UGT is significant in identifying the underlying personal and contextual motives that shape SM use. This theory answers why specific SM platforms are used and explains SM users' motives. On the other hand, the UGT aligns with SCT by acknowledging the active role that users play while receiving the media content regardless of the means (i.e., TV, radio, or SM). According to the theory, five motives are identified: (1) Purposeful Value, (2) Self-Realization, (3) Personal Connectivity, (4) Social Enhancement, and (5) Hedonic purpose.

In detail, Purposive Motives (PM) reflect the desire to acquire new information or achieve an instrumental purpose (i.e., "I use SM to deepen my understanding of a certain topic."; Katz et al., 1974). Self-Discovery/realization identifies the tendency to know the self through participation in an online group (e.g., "I use SM to express my opinions about something that could be simple like cooking or more effective like the political issues in my community."). In this study, it is hypothesized that SM users move from the self-discovery into self-actualization states specifically for experienced users. In a sequential time-frame, SM users start by knowing themselves and their personal interests, then progress to actualizing their interests and talents. In other words, the users move from a state of exploration to actualizing their abilities and skills to gain more presence in the social media. For instance, talented users in graphic design or even what hear nowadays as YouTubers tend to present their work in a captivating way using multiple SM websites. The more likes, comments, and sharing they get, the more they feel satisfied with their work. A practical manifestation maybe when the person sees an actual change in their communities because they created a dialogue using a Twitter hashtag about their government's performance and services. According to Maslow (1943), self-actualization is "the desire to become more and more what is, to become everything that one is capable of becoming" (p. 382). Given that, self-actualization motives (SAMs) in the current study represent the SM user's desire to fully realize one's creative, intellectual, or social potential that extends to influence their online SM presence (i.e., "I use SM to express my talent and creativity.").

The third category is interpersonal connectivity or, as labeled in the current study, social connectivity motives (SCM), which represent a user's tendency to communicate with others (i.e., family, friends, or others; Ifinedo, 2016). Fourth, social enhancement motives (SEM), is defined as "the value that a participant derives from gaining acceptance and approval of other members, and the enhancement of one's social status within the community on account of one's contribution to it" (Cheung et al., 2011, p. 1338). For instance, talented users in drawing or graphic design tend to present their work on multiple SM sites. The more likes, comments, and sharing they get, the more they feel satisfied with the aesthetic aspects of their work. However, self-enhancement can also be expressed differently. For example, some celebrities have revealed intimate and/or private details about their lives that are borderline unscrupulous and depraved in some cases. Fifth, entertainment/Hedonic motives (EM) express the desire to have fun, enjoyment, and pleasure (Al-Menayes, 2015). In addition to the above, an additional contextual motive was added, which is named the "factor of convenience" motive (FCM). This motive identifies the ease of use, affordable features that facilitate communication, and interaction available when using the SM platform (e.g., "I use SM because it is free and available.").

Correspondingly, an initial theoretical structure of motives was proposed based on the integration of SCT and UGT (see Figure 1). That is, motives are classified into two categories: (1) Personal Motives (i.e., PM, SAM, and EM), and (2) Contextual Motives (i.e., SCM, SEM, and FCM). Another proposed level of classification relates to the motives to use SM. That is, motives are classified into: (1) Active Motives (i.e., PM, SAM, and SEM), (2) Passive Motives (i.e., EM and SCM), and (3) Neither Active nor Passive (i.e., a contextual factor or "factor of convenience").

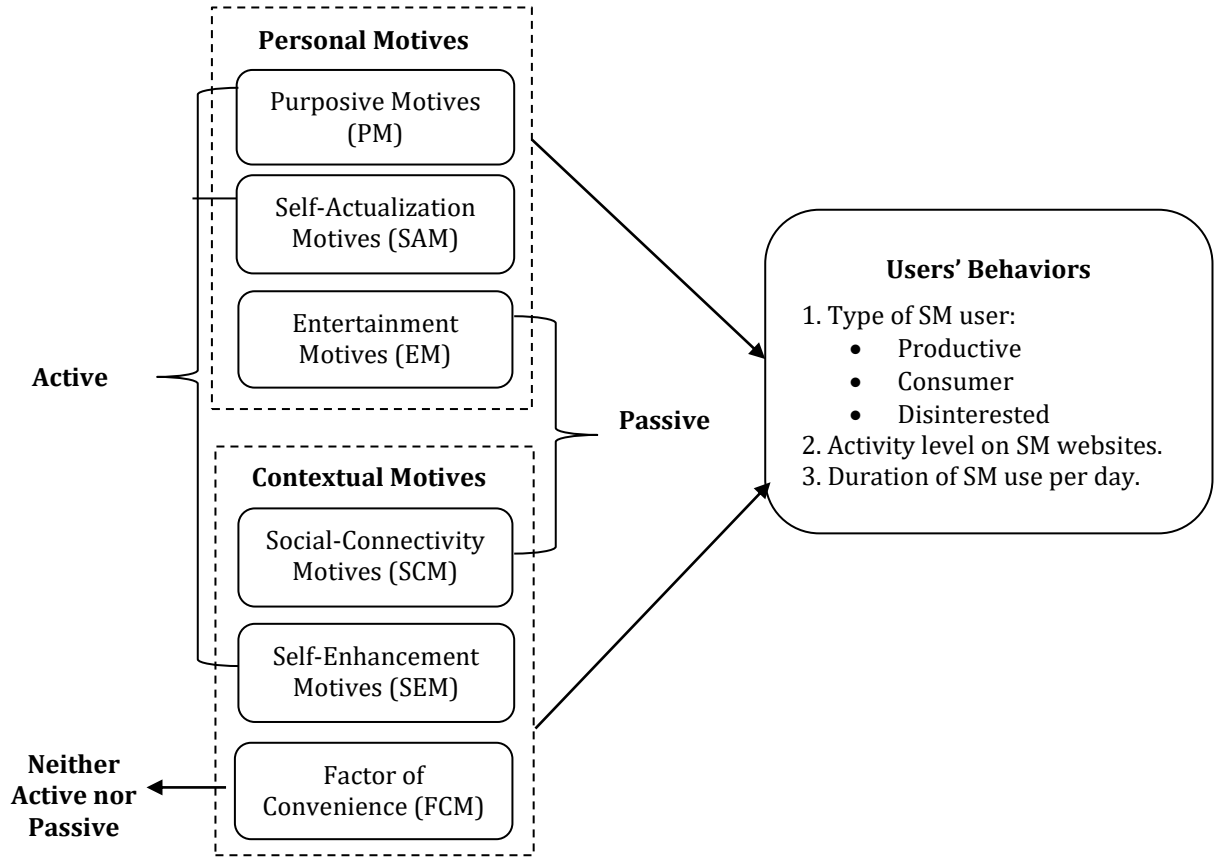

Figure 1. The initial conceptual factorial structure of SM Motives Scale

Study Aims

The current research contains two studies. Study 1 aimed to develop a pool of items reflecting Millennials' motives for using SM and examined the psychometric properties (e.g., factorial structure and internal consistency reliability) of these measures using Exploratory Factor Analysis (EFA). The second study verified the estimated factorial structure in the first study using Confirmatory Factory Analysis (CFA). Additionally, Study 2 investigated construct validity by estimating the relationships between SM motives, age, gender, and smartphone use duration. Finally, construct validity was also evidenced by analyzing the differences in motive between three types of SM use.

Methods

Participants

The study population contained undergraduate university students in the U.S. An online-format survey was sent through email and SM websites. The online invitation letters summarized the study goals and the expected time of completing the survey. Also, the invitations assured the voluntary nature of the responses and confirmed no risk associated with participation and the confidentiality of responses. The letters of invination were emailed to the majority of colleges at one public university in the Midwest U.S. The primary study sample contained 516 participants. It represented diverse majors (e.g., Biomedical Sciences, Interior Design, Accounting, Chemistry, Computer Science, Fashion Design, Psychology, Nursing, etc.).

The main study data (N = 516) were randomly divided into two samples (N = 316 for Study 1) and (N =200 for Study 2). The criteria to divide the sample took into consideration the number of items and sample size needed to conduct EFA and CFA. Kline (1994) suggested at least 100 participants for conducting EFA, while Nunnally (1978) recommended at least ten participants per item. Based on Nunnally's criteria, the initial scale contained 31 items, necessitating a minimum sample size of 310. Study 1 contained 316 participants who fulfilled Nunnally's and Kline's criteria. For Study 2, Kline (1998) and Hoyle (1995) emphasized that the minimum sample size should be 200 cases to have adequate power and credible goodness-of-fit indices. Thus, the second study sample included 200 participants.

Measures

A survey was administered that consisted of three sections: (1) Demographic information, (2) Types of SM uses, and (3) The newly-developed Social Media Motives Scale. Demographic information included gender, age, nationality, academic year (i.e., Freshman, Sophomore, Junior, Senior, Masters, Doctoral), English as Second Language status, and academic performance as measured by each participant's self-reported, cumulative GPA. The second part of the survey inquired about smartphone use, Internet plans, electronic devices, and the duration of SM use.

Development of the Social Media Motives Scale

The following procedures were used to develop the SM Motives scale:

- Phase 1: A review of educational, psychological, social, and technological literature that addressed young adults' motives for using SM was undertaken. Theoretically, most of the studies have relied on social theories like the UGT (Al-Menayes, 2015; Khan, 2017), social presence theory (Cheung et al., 2011), and social bonding theory (Ahmad et al., 2016). Some studies merged the UGT and social influence theory (Cheung et al., 2011; Ifinedo, 2016). Other studies combined the Technology Acceptance Model (TAM; Davis, 1989) and intrinsic and extrinsic motivation (Wamba et al., 2017). Furthermore, some articles addressed the use of SM in learning and academic contexts (Balakrishnan & Lay, 2016; Mao, 2014).
- Phase 2: An additional review of established measures of youths' SM motives was conducted. Some scales measured the motives among American young adults (Ifinedo, 2016; Khan, 2017; Luchman et al., 2014; Mao, 2014) and other scales investigated the motives of youths from collectivistic cultures (Ahmad et al., 2016; Al-Menayes, 2015; Cheung et al., 2011). Still, others targeted a heterogeneous sample comprised of individualistic and collectivistic SM users (Wamba et al., 2017). These scales varied in the nature and number of motives (see Table 1). For instance, Luchman et al. (2014) classified two types of motives – fun-related and content-specific. While Wamba et al. (2017) illustrated four dimensions – perceived enjoyment, perceived playfulness, image, and perceived usefulness. The smallest number of factors was two (Luchman et al., 2014), and the largest number of factors was nine (Cheung et al., 2011). Some scales had a similar number of factors, but different types (Al-Menayes, 2015; Choi & Kang, 2014; Khan, 2017).
- Phase 3: After analyzing the existing literature and measures, an initial pool of items was constructed based on the integration of the UGT and SCT, as explained above. Some of the items were adopted from other scales with modifications, and additional items were written. The initial number of items was 41, and all were evaluated on a 5-point scale, which ranges from "Strongly Disagree" to "Strongly Agree."
- Phase 4: This phase refined the initial pool of items by sending them to a review panel of faculty members and graduate students at two higher education institutions. The review panel assessed the items in terms of language accuracy, redundancy, and the "fit" of items with dimensions. As a result, ten items were eliminated due to redundancy. For instance, "I use SM to be entertained" is similar to "I use SM to have fun." The subsequent step in this phase included pilot testing the 31 remaining items through an online survey to approximately 35 undergraduate students. Feedback was solicited from participants regarding any difficulties or confusion when responding. Initial inspection of reliability using Coefficient (Cronbach's Alpha) were all positive for the hypothesized indicators of SM motives.

Table 1. Types of Social Media Motives in the Research Literature

Source	# of Motives	Types of Motives
Luchman et al., 2014	Two	Fun-related and content-specific motives.
Choi & Kang, 2014	Five	Passive relationships, learning network building, building social connections, information sharing, and task solving.
Ifinedo, 2016	Four	Embedment, perceived usefulness, perceived ease of use, and embracement.
Ahmad et al., 2016	Six	The intensity of SNS use, communication and interaction, outward-looking, self-actualization, self-esteem, and gratification towards university life.
Al-Menayes, 2015	Five	Entertainment, personal utility, information seeking, convenience, and altruism.
Balakrishnan & Lay, 2016	Four	Performance, effort, self, communication, and functionality.
Cheung et al., 2011	Nine	We-intention, subjective norm, group norm, social norm, purposeful deeds, interpersonal interconnectivity, enhancement, self-discovery/realization, pleasure, and social presence.
Khan, 2017	Five	Searching for information, providing information, establishing self-status, social connectivity, and hedonic purposes.
Mao, 2014	Three	Benefits of SM use, disadvantages of SM use, and current SM use in education.
Matikainen, 2015	Three	Development of web ideology, self-expression, and community.
Wamba et al., 2017	Four	Perceived enjoyment, perceived playfulness, image, and perceived usefulness.

- Phase 5: For study 1, four EFAs were conducted, including: (1) The active personal motives, (2) The passive motives, (3) The active contextual motives (i.e., SEM), and (4) Neither Active nor Passive (i.e., the factor of convenience). The decision to conduct four analyses was theory-driven. That is, passive motives were tested together. Similarly, active motives were examined simultaneously except self-enhancement because it differs conceptually from the other two active motives (i.e., PM and SAM). Self-enhancement is a contextual motive, whereas the other two are personal motives, necessitating two separate analyses. The remaining motive (i.e., the factor of convenience) is a contextual factor, but it is neither active nor passive. For Study 2, four CFAs were conducted. Construct validity was assessed as well.

Data Analysis

The two data sets were cleaned, and several assumptions were assessed (e.g., missing data, normality, and outliers) using SPSS Version 24.0 for Windows before carrying on the main analyses. In the first study, Principal Axis Factoring (PAF) was implemented to run EFA. To select the appropriate rotation type, Costello and Osborne (2005) recommended using an oblique rotation in case of strong correlations between factors (i.e., $r > .32$). As such, Direct Oblimin was selected. Many assumptions were evaluated. Multicollinearity was avoided by an acceptable range of correlation coefficients between items ($.80 > r > .30$). Singularity was not found by having small values of the determinant (i.e., > 0). To ensure sampling adequacy, the KMO values should be .80 and above, reflecting "Good" to "Great" adequacy (Pett et al., 2003). To avoid the scenario where the correlation matrix is not an identity matrix, Bartlett's Test should be significant (Thompson, 2004). Three main criteria were scrutinized to identify the optimal number of extracted factors, which include: Kaiser's criterion of eigenvalues larger than 1, the Parallel Test, and the scree plots (Patil et al., 2008). Internal consistency reliability was assessed using Coefficient Alpha.

In Study 2, LISREL 9.3 was used to conduct CFA (Joreskog & Sorbom, 2015). The mode fit was estimated using Maximum Likelihood (ML). Following the recommendation of Gonzalez and Griffin (2001), the item with the highest regression weight was restricted to one during model specification. Several Goodness-of-Fit (GoF) indices were assessed (Schumacker & Lomax, 2010). These indices are Chi-Square, the RMSEA, the GFI, the AGFI, the NFI, and the SRMR. A good model fit is identified when the following criteria are met: (1) A non-significant χ^2, and (2) Small values of RMSEA and SRMR (i.e., ≤ .05), and (3) Large values of GFI, AGFI, and NFI (i.e., ≥ .95).

Results

Study 1 Results

Demographic Descriptive Statistics

The sample contained 316 students from the Midwest of U.S. Eighty-two of students were males (25.9%) and 230 (72.8%) were females. The majority of students were undergraduate students ($n = 242$) and 74 were graduate students ($n = 28$). The mean age of the participants was 23.41 ($SD = 7.26$). Ninety percent of the participants reported that English was their first language, while 10% reported that English was their second language. Ninety-seven percent of participants had smartphones, whereas only 2.5% of participants did not have smartphones.

Descriptive Statistics

Descriptive statistics were assessed for the 31 items (see Table 2). No outliers ($z \pm 2.58$) were detected. Skewness and Kurtosis statistics were also examined with no normality issues identified. Pearson correlation coefficients between the items were reviewed. For the four EFAs, findings showed that all EFA assumptions were substantiated. Namely, no multicollinearity was identified because the inter-items correlations ranged between .30 to .80. The determinant values were .04, .02, .06, and .12, signaling that singularity was not problematic. Pertaining to sample adequacy, the KMO test for the four EFAs (.88, .89, .86, and .84) were "Meritorious" (Pett et al., 2003). Findings also showed that the correlation matrix was not an identity matrix as supported by significant Bartlett's Tests of Sphericity ($\chi^2[66] = 1600.87$, $p < .001$; $\chi^2[36] = 1269.26$, $p < .001$; $\chi^2[15] = 862.78$, $p < .001$; $\chi^2[10] = 676.50$, $p < .001$).

Table 2. Descriptive Statistics for the Social Media Motives Scale Items (N = 31)

Items	M	SD
1. I use SM to know how to do something.	3.83	1.01
2. I use SM to get someone to do something for me.	2.36	1.19
3. SM improves my understanding of the topics.	3.68	1.09
4. I use SM to find out more about something or someone.	4.12	.97
5. I use SM to search for professional experts.	3.22	1.21
6. SM helps me to improve my academic success.	2.89	1.16
7. I use SM to provide updates about major events and fun things in my life.	3.74	1.19
8. I use SM to keep in touch with others.	4.18	1.03
9. I use SM because my friends do.	3.30	1.28
10. I use SM to involve with what's going on with others.	3.51	1.14
11. I use SM to connect with people who share similar values, hobbies, or interests.	3.64	1.12
12. I use SM to express my opinion and character.	3.27	1.29
13. I use SM to express my talent and creativity.	3.16	1.23
14. I desire my posts to be viewed by a bigger audience as much as possible.	2.68	1.29
15. I use SM for sharing information.	3.71	1.17
16. When producing SM content, I can use the kind of information, skills, or capacities I wouldn't be using otherwise.	2.83	1.12
17. I use SM to have fun.	3.96	.98
18. I use SM to relax.	3.78	1.10
19. I use SM when I have nothing else to do.	4.07	1.06
20. I use SM to chatter and share gossip.	2.64	1.25
21. I use SM to impress.	2.47	1.20
22. I joined SM to enhance my social life.	2.97	1.31
23. I want to become famous by using SM.	2.05	1.23
24. I use SM because I seem to have more prestige than those who do not.	1.91	.98
25. I use SM to reveal my presence.	2.43	1.22
26. Audience's responses, such as share, like, and comments, increase my engagement in SM.	3.11	1.31
27. I use SM because it is free and available.	3.94	.95
28. I use SM because it is easier.	3.57	1.04
29. I use SM because others can answer anytime.	3.56	1.09
30. In SM, I can get to decide what to produce and where to do so independently.	3.46	1.13
31. SM enables me to do things on my pace.	3.42	1.08

Note. All items had a range from 1 to 5.

Exploratory Factor Analyses Results

After examining the assumptions for the four EFAs, PAF with Direct Oblimin rotation was run. The four EFAs included analyses were conducted, including: (1) Active personal motives, (2) Passive motives, (3) Active contextual motives, and (4) The factor of convenience. For personal active motives, a one-factor solution was identified using the eigenvalue greater than 1 rule. However, the Parallel Analysis and the scree plot (see Figure 2) suggested a two-factor solution. Examining the pattern matrix showed that all items loaded at .40 or above with no cross-loadings. In contrast, the structure matrix displayed some cross-loadings. However, these cross-loadings were not problematic because the differences between loadings were proportionately big (i.e., > .150; Thompson, 2004) except for one item that was eliminated (i.e., item 2). A final two-factor solution was retained (N = 10 items), accounting for 50.79% of the variation (see Table 3.A). The items loaded in first factors exhibit the users' attempts to actualize themselves in the virtual world, naming this factor as "Self-Actualization Motive" (SAM, N = 5 items). The other five items loaded in the second factor, expressing the purposeful use of SM. Thus, the second factor was named as "Purposive Motives (PM)."

For the passive motives, a unidimensional solution was suggested (N = 9) accounting for 46.89% of the total variance (see Table 3.B). This factor was called "Enjoyment Motives (EM)" as it reflects users' SM enjoyment through socializing and entertaining. Likewise, results confirmed a one-factor solution for the active contextual motives (N = 6), explaining 53.13% of the variability (see Table 3.C). This factor reflects participants' techniques to increase visibility and garner attention. Thus, this factor was named "Self-Enhancement Motives (SEM)." For neither active nor passive motives, results supported a unidimensional solution (N = 6), accounting for 54.77% of the total variance (see Table 3.D). This factor exhibited the practicality of SM, supporting the name "Factor of Convenience Motives (FCM)."

Table 3. Principal Axis Factoring (PAF) Factor Loadings with Direct Oblimin (δ = 0) Rotation

A. Active Personal Motive Items (*n* =10)	**Factor 1 Self-Actualization**	**Factor 2 Purposive**
I use SM to express my opinion and character.	.84	
I use SM to express my talent and creativity.	.84	
I desire my posts to be viewed by a bigger audience as much as possible.	.70	
I use SM for sharing information.	.64	
When producing SM content, I can use the kind of information, skills or capacities I wouldn't be using otherwise.	.54	
SM improves my understanding of the topics.		.80
SM helps me to improve my academic success.		.68
I use SM to know how to do something.		.67
I use SM to search for professional experts.		.65
I use SM to find out more about something or someone.		.62
Cronbach's Alpha	.85	.82
Eigenvalue	4.13	.95
Variance Explained (%)	41.27	9.52
B. Passive Personal Motive Items (*n* = 9)		Factor 1 Enjoyment
I use SM to have fun.		.79
I use SM to keep in touch with others.		.76
I use SM to relax.		.74
I use SM to involve with what's going on with others.		.72
I use SM to connect with people who share similar values, hobbies, or interests.		.71
I use SM when I have nothing else to do.		.69
I use SM to provide updates about major events and fun things in my life.		.66
I use SM to chatter and share gossip.		.55
I use SM because my friends do.		.49
Cronbach's Alpha		.88
Eigenvalue		4.22
Variance Explained (%)		46.89
C. Active Contextual Motives Item (*n* = 6)		Factor1 Self-Enhancement
I use SM to reveal my presence.		.83
I use SM to impress.		.78
I use SM because I seem to have more prestige than those who do not.		.77
Audience's responses, such as share, like, and comments, increase my engagement in SM.		.73
I joined SM to enhance my social life.		.66
I want to become famous by using SM.		.56
Cronbach's Alpha		.86
Eigenvalue		3.19
Variance Explained (%)		53.13%
D. Neither Active nor Passive Contextual Motives Items (*n* = 6)		Factor of Convenience
I use SM because it is easier.		.80
I use SM because others can answer anytime.		.80
I use SM because it is free and available.		.79
In SM, I can get to decide what to produce and where to do so independently.		.74
SM enables me to do things on my pace.		.55
I use SM because it is easier.		.80
Cronbach's Alpha		.85
Eigenvalue		2.74
Variance Explained (%)		54.77%

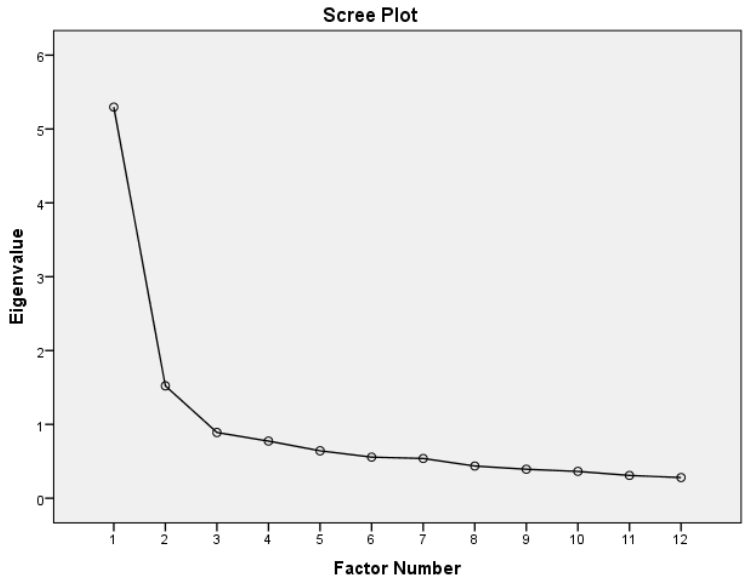

Figure 2. Scree plot of the active personal motives

Results of Study 2

Demographic Descriptive Statistics

The sample contained 200 students form the Midwest of U.S. Fifty-five students (27.5%) were males, and 142 (71.0%) were females. Likewise, there were 146 (73.0%) undergraduates, while 54 (27.0%) were graduate students. The mean age was 23.77 (*SD* = 8.00). Six percent of the participants reported that English was their second language (*n* = 12), while 94% reported that English was their first language (*n* = 188). The overwhelming majority of participants owned smartphones (*n* =196).

Main Variable Descriptive Statistics

Descriptive statistics were examined (see Table 4) for the 30 items. No outliers ($z \pm 2.58$) were found. Skewness and Kurtosis statistics were also examined with no normality violations. Additionally, Pearson correlations between the items were reviewed.

Table 4. Descriptive Statistics for the Social Media Motives Scales Items (N = 30 items)

Variables	*M*	*SD*
PM1. I use SM to know how to do something.	3.78	1.06
PM3. SM improves my understanding of the topics.	3.59	1.05
PM4. I use SM to find out more about something or someone.	4.04	1.04
PM5. I use SM to search for professional experts.	3.11	1.21
PM6. SM helps me to improve my academic success.	2.88	1.12
SCM1. I use SM to provide updates about major events and fun things in my life.	3.68	1.25
SCM2. I use SM to keep in touch with others.	4.13	1.06
SCM3. I use SM because my friends do.	3.32	1.25
SCM4. I use SM to involve with what's going on with others.	3.41	1.18
SCM5. I use SM to connect with people who share similar values, hobbies, or interests.	3.51	1.19
SAM1. I use SM to express my opinion and character.	3.30	1.19
SAM2. I use SM to express my talent and creativity.	3.16	1.24
SAM3. I desire my posts to be viewed by a bigger audience as much as possible.	2.63	1.30
SAM4. I use SM for sharing information.	3.52	1.18
SAM5. When producing SM content, I can use the kind of information, skills, or capacities I wouldn't be using otherwise	2.77	1.06
EM1. I use SM to have fun.	3.87	1.09
EM2. I use SM to relax.	3.71	1.21
EM3. I use SM when I have nothing else to do.	3.96	1.15
EM4. I use SM to chatter and share gossip.	2.53	1.21
SEM1. I use SM to impress.	2.34	1.21
SEM2. I joined SM to enhance my social life.	2.86	1.33
SEM3. I want to become famous by using SM.	2.06	1.23
SEM4. I use SM because I seem to have more prestige than those who do not.	1.83	.94
SEM5. I use SM to reveal my presence.	2.31	1.20
SEM6. Audience's responses, such as share, like, and comments, increase my engagement in SM.	2.84	1.28

Table 4. Continued

Variables	*M*	*SD*
FCM1. I use SM because it is free and available.	3.86	1.03
FCM2. I use SM because it is easier.	3.45	1.07
FCM3 I use SM because others can answer anytime.	3.47	1.13
FCM4. In SM, I can get to decide what to produce and where to do so independently.	3.40	1.05
FCM5. SM enables me to do things on my pace.	3.35	1.02

Confirmatory Factor Analyses Results

Study 1 conducted four EFAs. Correspondingly, Study 2 aimed to confirm the results for four models, including: (1) The active personal motives with a two-factor structure (i.e., purposive and self-actualization motives; n = 10 items), (2) The passive motives with one factor (i.e., Enjoyment; n = 9 items), (3) The active contextual motives with a one-factor solution (i.e., self-enhancement, n = 6 items) and (4) The factor of convenience (n = 5 items). Maximum Likelihood estimation was used to render the model fit indices. The items with the highest regression weight were restricted to be equal to one for each factor (Little et al., 2006). This facilitates the recognition of the metric scale for factors. In other words, Gonzalez and Griffin (2001) clarified that specifying an item's loading to one reveals the amount of variance correlated with a one-unit increase of a constrained weight.

An initial analysis of Model 1 demonstrated poor model fit. In detail, the Chi-square GoF test (χ^2[34] = 76.60; p < .001) was significant. The RMSEA, SRMR, and AGFI were .08, .07, and .89, respectively. To improve model fit, the modification indices suggested adding three error covariances (i.e., SAM1 to SAM2, PM3 to PM5, and PM5 to PM6). All modifications were supported theoretically. For instance, item PM5 (i.e., "I use SM to search for experts.") could potentially be related to SM users' understanding of various topics as in item PM3 (i.e., "SM improves my understanding of topics"). The modified model had a good fit (see Table 5. A). All standardized coefficients were statistically significant (see Figure 3).

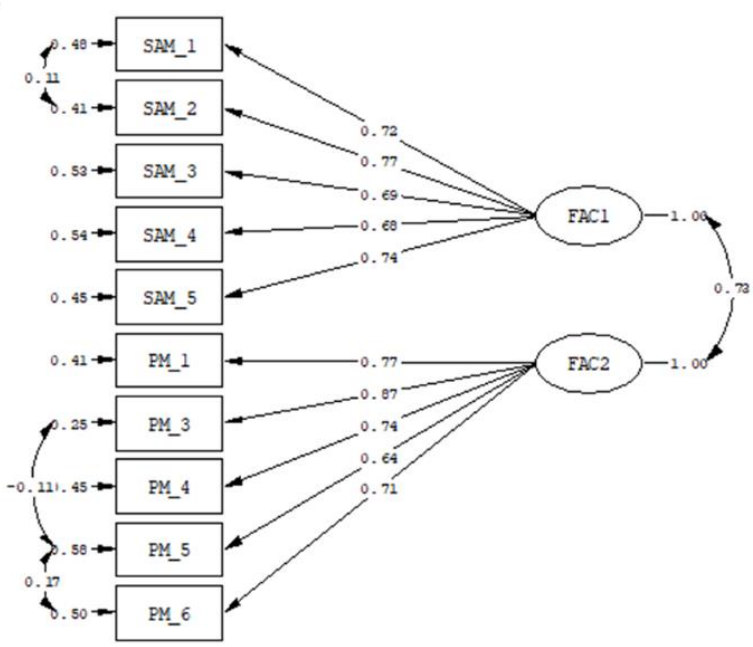

Figure 3. The standardized estimates of active personal social media motives.

Likewise, initial Model 2 results illustrated poor model fit with a significant Chi-square GoF test (χ^2[27] = 55.96; p < .001). The RMSEA and SRMR were .07 and .06, respectively. Modification indices suggested adding two error covariances (i.e., SCM3 to EM1 and EM1 to EM2). The modified Model 2 had a good fit (see Table 5.B). Standardized coefficients were statistically significant (see Figure 4). For the third model, the results demonstrated a good fit (see Table 5.C) with a non-significant Chi-square (χ^2[10] = 14.32; p =.16) and acceptable fit indices. Similarly, the Model 4 results had a good model fit (see Table 5.D).

Table 5. Maximum Likelihood Standardized Estimates and Fit Indices for the Confirmatory Factor Analysis Models 1 and 2

Model, Items, and Fit Indices	**Factor Solution**		R^2
A. Model 1: Active Social Media Motives	Factor 1: Self-Actualization	Factor 2: Purposive	
SAM1. I use SM to express my opinion and character.	.72		.49
SAM2. I use SM to express my talent and creativity.	.77		.53
SAM3. I desire my posts to be viewed by a bigger audience as much as possible.	.69		.44
SAM4. I use SM for sharing information.	.68		.44
SAM5. When producing SM content, I can use the kind of information, skills, or capacities I wouldn't be using otherwise.	.74		.52
PM1. I use SM to know how to do something.		.77	.55
PM3 SM improves my understanding of topics.		.87	.67
PM4. I use SM to find out more about something or someone.		.74	.52
PM5. I use SM to search for professional experts.		.64	.39
PM6. SM helps me to improve my academic success.		.71	.47
Selected Fit Indices			
χ^2	43.70		
RMSEA	.04		
SRMR	.04		
GFI	.96		
AGFI	.93		
NFI	.96		
B. Model 2: Passive Social Media Motives	Factor 1: Enjoyment		R^2
SCM1. I use SM to provide updates about major events and fun things in my life.	.75		.50
SCM2. I use SM to keep in touch with others.	.72		.50
SCM3. I use SM because my friends do.	.70		.48
SCM4. I use SM to involve with what's going on with others.	.68		.44
SCM5. I use SM to connect with people who share similar values, hobbies, or interests.	.65		.40
EM1. I use SM to have fun.	.75		.54
EM2. I use SM to relax.	.66		.42
EM3. I use SM when I have nothing else to do.	.67		.43
EM4. I use SM to chatter and share gossip.	.54		.28
Selected Fit Indices			
χ^2	32.45		
RMSEA	.03		
SRMR	.03		
GFI	.97		
AGFI	.94		
NFI	.96		
C. Model 3: Active Contextual Motives	Factor1: Self-Enhancement		R^2
SEM1. I use SM to impress.	.74		.54
SEM2. I joined SM to enhance my social life.	.67		.44
SEM3. I want to become famous by using SM.	.58		.33
SEM4. I use SM because I seem to have more prestige than those who do not.	.71		.50
SEM5. I use SM to reveal my presence.	.81		.63
SEM6. Audience's responses, such as share, like, and comments, increase my engagement in SM.	.64		.41
Selected Fit Indices			
χ^2	14.32		
RMSEA	.05		
SRMR	.03		
GFI	.98		
AGFI	.95		
NFI	.97		
D. Model 4: Neither Active nor Passive Motives	Factor1: Factor of Convenience		R^2
FCM1. I use SM because it is free and available.	.76		.57
FCM2. I use SM because it is easier.	.84		.69
FCM3 I use SM because others can answer anytime.	.86		.71
FCM4. I can get to decide what to produce and where to do so independently.	.78		.52
FCM5. SM enables me to do things on my pace.	.67		.44
Selected Fit Indices			
χ^2	8.74		
RMSEA	.05		
SRMR	.02		
GFI	.98		
AGFI	.95		
NFI	.98		

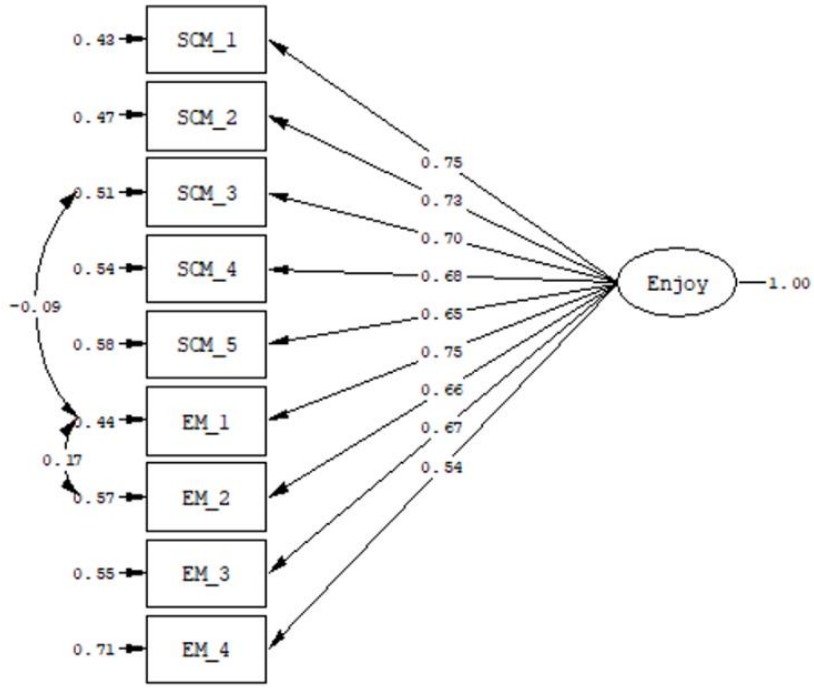

Figure 4. The standardized estimates for the passive social media motives.

Construct Validity Indices

Validity is the procedure by which "a test developer or test user collects evidence to support the types of inferences that are to be drawn from test scores" (Crocker & Algina, 2008, p.217). In other words, in the context of this study, it is the mechanism that is used to demonstrate the ability of the SM motives scale to measure undergraduates' SM motives. Only one type of validity (i.e., Construct Validity) was addressed. Literature has articulated that SM motives are affected by many variables such as gender, age, and the number of hours of smartphone use. As an illustration, females use SM for social and enjoyment purposes more than their male counterparts (Frison & Eggermont, 2016). Furthermore, young adults use SM via smartphones for a longer time compared to older adults. Thus, young adults have stronger motives for using SM, and as users become more attached to SM, they spend more time browsing these websites (Al-Menayes, 2015).

In the correlation matrix (see Table 6), gender was significantly correlated with the two categories of motives (i.e., enjoyment and factor of convenience). That is, females used SM for enjoyment (r = .28, p <.01) and they perceived SM easiness of use (r = .19, p < .01). Similarly, younger age hold higher level of self-actualization motives (r = -.20, p < .01), purposive motives (r = -.25, p < .05), enjoyment (r = -.20, p < .01), self-enhancement (r = -.33, p < .01) and factor of convenience (r = -.25, p < .01) compared with elder peers. In other words, the younger the users are, the more eager to embrace SM. Smartphone use duration also was significantly associated with all SM motives. Given that, the strongest association was with self-enhancement motives (r = .31, p < .01), and the weakest associations were with self-actualization (r = .18, p < .05), enjoyment (r = .15, p < .01) and eases of social media (r = .15, p < .01).

Table 6. Correlation Coefficients between the Factors and Selected Variables

Variables	1	2	3	4	5	6	7	8
1. Gender	-	.09	.08	.07	.07	.28**	.04	.19**
2. Age		-	-.20**	-.25***	-.20**	-.33***	-.41***	-.25***
3. Smartphone Use Duration			-	.18*	.21**	.15*	.31***	.15*
4. Self-Actualization motives				-	.61***	.70***	.64***	.66***
5. Purposive Motives					-	.63***	.44***	.68***
6. Enjoyment Motives						-	.61***	.77***
7. Self-Enhancement Motives							-	.54***
8. Factor of Convenience								-

Note. *p<.05, **p < .01, ***p<.001.

Furthermore, literature underlined the significant correlation between SM use and motives (Khan, 2017). Therefore, there is a strong likelihood of finding differences between productive use (i.e., design and share purposeful content), consuming use (i.e., watch and response to posts), and disinterested use (i.e., have zero interest in SM) in terms of SM

motive. Disinterested users have little to no motivation to use SM compared to the other two. Hypothetically, productive users seek to fulfill their motives by using SM relative to consumers.

To provide additional evidence of Construct validity, a One-way ANOVA was used to investigate the differences in SM motives between three types of use – Productive, consuming, and disinterested. Examining the assumptions demonstrated a violation of normality among the use's groups and the presence of seven outliers on the enjoyment motives. After eliminating outliers, normality was satisfied. Homogeneity of variance was also upheld among the groups across the five motives. Results illustrated significant differences between the types of SM use on the five motives (see Table 7). Given the fact of unequal sample size between groups and a small number of comparisons, post-hoc comparisons, particularly Bonferroni adjustment, were conducted (Lomax & Hahs-Vaughn, 2012). Findings showed that disinterested participants hold the lowest level of motivation across the five categories. The productive group had significantly stronger SAM and SEM compared to the consumer's group. There were no significant differences between producers and consumers on PM and FCM.

Table 7. Social Media Motives Differences across Use Types Groups ANOVA results

Motives	Source	SS	df	MS	F	Effect Size (η^2)
	Use Groups	54.59	2	27.29	61.14***	.39
Self-Actualization	Within	84.82	190	.45		
	Total	139.40	192			
Purposive Motives	Use Groups	11.68	2	5.84	12.85***	.12
	Within	86.39	190	.46		
	Total	98.07	192			
Enjoyment Motive	Use Groups	33.47	2	16.74	55.54***	.37
	Within	57.25	190	.30		
	Total	90.71	192			
Self-Enhancement	Use Groups	23.56	2	11.78	18.09***	.16
	Within	123.73	190	.65		
	Total	147.28	192			
Factor of Convenience	Use Groups	31.58	2	15.79	41.52***	.30
	Within	72.25	190	.38		
	Total	103.83	192			

Note. $^{*}p<.05$, $^{**}p < .01$, $^{***}p<.001$.

Discussion

Social media (SM) is a growing influence in Millennials' lives in multiple ways. However, the types of SM's influences (i.e., positive vs. negative) depends greatly on their motives and intentions when using SM (Luchman et al., 2014). For example, some students watch YouTube to understand certain mathematical problems, and others join Snapchat to have something to pass the time. For the most part, Millennials have various motives for using SM, shaping the duration of use and the specific SM websites they select as primary outlets (Choi & Kang, 2014). Correspondingly, their motives characterize the quality of their participation. Meaning, some Millennials have extensive skills to produce impressive content (i.e., active use), or they can read, watch, and do nothing (i.e., passive use), or they have zero interest in SM (i.e., disinterested users). Therefore, the current study aimed to construct the SM Motives Scale and assess its' psychometric properties.

Study 1 resulted in a 30-item scale that spanned five SM motives including: (1) Self-actualization motives (i.e., the desire to actualize one's entity in the virtual world), (2) Purposive motives (i.e., accomplishing productive goals like learning new skills), (3) Enjoyment motives (i.e., deriving enjoyment from socializing, playing, and watching entertaining content), (4) Social enhancement motives (i.e., creating an online impressive presence and status of importance), (5) Factor of convenience (i.e., accessibility and easiness of use). Study 2 CFA results confirmed the factor structure after some modifications, which were supported by empirical research.

Study findings implied several original and fruitful insights, adding more depth to previous research findings (Al-Menayes, 2015; Choi & Kang, 2014; Khan, 2017). The simplistic classification of Luchman et al. (2014) in two fun-related and content-specific motives intersected with the enjoyment and productive motives presented in this study. Other SM motives presented by the current study cover a wide range of legitimate intentions for using SM. Undergraduate students seek to learn, show their talents, feel that they can influence others, and have fun through accessible and free online outlets. For instance, Millennials can discuss a critical issue about their community using Twitter with experts (e.g., faculty members, politicians, journalists, and others) while they are sitting in their room. The impact of tweeting is amplified when their tweets get high rates of response, shares, and likes, which in turn create a sense of influence in the virtual world.

Construct validity results demonstrated differences between three types of SM use in the level of users' SM motives. That is, the disinterested participants have the lowest level of motivation regardless of SM use's type. This result coincides with the resistance that disinterested users would have expressed while creating SM accounts (Choi & Kang, 2014). Findings also underlined the significant differences between producers and consumers in the self-actualization and self-enhancement. Given that, producers are more interested in actualizing their talent and ideas relative to consumers by producing content, tweeting for achieving specific purposes, and posting influential content. Similarly, producers are more likely to seek self-enhancement by creating content that impresses the audience. Particularly, the pattern of audience responses strengthens users' sense of accomplishment, specifically with the features that SM provides to such users. For instance, YouTube has a system of rewards for the "YouTuber" (i.e., YouTube content creator). Three awards are presented for content creators/developers, including: (1) the Silver award (i.e., YouTube channel with 100,000 subscribers), (2) the Gold award (i.e., one million subscribers), and (3) the Diamond award (i.e., ten million subscribers). These incentives boost user's confidence, self-actualization, and enhancement.

However, no significant differences were found between producers and consumers in productive motives, enjoyment, and factor of convenience. This can be explained in light of Khan's (2017) findings. He found that the association between active use and productive motive assimilates the association between the passive use and entertainment motives. That is, the active user (i.e., producers) shares information and uploads content, which is an example of productive motives. Comparatively, the consumer reads the posts without replying and watches content, which is a form of passive use to enjoy and kill time. Furthermore, enjoyment motives are a significant predictor of liking and disliking videos as an active use and a predictor of watching video as a passive use (Khan, 2017).

Limitations and Applications

The present study has several limitations. The data was collected by self-reported measures. This increases the chances of response bias due to a variety of reasons, which include socially desirable responses or/and misunderstanding of items (Rosenman et al., 2011). In addition, the generalizability of study findings is limited because the sample consisted of college-age students from a single public university in U.S. Furthermore, a potential bias might affect current study findings, as the sample is skewed towards females. Only, the duration of using the smartphone as a device of checking SM was gathered to measure the time allocated for online SM use. Other related demographic and contextual information was not collected (e.g., ethnicity, online connectivity, types of SM, average time spending on SM).

As well, the current study revealed many conceptual salient findings. First, a quality scale with good psychometric properties assessing undergraduate SM motives has been constructed. This scale can be used in future studies, which can further the understanding of youth's SM motives in educational environments, among others as well. Also, the present study results yield empirical implications. In higher education institutions, many educators have students who use SM during their classes, which distracts them from learning (Wood et al., 2012). These faculty members may find that teaching students who use SM during class is unproductive and may question the quality of their students' learning (Jacobsen & Forste, 2011). However, the current study showed that undergraduates hold diverse SM motives. Educators may be able to guide these motives to establish an enjoyable and attractive learning experience. Designing working sessions and creating a dialogue with faculty members about how SM can be incorporated into teaching pedagogy can highlight best practices for bridging the gap between the attractiveness of SM use and learning. Overall, constructing the SM Motive Scale enhances future studies' attempts to investigate these motives in an academic context among other contexts that examine SM motives.

Regarding further studies, the following is a list of recommendation for future studies: (1) Comparing factorial structure across cultures and different age groups (i.e., assessing four levels of measurement invariance, particularly configural, metric, scalar, and strong invariance); (2) Examining the differences in SM motives across several SM websites (e.g., Twitter, Facebook, Instagram, Snapchat, YouTube, LinkedIn, WhatsApp, and Pinterest) by inquiring more contextual information about online SM use (e.g., online connectivity, types of SNS, average time spending on SNS) in future rounds of data collection, and (3) Modelling the association between users' behaviors (e.g., type of SM user, the activity level on SM websites as measured by duration of SM use per day and the response of audience) and SM motives in each SM websites by running sub-models that capture the associations between variables in Figure 1.

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