Are Busy People More or Less Likely to Use Social Networking Sites (SNSs)?: Prosumption, Time Budget, and SNS activities

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This study investigated social networking site (SNS) activities from a prosumption-time budget perspective, which is the combination of the prosumption and time budget perspectives. SNS activities were categorized into three groups: SNS consumption activities, SNS production activities, and total SNS activities. The associations between working time and the frequencies of these three kinds of SNS activities were examined. Data for the empirical analysis were collected through a mail and web survey with a sample of 253 respondents and a sample of 394 college students in the Midwest United State from September to November, 2012. Significant associations between working time and SNS production frequency were found for the two samples. Significant association between working time and total SNS activity frequency was found for the student sample. These significant associations suggest a new pattern that has not been revealed by previous studies: busier people are more active in SNSs.

Keywords: Prosumption; Time Budget; Social Networking Site; Uses and Gratifications

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The integration of consumption and production has become increasingly prominent in the social networking sites (SNSs). And many studies explored this trend using the concept of "prosumption" coined by Toffler (1980) (e.g., Beer & Burrows, 2010; Comer, 2011; Denegri-Knott & Zwick, 2012; Ha & Yun, 2014 Ritzer & Jurgenson, 2010). Toffler (1980) defined prosumption as the "unpaid work done directly by people for themselves, their families, or their communities" as the sector A of an economy, which is a counterpart of the sector B that is the production of goods or services for sale in the marketplace (p. 283). SNSs facilitate the fusion of production and consumption with a greater extent than ever since it enables users to

consume and produce content collaboratively. In this regard, Ritzer and Jurgenson (2010) noted that SNSs become the "most prevalent location of prosumption" (p. 20).

SNSs play a significant role in the contemporary society. They attract a huge number of Internet users. Pew Research Center (2015a) reported that 65% of worldwide online adults use SNSs in 2015, rising up from 7% in 2005. The major SNSs, such as Facebook, Twitter, and Instigram are among the top 20 most accessed websites ("List of most popular websites", n.d.). The prosumption perspective is crucial for the study of SNSs as most of the content on these SNSs are user-generated for the sake of users themselves and other people in the networks, and the production of this user-generated content is unpaid. The significance of SNSs is also reflected by the increasingly large amount of time people spent on SNSs (Ipsos, 2013). Globalwebindex (2015) reported that users' average daily time spent on SNSs climbed from 1.61 hours to 1.72 hours from 2012 to 2014 in the globe. This trend is prominent in the era of time famine, that is, people feel more time pressure to do things than ever before (e.g., Robinson, 2017; Warren, 2003; Jacobs & Gerson, 2001; Robinson & Godbey, 1999).

Time is a scarce resource that constrains people's time allocations on various activities. Economists explored this scarce resource and developed the concept time budget, which is the time availability for different activities, to investigate people's rational decisions on time allocation (Converse, 1968). Time is also a constraint for people's various SNS activities as these activities take a considerable amount of time and people need to make decisions on how much time spent on these activities.

Therefore, time budget should be employed as an analytical framework to explore how people's time availability affects their SNS activities including content consumption and production, which are increasingly integrated in SNSs. To authors' knowledge, there is no published research exploring the relationship between time budget and various SNS activities. This study aimed to fill this lacuna in the literature. It examined the associations between working time and the frequencies of various SNS activities. The significant results indicated that time budget is a new perspective that helps us understand people's behaviors on SNSs.

LITERATURE REVIEW

Prosumption and Social Networking Sites (SNSs)

The term of "prosumption" was firstly coined by Toffler (1980) and has been employed by other scholars. It represents a relationship of production and consumption that involves a co-creative, participatory as well as co-generated process, where the roles of producer and consumer are hardly separated (Comor, 2010; Ritzer & Jurgenson, 2010; Toffler, 1980). Toffler (1980) identified three waves of revolutionary changes in human history: The first wave is the replacement of the hunter-gather society by the agriculture society; The second wave is the process of marketization that separates consumers and producers; And the third wave is that the roles of consumers and producers are hard to separate clearly, enlightening the notion of prosumption. He called the third wave is the "rise of prosumers" (p.282). In Toffler's theory, prosumers consider one another to be equally free as the creators or co-creators of exchangeable things (Ritzer & Jurgenson, 2010). As a futurist, Toffler predicted that prosumption will construct a new civilization and enables people to be creative, self-sufficient, and then, overcome alien¬ation (Comer, 2011).

After Toffler's work, the coexistence of production and consumption, i.e., the prosumption, has been further explored by recent studies (e.g., Bruns, 2008; Campbell, 2005; Comor, 2010; Ha & Yun, 2014; Ritzer & Jurgenson, 2010). Various terminologies proposed by other scholars for this process indicate its proliferation in the literature. For example, different from Toffler's term of "prosumer", Campbell (2005) raised the notion of "craft consumers" to represent the group of people who can produce and craft things as well as consume. Bruns (2008) proposed the concept of "produsage" emphasizing a hybrid role of the users as both producers and consumers. But Toffler's "prosumer" has been more frequently used by the scholars in communication studies (e.g., Comor, 2011; Ha & Yun, 2014; Rey, 2012).

The erosion of the distinction between production and consumption has become more prominent in the SNS world, where the content is shared and created based on the principles of open participation, communal evaluation, fluid hierarchy, and common property with individual rewards (Ha & Yun, 2014). Blogs, wikis and social network sites enable millions to craft and transmit texts, sounds, and images instantly worldwide,

employing their creative and collective talents (Beer & Burrows, 2010; Denegri-Knott & Zwick, 2012). Ritzer and Jurgenson (2010) argued SNSs have become the "most prevalent location of prosumption and its most facilitator as a 'means of prosumption'" (p. 20).

SNS Use: A Uses and Gratifications Perspective

boyd and Ellison (2008) defined a SNS as the web-based service that allows individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and to view and traverse their lists of connection and those made by others within the system.

Communication scholars applied the Uses and Gratifications (U&G) theory to explore the motivations of SNS use and the gratifications the users obtain from SNSs. Some studies argued that building relationships is the primary motivation for SNS use. For example, Bargh & McKenna (2004) suggested that computer-mediated communication not only plays a vital role in the maintenance of interpersonal relationships, but also helps individuals establish new relationships. Dunne, Lawlor, and Rowley (2010) confirmed the SNS's advantageous roles in facilitating young people's negotiation with problems arising from offline life. Kujath (2011) argued that SNSs are not a substitute for face-to-face communication but as an extension to interactions in real life. Related to this motivation, other studies argued that the motivation of building social identities drives the SNS use. For example, Lee, Kim, Lee, and Kim (2012) discovered that exchange students used Facebook to maintain their cultural identities during their time abroad. Dunne et al. (2010) indicated that the usage of SNSs not only gave young people a platform to create and manage their online social identities but also provided them an opportunity to establish their commercial identities.

Additionally, some scholars explored other motivations and gratifications of SNS use. Some of them focused on the entertainment aspect. For example, Hunt, Atkin, and Krishnan (2012) contended that the entertainment is the most powerful motivation for people to use Facebook. Sheldon (2008) argued that many people use Facebook just for passing time. Some focused on the news usage in SNSs. For example, Purcell, Rainie, Mitchell, Rosenstiel, and Olmstead (2010) found that 28% of Internet users have added news to their SNS home pages, and 37% of Internet users have had the experience of creating, circulating, and discussing news on SNSs. Ma and Lee (2011) argued that

individuals who were driven by gratifications of information seeking, socializing, and status seeking were more likely to share news in SNSs.

Although people obtain various gratifications from SNSs, the impacts of SNSs on their lives are not always positive. Besides the positive effects, such as building social capital (Valenzuela, Park, & Kee, 2008), strengthening weak ties and maintaining existing relationships (McEwan, 2013), boosting self-esteem (Toma & Hancock, 2013), and promoting social support (Nabi, Prestin, & So, 2013), scholars noted that SNSs could have negative effects. For example, SNS usage is related to exhibitionism (Wang & Stefanone, 2013), narcissism (Mehdizadeh, 2010), and voyeurism (Mäntymäki & Islam, 2014). Social comparisons made on SNSs can be detrimental (Johnson & Knobloch-Westerwick, 2014). SNSs could be used as conduits for cyberbullying, stalking, and online harassment (Kwan & Skoric, 2013). And false news spread faster, deeper, and more broadly than true news on SNSs (Vosoughi, Roy, & Aral, 2018). To alleviate the negative effects, Moorcroft (2008) suggested that the bottom line is to use SNSs in a thoughtful manner. Some scholars also posited that the overall negative effects of SNSs are associated with the time spent on them. For example, Bevan, Gomez, and Sparks (2014) found the negative association between the time spent on Facebook and the quality of life. Kross et al. (2013) revealed the time spent on Facebook is associated with a significant decrease in well-being. Fang, Chao & Ha (2017) explained common criticism of social media use is the time it took away from work or study while ignoring the positive effect that social media can bring to individuals in mood adjustment, perceived social support with fond memories.

Time Budget and Media Use

The problem of time scarcity was explored by scholars as early as the 1970s, and has become one of the major research topics on families and households (Kraaykamp, Van Gils, & Van der Lippe, 2009). De Grazia's (1962) warned the dangers of a life dictated by the clock. Linder (1970) argued that people are "subjected to the pressure of time famine" (p. 62) and becoming increasingly hurried. Due to the importance of time scarcity, some scholars studied the time allocation and its change patterns in western countries. For example, Robinson and Godbey (1999) studied the trends in time use patterns of Americans in the second half of last century. They argued that in the past leisure was regarded as "behavior undertaken without reference to time" (p. 45), and today leisure

time is spent as efficiently as working time. Likewise, Kelly (1982) stated since people try to pack as many as activities into the leisure time, leisure become less leisurely. Several studies focused on the families of working couples and found that these couples have a strong feel of time pressure and speeding up of life (e.g., Hochschild & Machung, 2003; Mattingly & Sayer, 2006; Southerton, 2003; Van der Lippe, 2007). These studies echoed Schor's (1991) findings that Americans now work longer than their parents and grandparents, and their leisure time is declining. Wajcman (2008) discussed the relationship between technology use and the growing scarcity of time. She argued that the pervasiveness of information communication technologies (ICTs) have accelerated people's life paces and transformed communication patterns and social networks.

Despite their strong feeling of time scarcity, people still spend much time on media. In 2017, American people on average spent 721 minutes (50% of 24-hour) per day with media (Statista, 2017). Globally, people on average spent 456.1 minutes (31.7% of 24-hour) per day consuming media in 2016 (Molla, 2017). This large amount of media consumption time can partly be attributed to the heavy SNS use on smartphone and mobile devices, which has become the new daily routine for news, entertainment and communication with friends and family as shown in the latest Pew Internet's Social Media Use Report in the United States (Smith & Anderson, 2018).

According to the definition of Organization for Economic Co-operation and Development (OECD, 2002), the majority of contemporary media platforms, including antenna radio, TV, computer and mobile phone, are ICTs. Although many studies demonstrated non-digital ICTs use such as shopping and eating out occupy much of people's leisure time in the history (Eurostat, 2000; Leisure Trends Group Inc, 1996; Robinson & Godbey, 1997, 1999; Selberg, 1998), digital ICTs consume more time than ever before. For example, in 2017, American people on average spent 197 minutes on mobile media (non-voice) and 123 minutes on laptop and desktop (Statista, 2017).
People use digital ICTs, not only for leisure but also for work. Indeed, Wajcman (2014) posited ICTs extend working time to leisure time and increase the work tempo. And ICTs also intensify leisure because of multitasking/multiscreen activities. Therefore, she argued that ICTs are the major driver of time pressure. However, other research also argued that people could use ICTs for leisure at workplace. For example, Boczkowsi (2010a)

demonstrated that many people read online news in the office. Therefore, the boundary between work and leisure is becoming blurred (Wajcman, 2008). As one of the major ICT platforms, SNSs are further blending work and leisure as many organizations set up their official Facebook and Twitter pages. Specific SNSs have been created for professional connectivity, such as LinkedIn and ResearchGate. And SNSs have become a popular marketing platform and created their own niche in the business world (Ramsaran-Fowdar & Fowdar, 2013).

No matter what people use ICTs or non-ICT media for, and no matter to what extent the multitasking is, it is evident that people spend a huge amount of time on various media platforms. As time is a limited resource, it is worthwhile to analyze how people allocate their time on media activities and other non-media activities, on different media platforms, and on different activities on the same media platform. The rational choice theory provides a useful perspective to explore these questions. The rational choice theory is a framework that theorizes and models social and economic behaviors. In economics, the rational choice theory posits an individual pursues the maximum utility by choosing the best choice among alternatives, and his/her preferences among alternative choices plays a central role in the best choice selection (Blume & Easley, 2008). Economic theory defines utility as "how consumers rank different goods and services" (Samuelson & Nordhaus, 2004, p.84), and preference as the representation of "a variety of cultural and historical influences", and this term may reflect "genuine psychological or physiological needs" (p.48). Nevertheless, economic theory posits utility is not a psychological function (Samuelson & Nordhaus, 2004). To overcome this contradiction, Samuelson (1938) proposed "revealed preference" by arguing that an individual's preferences are exhibited by his/her purchase choices under the rationality assumption. However, this construct has raised some criticisms. For instance, Mishan (1961) argued that it has nothing to do with preference and simply is a shorthand description of consumers' choices. To address this contradiction, some economists developed the theory of bounded rationality in order to incorporate psychological factors without abandoning the concept of rationality (Gigerenzer & Selten, 2002).

Notwithstanding its criticisms, the rational choice theory is still working as a fundamental framework of neoclassical economics. And it has been applied as a

framework to analyze people's time allocations among different activities. In particular, Becker (1965) constructed a microeconomic model of the allocation of time between work and leisure activities. In this model, time allocation is similar as money allocation that is determined by the rational choice of individuals. Aligned with this model, the concept "time budget' was coined as an analogy to the economic term "income budget" (Converse, 1968). The basic assumption of time budget is that "time" can be considered as a quantitative resource, and individuals allocate time budget in the same manner as they do with income budget (Jackel & Wollscheid, 2007). This concept enables the economic analysis of people's decisions of time allocations.

The time spent on media is a crucial measure for the success of media companies because it represents audience's exposure to the editorial content and advertising messages. McQuail (1997) argued the availability of audiences is actually the availability of their time for media consumption, and different media compete with each other for media consumers' time. Albarran (2002) held that consumers' time spent on a medium indicates its competitiveness and advertisers buy time from media to reach consumers. Audience research companies, such as Nielsen, use media use time such as time spent listening (TSL) as one of the fundamental audience measurements that works as the currency for media industries (Webster, Phalen, & Lichty, 2013). In many media consumption studies, time spent on media has been used as the dependent variable (e.g., Chyi & Lasorsa, 2002; Chyi, 2006; Dutta-Bergman, 2004; Lee & Leung, 2006; Stempel, Hargrove, & Bernt, 2000). Nonetheless, these studies did not apply time budget perspective. Although there are some discussions on the influence of time budget on media use time (Arrese & Albarran, 2003; MaQuail, 2005; Webster & Phalen, 1997), only a few empirical studies have been conducted. Among those few studies, Seufert and Ehrenberg (2007) found that time budget had influence on electronic media use time but not on print media use time in Germany. Zhang and Ha (2015) found that time budget had influence on both print and electronic media use time in the United States. To the authors' best knowledge, no research has been published examining the influence of time budget specifically on SNS activities.

Research Questions

Based on the conception of prosumer of Toffler (1980), any non-business activity on SNSs excluding YouTube (which paid their creators) could be considered as a prosumption activity since it is unpaid work done directly by people for themselves, their families, or their communities. Nevertheless, people's SNS activities vary significantly as some mainly obtain/consume information on SNSs and contribute nothing or little, while others contribute/produce a lot of SNS content. To capture this variation, it is necessary to differentiate the different kinds of activities. That is, people's various SNS activities can be categorized into three groups: SNS consumption activities, SNS production activities, and total SNS activities including the consumption and production activities as well as other activities that are not included in these two types of activities. SNS consumption activities were defined as the activities that only obtain information or entertainment from SNSs. SNS production activities were defined as the activities that add to and share information on SNSs. Sharing information was included in SNS production because it increases the visibility and accessibility of the content created by other users and includes implicit endorsement and selection effort, and thus, drives social production (Shirky, 2009). Based on this categorization, the following research question was proposed:

> **RQ1: What are the associations among the amount of SNS consumption activities, the amount of SNS production activities, and the amount of total SNS social activities?**

From the time budget perspective, the allocation of time budget can be treated in the same way as the allocation of income budget (Seufert & Ehrenberg 2007). In the scenario of this study, a SNS user must make a decision to allocate his/her available time among SNS usage and other activities. Then, he/she must make a decision on what kinds of activities he/she perform on SNSs. Time is the constraint of all these activities because of the scarcity of time. And the time devoted to these activities is the resource the users allocate in the prosumption process on the SNS platforms. With all things equal, the more time a SNS user spend on SNSs, the more information or content he/she can obtain from and contribute to SNSs.

24-hour per day is the ultimate time constraint. However, the amount of time people allocate for various activities are different. The time allocated for different

activities can be categorized into working time for working activities and disposable time for non-working activities. If an individual has much working time and little disposable time, he/she has a tight time budget; if an individual has little working time and much disposable time, he/she has a loose time budget. As demonstrated by Hunt, Atkin, and Krishnan (2012), many people use SNSs for leisure purposes. Thus, the amount of disposable time would influence amount of leisure activities on SNSs. Nevertheless, several studies demonstrated that people use the Internet and mobile phones during their working time (e.g., Boczkowskia, 2010; Pew Research Center, 2008). In addition, SNSs have become an important marketing tool for many companies, and many employed people use SNSs, such as LinkedIn, to build relations with stakeholders. Thus, it is reasonable to argue that working time may also influence people's amount of professional-related activities on SNSs.

The assumption behind these analyses is people have leisure activities on SNSs during disposable time and have professional activities during working time. In the real world, the scenario should be more complex as people may have leisure activities during working time and professional activities during disposable time. Zhang and Ha (2015) demonstrated that time budget (the allocation between working time and disposable time) had influence on people's radio, TV, and print media use activities: People with tight time budget use less traditional news media but more digital new media. But they did not examine whether time budget has influence on people's SNS activities which may be for work or leisure purposes.

    People's allocations of working time and disposable time are largely determined by their socio-economic status, especially employment status. Previous studies also showed that SNS usage is influenced by demographic and socio-economic status variables (Akyldlz & Argan, 2012; Hunt et al. 2012; Dunne et al., 2010; Lee et al., 2012; Sheldon, 2008; Stefanone, Lackaff, & Rosen, 2010). These factors should be taken into account for the analysis of SNS activities.

    Based on these analyses, the following research questions of the relationship between time budget and specific SNS activities and overall total SNS activities were proposed:

RQ2: What is the association between time budget and the amount of SNS consumption activities after controlling for the demographic and socio-economic status variables?

RQ3: What is the association between time budget and the amount of SNS production activities after controlling for the demographic and socio-economic status variables?

RQ4: What is the association between time budget and the amount of total SNS activities after controlling for the demographic and socio-economic status variables?

METHODS

The data for this study were obtained via a mail and self-administered Web survey from September 6th to November 30th in 2012 as part of a large-scale media use study after receiving the approval from the Institutional Review Board of the authors' university at that time. Respondents were able to choose to respond to the web version of the survey rather than through mail. A mail survey and a web survey were used instead of a telephone survey because self-paced surveys, when administered via the web or through the mail, can avoid the time pressure and acquiescence bias inherent in telephone survey designs (Shrum, 2002). In addition, mail and web surveys facilitate honest answers as shown in previous studies comparing the results of different modes of survey (e.g., Kreuter, Presser & Tourangeau, 2008). This study used two sampling frames to cover both the general adult population and college population. These two populations were chosen because college students are heavy social media users (Ha, Joa, Gabay, & Kim, 2018) while the general adult population are older and use less social media (Smith & Anderson 2018). Because college students typically do not stay at their parents' home, they cannot be reached by regular household surveys. For the general population, a simple random sample of local residents (n=1500) was selected from a resident database in the Northwest Ohio region. Residents in the sample were sent a questionnaire package with a cover letter, a visually attractive questionnaire booklet, and a stamped reply envelope with a fresh one dollar bill as an incentive for participation, following the Tailored Design Method of Dillman (2007) that has shown to increase response rates. A postcard reminder was sent one week from initial contact. Individuals with e-mail addresses (n=250) were

contacted by e-mail to remind them to return the questionnaires. None of the respondents in the mail household survey were college students. For the college student sample, 36 small general education classes and two large introductory lecture courses, with a variety of majors and class standings from a Northwest Ohio public university, were used to recruit respondents. Students received an extra credit for participating in the study. College students were required to respond to the web version of the survey. A total of 647 responses were received, of which 253 were from residents and 394 were from college students.

The questionnaire has a question for measuring time budget. The respondents were asked to answer the following question: In a typical day, how many hours do you work on your job and/or attend school? The answer for this question was used as the measure for working time. As mentioned previously, more working time represents tighter time budget.

The questionnaire has a question for measuring respondents' various SNS activities. The activities items were based on various previous SNS studies on the things and purposes people use SNSs. Specifically, it asks the SNS users in the study: "How frequent do you do anything below on your social network sites?" 20 items were listed for this question as shown in Table 1. The frequency of doing each SNS activity was measured by a 5-point scale: 4 = Almost daily, 3 = Several times a week, 2 = Once a week, 1 = Once a month or less, 0 = Never. The respondents were asked to select one of these five scales for each item of this question.

These 20 items in the question were categorized into two groups to measure the amounts of SNS consumption and production activities:

SNS consumption frequency = Sum of frequency of (c) Read news posted on the site, + (m) Find potential romantic partners or people you might like to date, + (n) Read comments or posts by celebrities, politicians or athletes, + (r) Play game, + (s) Find some useful shopping information, such as coupon or deal information.

SNS production frequency = Sum of frequency of (a) Post news content from other news media, + (b) Link to other media sites, (d) Post pictures taken by myself or people I know, + (e) Post Pictures from other sites, + (f) Post videos made by myself or people I know, + (g) Post Videos from other sites, + (o) Post comments to, or share something a

friend has posted, + (q) Tag people in posts, photos or videos, (t) Post product review/comments.

Table 1
20 items for the answer of the question: "How frequent do you do anything below on your social network sites?"

Number	Answer
a	Post news content from other news media
b	Link to other media sites
c	Read news posted on the site
d	Post pictures taken by myself or people I know
e	Post Pictures from other sites
f	Post videos made by myself or people I know
g	Post Videos from other sites
h	Stay in touch with family members, including all communications with them on SNS
i	Stay in touch with close friends, including all communications with them on SNS
j	Connect with old friends that you lost touch with
k	Make new friends
l	Connect with other people who share your hobbies or interests
m	Find potential romantic partners or people you might like to date
n	Read comments or posts by celebrities, politicians or athletes
o	Post comments to, or share something a friend has posted
p	Send instant messages to or chat with a friend through the social networking site
q	Tag people in posts, photos or videos
r	Play game
s	Find some useful shopping information, such as coupon or deal information
t	Post product review/comments

In addition, we computed a total SNS activity frequency to explore the association between time budget and total SNS activities.

Total SNS activity frequency = Sum of all 20 items listed for the question "how frequent do you do anything below on your social network sites?" This variable included the SNS consumption frequency, the SNS production frequency, and other SNS activity frequency.

For the social-demographic characteristics, age, gender, income, education and employment are the five variables included in this study. Respondents' ages were collected with an open-ended response question in which respondents wrote out their age. The gender variable was measured on a nominal scale (male = 1, female = 0) in which respondents could check the option that best applies. Household income was measured with the respondent's selection of one of five different income levels, from under $30,000 to over $150,000 annually. The education level of each respondent was broken down into six different levels from Grade 8 or less to having attained a graduate degree. Employment is

measured by recoding the occupation variable to a binary variable of employed or unemployed: employment = 0 represents unemployed or retired status; employment = 1 represents any kind of employed occupations. This variable is based on a respondent's stated occupation.

Correlation and regression analyses were conducted to analyze the data to answer the research questions. The statistical software SPSS 20 was used to perform these statistical tests.

RESULTS

The Description of the Demographics, Time Budget and SNS activities

The range of age of the resident respondents was 20-89. The average age was 54.87 (SD = 15.98). 46.46% of these respondents were males, and 53.54% of them were females. 52.2% of them were employed, and 47.8% of them were unemployed or retired. 30.5% of them had the household income under $30,000; 27.4% of them had the household income between $30,001-$60,000; 19% of them had the household income between $60,001-$90,000; 18.6% of them had household income between $90,001-$150,000; and 4.4% of them had the household income over $150,000. 2.7% of them had the education level of Grades 9-11; 21.2% of them had the education level of high School graduate or equivalent; 35.8% of them had the education level of 1 to 3 years of college or technical school; 19% of them had the education level of college graduation (4 years); 21.2% of them had attended or completed graduate school. 16.4% of them were single. 17.3% of them were divorced or separated. 58% of them were married or co-habituated with a partner. And 8.4% of them were widowed.

For the student sample, the range of age was 16-38. The average age was 19.60 (SD = 2.23). 43.91% of them were males, and 56.09% of them were females. 59.6% of them had the household income under $30,000; 11.9% of them had the household income between $30,001-$60,000; 15% of them had the household income between $60,001-$90,000; 9.4% of them had household income between $90,001-$150,000; and 4.1% of them had the household income over $150,000. 95.9% of them were single, and 4.1% of them were married of co-habituated with a partner.

Table 2
Descriptive statistics of the time budget pattern and SNS activities

		Working time (hour/day)	History of SNS use (years)	Number of friends /followers	SNS consumption frequency	SNS production frequency	Total SNS activity frequency
Resident sample	Mean	5.24	1.88	142	4.19	6.34	18.06
	SD	4.51	2.08	209	3.40	5.34	12.46
	N	253	218	151	151	150	150
Student sample	Mean	6.79	4.71	238	5.69	12.24	31.85
	SD	3.40	2.13	309	3.70	6.44	15.35
	N	394	375	364	364	364	364

*Statistically significant difference at $p < 0.01$.

As shown in Table 2, the resident respondents had an average of 5.24 hours of working time with a more diverse time budget (SD = 4.51). The low average working time is because 47.8% of them were unemployed or retired. If including employed people only, their average working time is 7.54 hours per day. The students had an average of 6.79 hours of work/study time in a typical day and a more homogeneous time budget (SD=3.4) In terms of the history of SNS use, the residents had an average 1.88 years of SNS use experience, which is much lower than 4.71 years of the students. And the residents had 142 friends/followers on average, which is much lower than 238 friends/followers of the students. For the amount of SNS activities, as expected, the residents had lower SNS consumption frequency (mean = 4.19) than that of the students (mean = 5.69), lower SNS production frequency (mean = 6.34) than that of the students (mean = 12.24), and lower total SNS activity frequency (mean = 18.06) than that of the students (mean = 31.85).

The Correlations among the Frequencies of Various SNS Activities

For both samples, three kinds of SNS activities were significantly correlated with each other. Specifically, SNS consumption frequency was significantly and positively correlated to SNS production frequency. The relationship was particularly strong for the student sample (for resident sample: r = .58, p < .01; for student sample: r = .76, p < .01). SNS consumption frequency was significantly and positively correlated to total SNS activity frequency (for resident sample: r = .81, p < .01; for student sample: r = .88, p <

.01). And SNS production frequency was even more highly significantly and positively correlated to total SNS activity frequency (for resident sample: r = .89, p <. 01; for student sample: r = .94, p < .01).

The Associations between Working time and the Frequencies of Various SNS Activities

Table 3 (see Appendix) reported the multiple regression results for the prediction of three kinds of SNS activities with the working time as the primary predictor. After controlling for the demographic and socio-economic variables, working time was a significant and positive predictor for SNS production frequency (beta = .30, t = 3.01, p < .01) for the resident sample, while it also was a significant and positive predictor for SNS production frequency (beta = .34, t = 5.44, p < .001) for the student sample. Figure 1 was created that helped compare the results for the two different samples. This figure showed the associations between working time, socioeconomic variables and SNS production frequency. Only variables with significant associations for the resident sample were specified in this figure.

Table 3 also showed working time was not a significant predictor for total SNS activity frequency for the resident sample, while it was a significant predictor for total SNS activity frequency (beta = .23, t = 3.53, p < .001) for the student sample. No significant association was found between working time and SNS consumption frequency for both the resident sample and student sample.

Along with the positive association between working time and SNS production frequency, a positive correlation was also found between working time and income level (r = .27, p < .001) for the resident sample. These positive relationships suggest people with longer work time tend to be more successful in generating higher income, which partially might be the benefit of SNS production activity.
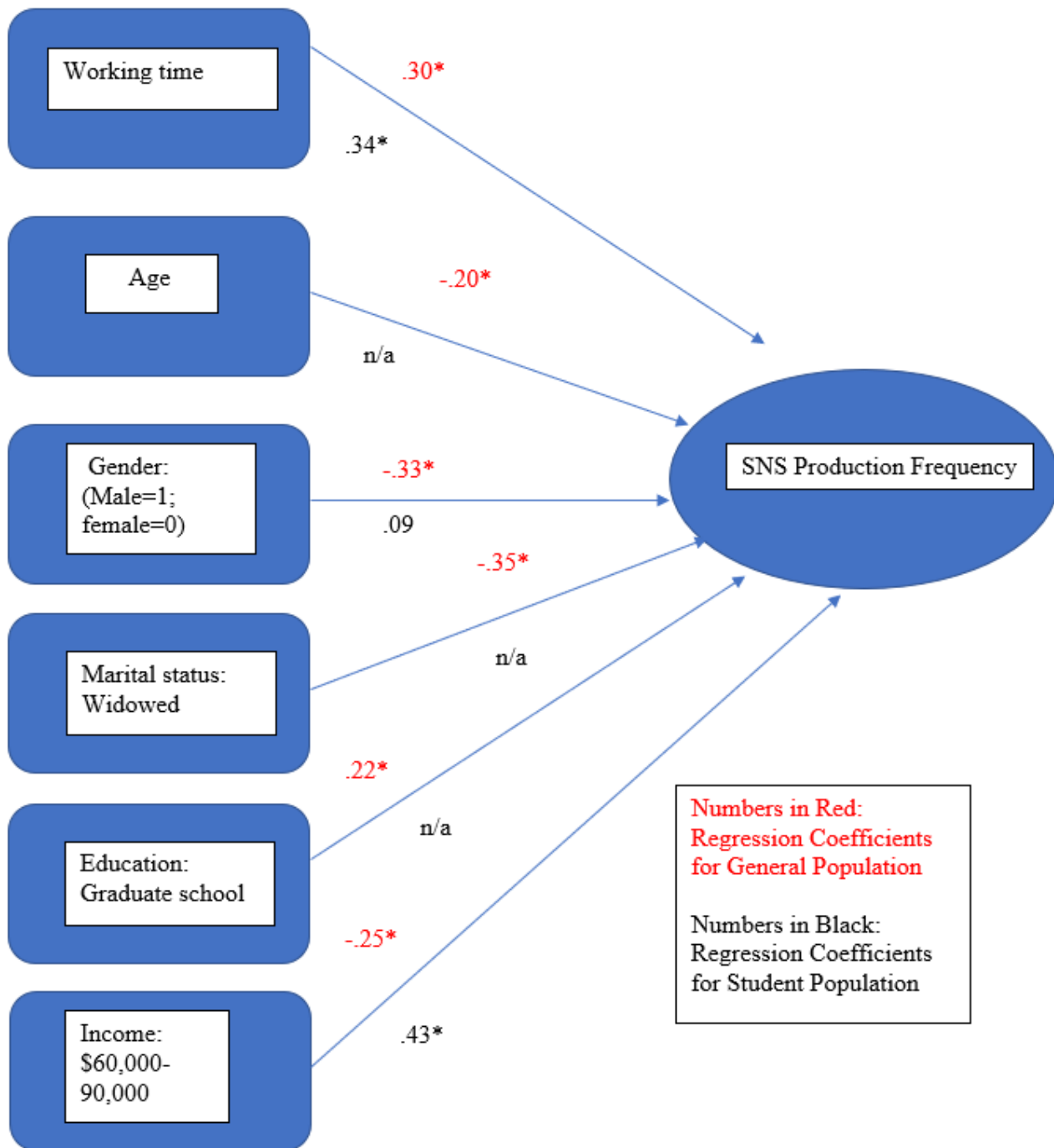
Figure 1. Time Budget and Predictors of Production Activities on SNS

DISCUSSION

As Ritzer & Jurgenson (2010) argued, SNSs are one of the places where content prosumption takes place. Although consumption and production are increasingly fused on SNSs, people may vary in terms of the amount of SNS consumption and production, as well as total SNS activities. To explore these variations, this study categorized SNS activities into SNS consumption activities, SNS production activities, and total SNS activities, and examined the relationships among them. More importantly, it examined the relationship between time budget and the frequencies of three kinds of SNS activities. As expected, the residents, most of whom did not grow up with the Internet, had less SNS use experience, less friends/followers, and less SNS consumption, SNS production and total SNS activities than students. This finding echoed the finding of many other social media use studies that age had a significant and negative association with SNS use time (e.g., Stefanone et al. 2010; Pew Research Center, 2015b).

The significant correlation between SNS consumption frequency and SNS production frequency suggested a more-more pattern: the more a user consumes SNS content, the more content he/she will contribute to the content of SNSs, and vice versa. This finding supported the proposition that SNS activities are prosumption activities that integrate consumption and production. The current practice of social media in encouraging more consumption with update reminders can effectively encourage more content production by the users.

More importantly, this study found that time budget, measured by working time, was a significant positive predictor for SNS production activities after controlling for demographic and socio-economic variables. This result suggested that besides the demographic and socio-economic factors investigated in most previous studies (e.g., Lancaster, Hughes, & Spicer, 2012; Lin, Le, Khalil, & Cheng, 2012; Stefanone et al. 2010), time budget is another factor that needs to be taken into account for studying the frequency of SNS production activities.

The significant association between working time and SNS production frequency in both resident sample and student sample contradicted the hunch that people with more disposable time would produce more SNS content than people with more working time. After all, producing content takes time, and time is a more limited resource for the people

with tight time budget than for the people with loose time budget. The rational choice theory, the time budget theory, as well as the U&G theory would work jointly to interpret this surprising finding.

The rational choice theory (in economics) posits that an individual pursues the maximum utility by choosing the best choice among alternatives (Blume & Easley, 2008). The time budget theory holds that an individual allocates time budget in the same manner as he/she does with income budget (Converse, 1968; Jackel & Wollscheid, 2007). These two theories are inherently jointed in the argument that an individual makes a rational decision to allocate his/her limited time among different activities in order to maximize his/her utilities. The U&G theory posits that one of the core functions of SNSs is building relationships and social identities. From an economic perspective, the relationships and identities people build on SNSs are the utilities obtained from SNSs.

Although both employed and unemployed people build relationships and identities on SNSs, the utilities they obtained are different. For the employed people, the persons with whom they build relationships with would most likely be colleagues, peers, customers, and stakeholders, who would have impacts on their professional careers. The social identities they build are most likely professional that are also crucial for their successes. For the unemployed people, the persons with whom they build relationships with would be much different from those of employed people. These persons are most likely their family members, relatives, and personal friends. And their social identities on SNSs are less likely professional. Therefore, the utilities the employed people get from SNSs are basically professional successes, while the utilities the unemployed people get from SNSs are basically personal/family connections.

From the economic perspective, the utilities the employed people get from SNSs are related to their income as professional successes are always connected with promotion and increase of income. The utilities the unemployed people get from SNSs are not directly associated with income. If these two kinds of utilities are comparable, according to the propositions of the rational choice theory and time budget theory, the associations between working time and SNS production frequency indicated the utilities related to professional successes and money are larger than the utilities related to personal/family connections, so that employed people make rational choice to produce more SNS content than

unemployed people. They also suggested that the utilities related to money is a stronger driver for SNS production than the utilities not related to money.

As more production means more active on SNSs, the findings of this study also suggested that people with tight time budgets are more active than people with loose time budgets. In other words, busy people are more active SNS users, while non-busy people are more passive SNS users.

The profile of SNS activities showed that students use more SNSs than residents. Previous studies in U&G tradition demonstrated that SNSs help young people or students negotiate with problems arising from their daily lives, and develop and maintain their social/cultural identities (Dunne, et al., 2010; Lee et al., 2012). From an economic perspective, these advantages are the utilities students obtain from SNSs. As argued above, people make rational choice in time allocation to maximize their utilities, and the utilities related to professional successes and money are larger than the utilities related to personal/family connections. In the college environment, the first type of utilities should be utilities related to academic and future professional successes. Self-driven students should have more study/working time and tighter time budget than other students because they always have stronger desires to be successful and work harder than other non-driven students. The positive association between students' working time and SNS production frequency suggested the utilities related to academic and future professional successes are larger than the utilities related to personal/family connections of these two kinds of utilities are comparable, so that self-driven students produce more content on SNS than non-driven students. This argument was also supported by previous studies demonstrating a positive association between students' active SNS usage and academic performance that SNSs are beneficial to the highly self-efficacious students (e.g., Junco, Heiberger, & Loken, 2011; Rinaldo & Tapp, 2011; Tiernan, 2014).

Wajcman (2008; 2014) argued that ICTs accelerate time pressure/scarcity by extending working time to leisure time and intensifying leisure. The significant association between working time and SNS production frequency for both the resident sample and student sample provided support for this argument. Although people with tight time budgets feel more time pressure/scarcity than people with loose time budgets, they are still engaged in producing more SNS content. Many of them would use leisure

time to do this as the mobile media, such as smartphones, make SNS content production possible at any time and in any place. This production activity intensifies their leisure time.

The results also showed the difference between the resident sample and student sample. There is no significant association between working time and total SNS activity frequency for the resident sample, while a significant association was found for the student sample. This suggested that time budget is not a significant variable that influences residents' total SNS activities, while it is a significant variable that influences students' total SNS activities. Since the resident sample of this study consisted of people with different socioeconomic status, e.g., employed or unemployed/retired, higher education level or low education level, married or single, the variations of their time budgets were much larger than those of the full-time students who were the respondents of the student sample. Therefore, these results indicated that time budget has more influence on the frequency of total SNS activities for the group of people with more similar time budgets than it does for the group of people with more diverse time budgets. Previous studies explored the prosumption, i.e., the integration of consumption and production, on SNSs (e.g., Beer & Burrows, 2010; Comer, 2011; Denegri-Knott & Zwick, 2012; Ha & Yun, 2014 Ritzer & Jurgenson, 2010), but did not explore the variations in the SNS consumption and production among different groups of people. This study filled this lacuna by examining the relationships between time budget and the frequencies of various SNS activities. As the first study in this direction, it contained several limitations. The research questions were induced from the perspectives of prosumption and time budget. Although U&G was used in the interpretation of the results, it was not integrated in the theoretical framework. As discussed, people's motivations and their gratifications of SNS usage may mediate or moderate the relationships between time budget and various SNS activities. Future research should integrate prosumption, time budget, and U&G to develop a comprehensive framework for exploring people's various SNS activities.

Moreover, although we separate SNS activities as production, consumption activities, the lines between them are increasing blurred because some activities have both production and consumption functions such as tagging people in posts in which people take the effort to label each person while also involves the process of recognizing each

person and consuming the picture again. In addition, there are several limitations in the data collection and analysis. The sample is limited to Northwest Ohio and results cannot be generalized to other populations. This study relied on self-reported data on time budget and the frequency of SNS activities, which may over-estimate or under-estimate the actual frequency. Mail surveys also tend to have lower participation from male, younger and lower educated respondents (Dillman, Smyth, & Christian, 2014). Moreover, as social media continue to evolve with more functions and features, the items used to measure consumption and production will need to be updated in future research.

In closing, this study proposed a prosumption-time budget perspective to investigate the relationships between time budget and various SNS activities. Time budget becomes a significant constraint for people's SNS activities due to time scarcity and the increasingly amount of time spent on SNSs. The finding that people with tight time budget actually are active producers of content in social media, although contradicted our intuition, revealed a new pattern that has not been investigated before. SNS use especially the production activity are more than a leisure activity. SNSs carry important social relationship implications for students and people with full-time employment as they are the active prosumers using SNSs to build and maintain their social networks. It also indicated that time budget is a new perspective that helps us understand people's SNS usage behaviors in which SNSs are seen as having a high utility value and a valuable investment of time for busy people who are more likely to be active prosumers and cannot afford much time for face-to-face interaction as people with loose time budget.

Apart from the scholarly contribution to time budget and prosumption research, this study's findings on busy people doing more production on SNSs have important implications to employers, SNS managers and educators. To employers, encouraging employees to share their personal life experiences by posting on SNSs among the co-workers can enhance relationships among the employees. SNSs can be beneficial to employees who work long hours or travel on business trips to maintain a healthy social relationship with their friends and families.

Based on this study, SNS managers should know that many of its most active SNS users are busy people and should make it as easy and time-saving as possible to facilitate them to upload and compile materials. Indeed, Facebook has created a lot of default

memory pages for the users on the pictures they post in past years and about a user's friend's pictures in their news feeds so that busy users can just post with a simple click instead of compiling the information themselves.

Educators and teachers should also promote the healthy use of SNS in maintaining relationships with friends in daily lives and families rather than simply dismissing SNS use as a waste of time. They may even encourage their students to post something they learned in class or their school experience to increase their sense of belonging. After all, time is precious. but when it is used well, it is good time budgeting.

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Funding and Acknowledgements

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APPENDIX

Table 3
Regression Estimations of SNS consumption frequency, SNS production frequency, and total SNS activity frequency
(Working time is the primary independent variable)

Variable	Resident sample						Student sample					
	SNS consumption frequency		SNS production frequency		Total SNS activity frequency		SNS consumption frequency		SNS production frequency		Total SNS activity frequency	
Working time	.11	(1.26)	.30**	(3.01)	.03	(.33)	.09	(1.77)	.34***	(5.44)	.23***	(3.53)
Age	-.26***	(-4.35)	-.20*	(-2.59)	-.20**	(-2.62)						
Gender (male=1)	-.42***	(-5.49)	-.33***	(-3.09)	-.44***	(-6.03)	.29***	(5.63)	.09	(1.55)	.15*	(2.38)
Employment	.01	(.01)	-.11	(-1.10)	.16	(1.76)						
Income												
<30000 (reference group)												
30001-60000	-.10	(-1.35)	.21	(1.80)	-.04	(-.50)	-.02	(-.29)	-.01	(-.10)	-.12*	(-2.32)
60001-90000	-.17	(-1.31)	-.25*	(-2.21)	-.30***	(-3.59)	.05	(.90)	.43***	(5.56)	.14**	(2.81)
90001-150000	-.14*	(-2.40)	-.06	(-.71)	-.28**	(-2.91)	.04	(.79)	.02	(.59)	.16**	(2.95)
>150000	.02	(.28)	-.04	(-.58)	-.21*	(-2.14)	.03	(.59)	-.04	(-1.04)	-.03	(-.58)
Marital status												
Single (reference group)												
divorced/separated	.20	(1.80)	-.01	(-.13)	.04	(.48)						
married/partner	-.07	(-.63)	-.09	(-.83)	-.11	(-1.24)	.02	(.39)	.01	(.21)	-.01	(-.09)
Widowed	-.29***	(-3.44)	-.35**	(-3.24)	-.23**	(-3.32)						
Education												
grade 8 or less (reference group)												
grade 9-11	-.04	(-.77)	-.05	(-.85)	-.07	(-1.27)						
high school	.18*	(2.35)	.13	(1.56)	.24**	(3.18)						
1-3 college												
College	-.01	(-.25)	-.10	(-1.42)	.03	(.43)						
graduate school	.02	(.27)	-.22**	(-3.10)	-.15*	(-2.09)						
Observations	148		149		148		363		363		363	
Adjusted R square	.70		.50		.53		.09		.04		.09	

Note. Weighted least squares regressions (WLS) method was used since the homoscedasticity assumption is not satisfied for all regression models. The weight used in the regressions was $1/|e_i|$. The standardized coefficients were reported and the data in the parentheses are the t-test values for the coefficients. Dummy variables indicating missing observations for the control variables are not shown. The variation of the number of observations is due to the data availability. * $p<.05$, ** $p<.01$, ***$p<.001$.