The Perceived Impact of Social Network Sites on Knowledge Worker Productivity and Concentration

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Abstract

The increasing use of social network sites (SNSs) in the workplace has led to concerns over how SNSs affect worker productivity. This project examined the perceived impact personal SNS use has on productivity and ability to concentrate among knowledge workers in the medical profession.

A questionnaire measuring participants’ perception of SNS use affecting their productivity and concentration was completed by 117 employees of two hospitals. Seventy percent reported that they access SNS while at work. Nearly 40 percent of those reported accessing SNSs multiple times per day. All respondent groups reported improved focus and concentration after a break, but when accessing a SNS while on break respondents reported less improvement in concentration than when they spent their break doing something other than visiting a SNS. The high frequency of SNS use at work and the suggestion that the positive effects of work breaks may be reduced by SNS use emphasize the importance of further study of SNS use in the workplace.
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Chapter 1
Introduction

Social network sites (SNSs) have become ubiquitous in many societies. As of 2012 there are over 170 million unique SNS users in the United States alone (Nielsen Company, 2012) and SNS users are spending more and more of their time on social network sites. According to a report by Nielsen Company, from July 2011 to July 2012, Americans spent 121.1 billion minutes visiting social media websites, a 24 percent increase from the previous year. Of the 121 billion minutes spent visiting social media websites, social network sites account for the most visited sites out of all the social media categories. With the help of Internet-enabled mobile devices, users are able to access their SNS from almost anywhere at anytime. Personal computer users spend 20 percent of their computer time on a SNS, while mobile device users spend 30 percent of their device time on a SNS (Nielsen Company, 2012). With the ease of access and the ubiquitous nature of SNSs there has come a concern about how SNSs are being used in the workplace and their impact on productivity.

With the concern of how SNSs are affecting productivity there has emerged polarized viewpoints about the effect SNSs have on worker productivity. Some argue that SNSs are a distraction, a time waster, and a drain on worker productivity (Conner, 2012; Lafferty, 2012; North, 2010; Wilson, 2009), while others say they can increase productivity by increasing collaboration, giving the mind a needed break, and restoring mental concentration after experiencing mental fatigue (Coker, 2011; Ferreira & Plessis, 2009). The issue of SNS use in the workplace has even led to the term “social notworking” being used when referring to SNSs in the workplace (Nucleus, 2009).
The concern over the impact of the use of SNSs in the workplace on worker productivity is not just about one person not doing their job, but rather the overall impact the use of SNSs in the workplace have on the collective output of an organization or even the impact on an entire country’s economy. Spira and Feintuch (2005) estimated that the U.S. economy loses 588 billion dollars a year because of distractions that include SNSs.

Given the divided viewpoints on SNSs’ impact on productivity and the potentially great economic damage SNSs can supposedly cause there is a need to examine this issue more closely. Therefore, the proposed study:

• Examines the extent to which workers in a particular organization use SNSs for personal reasons while at work;
• Examines the perceived impact personal SNS use at work has on productivity from the workers’ perspective;
• Examines how workers spend their break time and how their break activity affects their perceived ability to concentrate on work tasks;
• Examines how visiting a public SNS for personal reasons at work affects workers’ perceived ability to concentrate on work tasks after visiting the SNS.
Chapter 2

Literature Review

This chapter presents a critical review of the literature on the uses of social network sites by employees during work hours and its impact on worker productivity. It will begin by providing a definition and a brief history of SNSs. The most commonly cited uses of SNSs will be reviewed along with how they are used specifically in the workplace. Company policies addressing SNS use will also be discussed. How productivity is defined within the various studies will be examined before reviewing the two competing arguments surrounding SNSs’ impact on productivity: (1) that SNS use decreases worker productivity, and (2) that SNS use increases productivity. The chapter will conclude with an examination of the reviewed studies’ limitations and a brief summary of what has been discussed.

The benefits of SNSs in maintaining social relationships has been well documented (Ellison, Steinfield, & Lampe, 2007), but their effect in the workplace is still disputed. The mainstream media has also joined the debate with a plethora of mainstream media reports describing the negative effects of SNS use by employees. It is estimated that six out of 10 workers access their SNS while on company time (Nucleus Research, 2009), and in the U.S. alone more than 12 billion collective minutes are spent browsing SNSs every day (Ryan, 2012). It is also estimated that each social media user costs their company nearly $4,500 a year (Shore, 2012). These statistics present an image of widespread SNS use at work that is also costly.

This literature review sets out to take a closer look at and critically analyze what past research has uncovered about the impact SNS use in the workplace has on worker productivity and how workers are using SNSs in the workplace.
Social Network Sites Defined

The definition of a social network site may vary slightly within the literature, but SNSs generally include three key characteristics that help define and distinguish them from other websites. boyd and Ellison (2008) define social network sites as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (p. 211). boyd and Ellison also make a distinction between the term social “network” site and social “networking” site, both of which have commonly been used interchangeably. boyd and Ellison use social “network” site, and not social “networking” site, “for two reasons: emphasis and scope. ‘Networking’ emphasizes relationship initiation, often between strangers. While networking is possible on these sites, it is not the primary practice on many of them, nor is it what differentiates them from other forms of computer-mediated communication (CMC)” (p. 211).

Aside from the name variations for SNSs, there is an additional distinction that can be made between social network sites. There are the ones about to be described, public SNSs, and then there are company-specific SNSs found on a company’s intranet. This study is primarily interested in how public SNSs are used within the workplace. Company intranet SNSs are designed for the specific purpose of increasing efficiency and productivity among workers (DiMicco et al., 2008; Rooksby et al., 2009), while public SNSs offer additional features that may impact worker productivity differently and are also more widely used and accessible.

Because some companies use public SNSs as a marketing tool or for some other business related reason, the present study, in order to avoid any confusion about how the SNS is being
used, categorizes public SNS use in the workplace as either personal use or professional use. The present study is primarily interested in how workers use public SNSs for personal use and not professional or work-related tasks. The term “personal SNS” is used throughout this paper to describe using public SNSs for personal reasons.

**History of Social Network Sites**

There have been many websites that had one or two of the three features that distinguish a SNS from other types of websites in the years prior to the first official SNS, but it was not until 1997, with the introduction of SixDegrees.com, that all three features were found on one website (boyd & Ellison, 2008). Dating sites had been offering the ability to create profiles, the first characteristic of a SNS, while chat websites like ICQ and AIM offered the ability to have friends lists, the second characteristic. Other specific websites, like Classmates.com, allowed users to associate with an organization, like a high school or college, and navigate through the network of people who also were associated with that organization, the third characteristic of a SNS. SixDegrees.com brought all of these features together and the first SNS was created (boyd & Ellison, 2008).

From 1997 to 2003, there was a slow and steady emergence of other SNSs, but it was not until 2003 that their popularity really took off (boyd & Ellison, 2008). The rise of SNSs can be marked by specific SNSs that were able to achieve a high level of popularity over the last 15 years. These standouts include SixDegrees.com, Friendster.com, Myspace.com, Facebook.com, and Twitter.com, but Myspace and Facebook have stood out and have widely been used as references when discussing SNSs (boyd & Ellison, 2008).
Myspace. Myspace.com began in 2003 as a way to compete with Friendster and other popular SNSs (boyd & Ellison, 2008). In 2004, Myspace started getting new users, specifically teenagers, in large numbers and also started getting widespread media attention. With the massive influx of new users and the added media coverage, News Corps decided to purchase Myspace in 2005 for 580 million dollars (Stelter, 2011). Just five years later, however, News Corps sold Myspace for just 35 million dollars due to its decreased popularity and inability to keep up with Facebook.

Facebook. Facebook.com began in 2004 in the dorm room of Mark Zuckerberg, a Harvard University student. At first, Facebook required users to have a Harvard College email address but later expanded to other colleges, high schools, certain business employees, and then in 2006, it was opened to the general public (boyd & Ellison, 2008). Facebook quickly gained popularity among the masses and in just eight years grew to one billion users as of September 2012 (Facebook, 2012), making it the world’s largest social network site (Fowler, 2012). Facebook was also the most searched term and most visited website in 2011, accounting for over 10 percent of all U.S. web traffic between January 2011 and November 2011 (“Facebook was the top search term for third straight year,” 2011). Given these statistics, the popularity and prevalence of SNSs is undeniable.

Uses of SNSs

It is important to identify what the common uses of SNSs are among its general users so that when examining SNS use in the workplace any differences can be identified.

As mentioned previously, uses of social network sites can be categorized into two areas, personal use and professional use (Warnakula & Manickam, 2010). Personal use can include
staying in contact with close friends and family, uploading personal photos, or playing games. Professional or business uses can include using the SNS to stay in contact with a business client, creating viral marketing programs, or looking for job openings or job applicants (Warnakula & Manickam, 2010).

Studies have found that social network sites are most commonly used as a way to maintain social relationships (boyd & Ellison, 2008; Ellison, Steinfield, & Lampe, 2007; Warnakula & Manickam, 2010). Nearly two thirds of social media users give the reason of staying connected to family or close friends as their main motivation for adopting SNSs (Smith, 2011). Smith found that half of social media users also cite reconnecting with old friends who they have lost contact with as a main motive for using SNSs. boyd and Ellison (2008) came to the conclusion that SNSs are mostly used to connect to people an individual knows in the offline world and not for creating new connections online.

With the boom in SNS popularity, hundreds of SNSs have formed since 1997 and their target audience and reason for use vary tremendously. While one SNS may be designed to help maintain social relationships (e.g., Facebook), others may be intended to build and maintain professional relationships (e.g., LinkedIn) (Rooksby et al., 2009). Given the differences in SNSs, the specific SNS that is being accessed by workers may have implications on the reasons for using it, which means depending on the SNS being accessed the effects on a worker’s productivity may vary.

**SNSs in the Workplace**

Accessing SNSs while at work is widespread with Facebook commonly being the most accessed SNS (Ferreira & Plessis, 2009; North, 2010; Warnakula & Manickam, 2010). Because
of the different requirements of each study for the sample of people used as part of the data collection it is difficult to estimate how many workers from the general working population actually access SNSs at work, but a report by Nucleus Research (2009) claims that 61 percent of workers in the U.S. access a SNS while at work. The amount of time spent on the SNS while at work varied among the studies reviewed, ranging from 15 minutes to over one hour per employee per day (Ferreira & Plessis, 2009; North, 2010; Nucleus, 2009; Warnakula & Manickam, 2010).

Even though SNSs can be used for many different reasons and in several different ways, workers use SNSs in ways similar to the general public. The most common use of SNSs, even during work hours, was for personal reasons, not business-related, and included things like socializing with friends, reading and responding to messages, visiting friends’ or fan page profiles, viewing and uploading images and videos, commenting on those images and videos and even playing games (Ferreira & Plessis, 2009; North, 2010; Warnakula & Manickam, 2010).

Ferreira and Plessis (2009), who surveyed 89 workers using a combination of one-on-one interviews and a questionnaire, found that the discussion of work-related issues with coworkers was the least selected option when being asked about SNS use while at work. North (2010), who utilized a short online survey that was by invitation only to 126 undergraduate and graduate students from multiple institutions, resulting in 59 responses, found that only 13 percent of respondents said they had ever used an SNS to complete a work-related assignment.

Warnakula and Manickam (2010) examined how workers use SNSs for personal and professional reasons while in the workplace with the help of an online questionnaire completed by 74 employees from different companies in Sri Lanka. They found that 98 percent of
respondents cited stress reduction as their reason for accessing a SNS while at work. Nearly 45 percent of respondents also claimed that entertainment was the sole reason for accessing an SNS.

Warnakula and Manickam (2010) found that the top three answers regarding professional-related uses of public SNSs by study participants included connecting with peers and colleagues in their current workplace, connecting with peers and colleagues from previous employment, and connecting with professionals from outside organizations. Asking questions about things related to work and getting an answer accounted for only 19 percent of the responses.

The uses and gratification theory may explain this behavior among workers. The uses and gratification theory has been used to help understand why individuals actively look for specific information and content for gratification (see Shao, 2009). People have a desire to socialize and stay connected with their friends and family and studies on SNS use have shown that this is one of the leading reasons why people use SNSs (boyd & Ellison, 2008; Steinfield, Ellison, & Lampe, 2008). Applying the uses and gratification approach to examining SNS use it can be said that people use SNSs to fulfill their need to socialize and they continue to use SNSs because of that desire and because SNSs make it easy to fulfill the need to socialize and receive gratification from it.

Given the widespread use and the considerable amount of time workers spend on SNSs, and their SNS use being personal and not job-related, it would not be unexpected for companies to have policies addressing SNS use in the workplace.

**Workplace policies.** Company policies on accessibility and use of SNSs while at work by employees vary widely. Some companies ban any access to SNSs by workers, while other
companies allow open access without restriction (Warnakula & Manickam, 2010). A telephone survey of companies with 100 or more employees conducted by IT staffing firm Robert Half Technology found that, of the 1,400 companies questioned, 54 percent banned SNS access completely and only 10 percent of the companies allowed complete unrestricted access to SNSs for employees (Schiller, 2009).

Even with policies in place explicitly banning SNS use in the workplace it is still common for employees to access SNSs at work. More than half of the one billion Facebook users now use their smart phone or other mobile device to access their SNS (Facebook, 2012), which means they are not necessarily reliant on a company’s Internet or computer to access the site. This also means that it would be easy to circumvent a company’s policy on SNS access and use. Some study participants acknowledged that their company did not allow SNS use while at work but they accessed the site anyway (North, 2010; Skeels & Grudin, 2009; Warnakula & Manickam, 2010; "Why & how your employees are wasting time at work," n.d.).

The findings from these studies show that accessing social network sites at work is common, regardless of a company’s policies, and that they are predominantly being used for entertainment or socializing purposes by employees while at work, which raises the question of whether this is a good or bad thing for productivity.

**SNSs and Worker Productivity**

As previously mentioned, there are basically two competing arguments regarding SNSs in the workplace and how they may impact productivity. Quality versus quantity of work is the most simplistic way of describing the two sides of the argument. One side argues that SNSs take up employees’ time, time that should be spent working (quantity of work). This side of the
argument basically sees SNSs as a distraction and causes a decrease in worker productivity by reducing the amount of time employees spend working (Conner, 2012; Lafferty, 2012; North, 2010; Wilson, 2009).

The other side of the argument points out that SNSs used for business and professional purposes provide workers with a way to increase collaboration between coworkers and clients and is useful for knowledge sharing (quality of work), which would increase worker productivity (Ferreira & Plessis, 2009; Moqbel, 2012). Along the same lines of quality over quantity of work is the argument that short breaks spent on SNSs can increase workers’ concentration and make them more productive after their break compared to those who do not take short breaks online (Aguenza & Som, 2012; Coker, 2011).

How productivity is defined within each study can influence the study’s findings and how they are interpreted. Considering the obvious disagreement about how SNSs impact productivity, it is necessary to examine the differences in job types, which will influence how productivity is defined.

**Job type and productivity.** Different jobs may require a different definition and measurements of productivity. So before “productivity” is defined, it is important to distinguish between the different types of jobs and the types of workers needed to perform those jobs. In jobs that require a certain level of knowledge and mental concentration in order to complete job tasks, personal use of SNSs may affect worker productivity differently than jobs where the work is purely physical in nature.

The differences in job type and the type of work required to do the job can be grouped into one of two categories: manual work or knowledge work (Drucker, 1999). Nickols (2000)
distinguishes between the two: “A major difference between knowledge work and manual work is that knowledge work is information-based and manual work is materials-based” (p. 4).

Unsurprisingly, knowledge work requires a certain kind of worker, knowledge workers. Thomas and Baron (1994) define knowledge workers as “professionals who use information as their main input and whose major products are distillations of that information” (p. 5).

Distinguishing between the type of job performed is important. According to Ramirez and Nembhard (2004), knowledge workers account for 60 to 75 percent of the workforce in industrialized countries.

One large industry in particular comes to mind when discussing a knowledge worker workforce: the health care industry. The United States’ health care industry is one of the largest industries in the U.S., with employment in healthcare occupations projected to increase by 29 percent from 2010 to 2020 ("Labor force projections overview," 2012). Within the health care industry there are several occupations that would be considered knowledge work and would thus require a knowledge worker, including medical doctors, registered nurses, physician assistants, and nurse technicians. The high number of knowledge work occupations in the health care industry, which includes more than 40 unique health care careers according to the U.S. Bureau of Labor Statistics’ website ("Healthcare occupations," 2012), along with their high degree of variation in types of careers (e.g., a brain surgeon compared to a nurse technician), makes the health care industry a good industry to examine when studying knowledge workers within the U.S.

Productivity defined. The previous section has shown that there are clear differences in the kind of worker needed depending on the type of job. These differences also mean that how
productivity is defined will depend on the type of job. Drucker (1999) makes a distinction between manual worker productivity and knowledge worker productivity. One of the six major factors that Drucker argues determines knowledge worker productivity is that “productivity of the knowledge worker is not - at least not primarily - a matter of the quantity of output. Quality is at least as important” (p. 84).

Coker (2011) also sees the importance of quality of work and not just quantity of work when defining productivity. He defines worker productivity as “the degree to which an individual performs in the workplace with respect to attendance, quality of work, performance capacity and person factors” (p. 239).

Agreeing on all the important variables affecting worker productivity does not come without challenges, especially when dealing with knowledge worker productivity. Nickols (2000) points out this difficulty: “because knowledge work consists of converting information from one form to another, the results of a knowledge work process are intangible” (pp. 4-5). Nickols goes on to say that “there is an appalling lack of language, let alone tools and techniques for coping with knowledge work and knowledge workers” (p. 9).

What is surprising is that much of the literature reviewed that uses the concept of productivity fails to define what they mean by it. Productivity is an abstract concept and it can have different meanings for different people and jobs. It would seem necessary to adequately define this concept before analyzing how SNSs affect it, but in much of the literature reviewed this is not the case and a definition is often overlooked. It is possible that the authors intentionally left a definition out so that their participants could internally define productivity
and come to their own conclusions on whether SNSs had positive or negative effects on their productivity.

There is no universally accepted definition of productivity, but, when dealing with knowledge work, quality of work is emphasized more so than quantity of work. How productivity is measured can make all the difference in a study examining how SNSs are perceived to affect worker productivity.

**SNS’ Effect on Productivity**

**Negative effects.** A study conducted in 2009 by Nucleus Research that interviewed 237 workers found that 77 percent of them had Facebook accounts and two thirds of those workers accessed their Facebook account while at work (Nucleus, 2009). Eighty seven percent of those who accessed their SNS account while at work said there was no work-related reason to be on the site, and the average amount of time spent on the site was 15 minutes, resulting in a 1.47 percent decrease in productivity across the worker population. It was unclear how the study came to the conclusion that there was a 1.47 percent decrease in productivity.

Another study, conducted by the Associated Chambers of Commerce and Industry of India, also found that surfing the Internet and the time spent on SNSs cost the company close to one week in lost productivity every year (Rai, 2010). In yet another study, when asked about the biggest problem with SNS use, nearly half (47%) of participants claimed it was a time waster and addictive (North, 2010). The last example demonstrates that even users of SNSs see the potential negative affects of SNSs and its ability to be a time waster.

What these findings have in common is that they were all looking at time spent working as the main measurement of productivity. Although the amount of time spent on the SNS can be
an important factor affecting workers’ productivity, it should not be the sole measurement used. If the amount of time spent doing one’s job is the sole measure of productivity then any non-working activity, like saying “hello” to a coworker or even utilizing bathroom breaks, would result in a decrease in worker productivity. It is also possible that SNS use may be replacing other “nonproductive” activities, such as chatting in a break room, which means SNS use may not actually be adding to the overall unproductiveness of workers. Additionally, if SNS use is replacing other “nonproductive” activities it might have a positive impact on employee satisfaction and morale and could have a long-term positive impact on the employer.

**CMC.** A social network site is a form of computer mediated communication (CMC), and considering that none of the previously mentioned studies that focused on SNSs also looked at knowledge workers, it may be pertinent to discuss some findings from studies analyzing CMC’s impact specifically on knowledge worker productivity. CMC is a far more encompassing subject compared to SNS use, but the findings from the studies looking at how it impacts knowledge workers may give additional insight into how these forms of communication and technology are affecting worker productivity.

A study by Spira and Feintuch (2005) found that:

Modern technology has increased the variety of ways and the ease by which a knowledge worker can interrupt, or be interrupted. A typical knowledge worker now has an instant messaging client, an e-mail client, a mobile phone, a desk phone, stock quotes, news feeds, and a Web browser – all competing for his attention. These electronic interrupters ensure that a worker is inundated with a constant stream of information as well as a barrage of less useful attention-grabbers (p. 8).
Spira and Feintuch found that “Since technologies like the computer and the mobile phone make personal and business information available side-by-side, the line between when each is appropriate is blurred in the minds of many knowledge workers” (p. 12). This can result in a situation where “it is typical for workers to read their personal e-mail, make personal phone calls, and even surf the Web recreationally from their offices” (p. 12). These distractions can add up quickly, as Spira and Feintuch point out that “2.1 hours of productivity are lost per knowledge worker per day to unimportant interruptions and distractions and recovery time from interruptions” (p. 10). The Spira and Feintuch study, compared to previously mentioned studies, makes SNS use seem like just a fraction of a much larger distraction problem facing knowledge workers.

**Positive effects.** The ability to always be connected to the Internet through the use of a smart phone, company computer, or some other Internet-enabled device means individuals can access their entire online social network of friends, colleagues and acquaintances at any moment. This high level of connection provides an opportunity to increase collaboration and seek out and also share knowledge among workers (AT&T, 2008; Ferreira & Plessis, 2009; Moqbel, 2012). Many of the studies that examined the use of SNSs as a way to increase productivity through knowledge sharing and collaboration were more interested in how a company’s internal intranet SNS can increase productivity, but some also touched upon public SNS use as well.

**Knowledge sharing and collaboration.** A 2,500 person study conducted by AT&T on their workers spanning five countries found that SNS use increased worker efficiency by as much as 46 percent (AT&T, 2008), with 65 percent of participants claiming SNS use increased their efficiency or a coworker’s efficiency. Increased knowledge sharing and ability to
collaborate were two of the top cited benefits of using SNSs in the workplace. However, public SNSs, like Facebook and LinkedIn, accounted for only 15 percent of the SNS tools used by employees in this study. The focus was almost entirely on the company’s intranet SNS. Nonetheless, this study shows that not all SNS use leads to decreased productivity among workers.

**Restoring mental concentration.** Aside from the ability to increase collaboration or share knowledge, SNS use may have other benefits that may translate into increased worker productivity. A study conducted by the University of Melbourne found that individuals who utilized short breaks surfing the web or watching videos, like on YouTube (a popular video sharing SNS), showed an increase in productivity (Coker, 2011). Coker used an online survey for data collection, and participants were randomly selected from a commercial database of market research panelists. From the 2,700 office workers selected, 268 surveys were completed with almost three quarters (74%) of responses coming from women. Participants were asked about their online surfing habits while at work and frequency and length of time spent surfing online were recorded. Because the survey was conducted online, depending on how a respondent answered a question they would then be directed to additional relevant questions, instead of how an offline and static questionnaire, which is typically identical to everyone else’s, works. Coker referred to this process as “question piping” (p. 243). Work productivity was measured on a 25-item scale, called the Endicott Work Productivity Scale, which was designed to measure attitudes and behaviors that affect work performance.

Coker (2011) found that workplace Internet leisure browsing (WILB) resulted in an increase in worker productivity after the break compared to those who did not use WILB
throughout the day. According to Coker, these short breaks spent online allow an individual’s mind to rest itself, leading to a higher total net concentration for a day's work, and as a result, increased worker productivity. As long as the worker does not spend more than 12 percent of their time on these breaks they will have increased productivity compared to their counterparts who do not take these breaks. Coker found that those who take short and unobtrusive breaks online scored nine percent higher in their productivity measurement compared to those who did not take breaks online. Although SNSs were not specifically being investigated, the study still showed how short breaks used to access the Internet, and websites like SNSs, can have positive effects on a worker’s concentration and level of productivity. The study also points out that moderation is the key to these results and that too much time spent online, like from those who suffer from Internet addiction, will have the opposite affect (Coker, 2011).

Coker (2011) cites Deci and Ryan’s (2004) self-determination theory as the theoretical background for his research. Self-determination theory “proposes that a degree of autonomy in the workplace should have a positive effect on worker motivation, suggesting attempts at restricting or monitoring Internet access may have a deleterious effect on work motivation” (Coker, 2011, p. 239). Coker suggests that having the freedom to spend time browsing online at work fosters a sense of autonomy, which, according to the self-determination theory, may have positive effects on worker performance.

A follow-up study conducted by Coker (2011) looked specifically at Facebook’s effect on concentration levels. Coker subjected four groups of people to 40 minutes of a dull, repetitive task on a computer with a short break every 10 minutes. One group was not given a break, the second group was told to keep staring at their computer screen but do nothing, the third group
was told to visit an online insurance website and compare plans, and the fourth group was told to
login to their Facebook account and do whatever they do on the site. The participants’ reaction
time, which is closely linked to concentration levels, was measured after each break. Every
group, except the Facebook group, showed an increase in reaction time, which means the non
Facebook groups got progressively slower (worse) as the test proceeded. The Facebook group
was the only group that improved their reaction time over the course of the 40-minute test.

The point of the study was to demonstrate that not all breaks are equal, and what an
individual does with their break time can affect their ability to concentrate after the break. Coker
(2011) argued that Facebook will restore concentration levels quicker than non network-related
breaks. According to Coker, it is the social nature of SNSs that has this positive effect on
concentration levels. Coker concludes that blocking SNS access at work can actually have
detrimental effects on worker productivity. Other studies have also pointed out that study
participants have suggested that occasional short breaks throughout the day can help them
increase productivity ("Why & how your employees are wasting time at work," n.d.).

Limitations of the Studies Reviewed

Sampling issues. Although each study had different methods for how the study was
conducted and what questions were asked there were still limitations and shortcomings seen
throughout the studies. Past findings on the amount of workers who access SNSs during work
hours and the time spent on the sites may be misleading. Some of the studies required
participants to have an SNS profile in order to participate in the study, while other studies
included only samples of the working population who admitted to using SNSs at work. This
means that some of the findings may not accurately reflect the attitudes and behaviors of the
entire working population. A disproportionate amount of the studies also had a sample age group ranging from their early twenties to their mid thirties. Older workers were underrepresented in most of the studies. This may be attributed to the possibility that older workers are less likely to use SNSs, especially in a work environment ("Why & how your employees are wasting time at work," n.d.), and were thus excluded from the studies.

A survey of 3,200 workers found that those who had a higher level of education were more likely to spend more time on SNSs during work hours compared to their less-educated counterparts ("Why & how your employees are wasting time at work," n.d.). Ferreira and Plessis’ (2009) study, which found high levels of SNS use in the workplace for personal reasons, used a South African university for their sample of participants, which means there is the potential for overrepresented SNS use in the results given the implications from the findings from the 3,200 person study just mentioned. North (2010), who also used graduate and undergraduate students from multiple higher education institutions when attaining his sample of participants, might have faced similar issues.

Younger workers are more likely to spend more time online at work compared to their older counterparts ("Why & how your employees are wasting time at work," n.d.) and, as mentioned above, many of the studies included a disproportionate number of younger workers. Combine this with the higher educational achievements of many of the participants and it is possible that the results could be even more biased toward heavy SNS use compared to the general working population. With many of the studies coming to similar findings, collectively, they may inaccurately paint SNSs in the workplace as more positive or negative influences than they really are.
**Research instrument issues.** Because of the nature of the studies and the difficulty and cost of employing direct observation as a form of data collection, questionnaires and interviews were used to collect data. There are a few limitations when using self-report as the sole source of data. Honesty from participants is a factor; the more sensitive the questions, the more likely participants are not going to answer truthfully (Boster & Sherry, 2010), and when being questioned about how productive a participant is there may be an increase in the likelihood a participant may lie so as to represent themselves as more productive than they actually are. Motives behind why respondents answered questionnaires a certain way could also be an issue. An example would be if respondents claim on a questionnaire that SNSs are a valuable way to increase productivity through collaboration or mental breaks because they may think if they answer in that way their company may allow them to access the site more.

For the studies that relied specifically on self-report for their data, the discussion of SNSs’ effect on productivity (see Ferreira & Plessis, 2009; Warnakula & Manickam, 2010) made for an interesting, and somewhat contradictory, analysis. Although the results from these studies found that the majority of users use SNSs for personal reasons, like chatting with friends or reading messages, the same participants also claimed that SNSs could have positive effects on productivity through increased collaboration. This attitude toward SNSs and their believed ability to increase productivity does not reflect how SNSs are actually being used, however. Most studies are showing that people do not use SNSs as a way to collaborate or share company knowledge, but instead they use SNSs as a way to socialize with friends or family and not discuss work-related things (Ferreira & Plessis, 2009; North, 2010; Warnakula & Manickam, 2010). This shows the disconnect between an individual’s perception and reality.
One study in particular had some rather obvious issues related to the design of the study. An issue with the Coker (2011) experiment that looked at the relationship between different break formats and their impact on concentration levels was the obvious dichotomy in the types of break each group participated in. The types of breaks were so different that it is not especially surprising that the Facebook group was more mentally rested after the break compared to the other dull break types. It is unlikely that individuals would actually use their break time to sit and stare at their computer screen or compare insurance rates online, so this experiment is not really grounded in reality. A future study that compares break types that are more similar (e.g., visiting Wikipedia, visiting an online gaming site, socializing with co-workers, visiting a different SNS, etc.) may result in more generalizable findings.

**Other potential factors.** An issue with the findings from some of the studies that found SNSs decreased productivity is that they did not account for how employees spent their time before SNSs became popular. It is possible that these workers would have spent time doing other non work-related things even if SNSs were not available. Basically, it may be the worker who is unproductive and the SNS is just a tool used to facilitate that unproductiveness and not the cause of the unproductiveness.

Without knowing what these workers were doing with their time before SNSs became so popular, it is hard to come to a concrete conclusion and say that it is the SNSs that are actually causing the decrease in productivity. It is possible that workers will generally find ways to not work and SNSs have given people a new distraction.
Summary

Accessing SNSs while at work is widespread and how each worker uses the SNS varies, but the literature reviewed indicates that although SNS use is common at work, workers tend to visit their respective SNS for personal reasons and not work or professional reasons. The dominant use by workers is for socializing with friends or family, while work-related reasons were oftentimes completely absent from an individual’s motive for accessing the SNS or was an uncommonly cited reason for accessing the SNS.

Regardless of how respondents claim to use SNSs, some studies found that SNSs have the potential to increase productivity through increased collaboration, knowledge sharing, and increasing concentration levels (Coker, 2011; Ferreira & Plessis, 2009). Other studies also found that SNSs have the potential to decrease productivity by time wasted visiting the sites by workers (North, 2010; Nucleus, 2009; Rai, 2010).

The past research findings from the literature show that the multiple benefits of SNSs can be equally matched by their negative consequences, and without further research on the relationship between SNS use at work and worker productivity it is not possible to conclude SNSs directly lead to an increase or decrease in worker productivity. More emphasis on the type of job being performed (e.g., knowledge work versus manual work) would greatly add to the existing literature on the relationship between personal SNS use in the workplace and its impact on worker productivity.
Chapter 3
Research Questions and Definitions

The numerous studies that have examined SNS use in the workplace and its effect on worker productivity have provided an abundance of knowledge on this topic. Even with the several studies addressing the relationship between SNS use and worker productivity there are still questions that could be asked and more that can be learned. This chapter presents two research questions, preceded by the rationale for each question, that address an area of SNS use at work and its affect on productivity that has not been the focus of previous studies. The two research questions were used as the foundation for the study that will be discussed in the following chapters. Along with the two research questions, this chapter also provides both conceptual and operational definitions for the key concepts that appear in the research questions.

Research Questions

Coker (2011) argued that the social aspect of Facebook made it a better tool for increasing concentration compared to non-networked forms of breaks. Coker’s study compared Facebook use to visiting an insurance website and sitting and staring at a computer screen while doing nothing else, but these were break activities workers would be unlikely to participate in normally. Given this caution, the study did still show a connection between SNS use and increased ability to concentrate after a break. Because Coker’s study did not examine how workers are likely to actually spend their break time there is room for further research examining how SNS use affects mental concentration in an actual work environment.
The first research question addresses the relationship between SNS use in the workplace and mental concentration:

**RQ1: To what extent do knowledge workers perceive personal SNS use at work to affect their ability to concentrate on work tasks?**

Throughout the literature reviewed there was disagreement among study participants about SNSs’ impact on worker productivity (Ferreira & Plessis, 2009; North, 2010). Because different types of jobs were included in the studies without a clear designation for the job type (manual work or knowledge work) and because different jobs require different skills and vary in task requirements, a distinction about the job type is important.

Measuring knowledge workers’ productivity can be difficult due to the lack of an agreed upon definition of knowledge worker productivity and because of the intangible nature of knowledge workers’ work processes (Nickols, 2000). However, measuring knowledge workers’ *perception* of their productivity is a more manageable task.

The next research question addresses the relationship between personal SNS use at work and its affect on productivity from the perspective of knowledge workers:

**RQ2: To what extent do knowledge workers perceive personal SNS use at work to affect their productivity?**

Now that the research questions have been presented, it is important to define the research questions’ key concepts, both conceptually and operationally.
Definitions

**Personal SNS use at work (SNS use):**

*Conceptual definition:* Personal SNS use at work has two parts. First, personal SNS use at work refers to a respondent visiting any publicly available social network site (e.g., Facebook, Twitter) and not a company’s intranet SNS during work hours. Second, personal SNS use at work has to do with using the SNS for personal reasons and not for work-related tasks. Although not an exhaustive list, personal SNS uses include: writing/reading comments, viewing/uploading photos, using the chat feature of the SNS to talk to friends or family, playing games, viewing family/friends’ profiles, as well as simply logging into a personal social network website to check to see if there are any new notifications or new postings.

*Operational definition:* To measure this concept respondents were asked whether or not they use public SNSs for personal reasons at work, the amount of time spent on the public SNS at work for personal reasons, what method they use to access the SNS at work, and what they typically do while on the SNS at work (Appendix B, Questions 1-8).

**Perception of personal SNS use affecting ability to concentrate on work tasks:**

*Conceptual definition:* This concept refers to how knowledge workers think using a personal SNS while at work affects their ability to concentrate on work tasks. More specifically, this concept examines how knowledge workers think using a personal SNS while taking a work break affects their ability to concentrate on their work tasks after returning from their break.

After returning from a break, a worker must focus their attention back on their job tasks and, as shown by the Coker (2011) study, different break activities can have different effects on a worker’s ability to concentrate. This concept examines whether workers feel personal SNS use
has an effect, and if so, whether it is positive or negative, on their ability to concentrate on their work after having spent their break visiting a personal SNS.

**Operational definition:** A worker’s ability to concentrate on a work task is not directly observable, so in order to examine the perceived affect personal SNS use has on a worker’s ability to concentrate on work tasks respondents were asked to quantify their perceived ability to concentrate on their work tasks using a 10-point scale, ranging from “1 - No Focus” to “10 - Complete Focus.” Respondents were asked to quantify what their perceived level of concentration was before going on a break and after returning from the break. This gave a baseline measure of a worker’s perceived ability to concentrate. Respondents were then asked two post-break questions about their ability to concentrate: (1) after spending their break time visiting a personal SNS; and (2) after spending their break doing something other than visiting a SNS. This allowed for any differences to be noted between personal SNS use and other break activities and their perceived affect on ability to concentrate. Additionally, respondents were asked about how they felt different types of breaks affected their ability to concentrate, measured on a Likert-type scale ranging from “1 - Strongly Disagree” to “5 - Strongly Agree” (Appendix B, Questions 13-17).

**Perception of personal SNS use at work affecting productivity:**

**Conceptual definition:** This concept refers to how a worker perceives visiting a public SNS while at work for personal reasons effects their own productivity. Because it is possible some workers may think that personal SNS use at work can increase their own productivity but may feel it decreases the productivity of others, or vice-versa, this concept addresses only how the individual worker perceives personal SNS use at work to affect their own productivity and not
the productivity of others. Also, worker productivity is a complicated concept to define, and it is likely that individual workers each have a different perception of what being productive is while at work. In this study, productivity is explicitly defined as the individual employee’s personal judgment of his or her productivity in their specific job. In order to capture respondents’ views of how personal SNS use at work may affect productivity the worker’s perception of personal SNS use affecting their own productivity was examined.

**Operational definition:** Individual worker’s perception of how visiting personal SNSs at work affects their own productivity was measured by asking questions that centered around the respondent’s views of whether visiting a personal SNS at gets in the way of work tasks, has an affect on their performance, helps or harms their productivity, etc. The questions were measured on a Likert-type scale ranging from “1 - Strongly Disagree” to “5 - Strongly Agree.” The first six questions were adapted from a questionnaire used to examine employee perceptions concerning the relationship between exercise and work productivity (see Wattles & Harris, 2003) (Appendix B, Questions 18-28).
Chapter 4

Methodology

This chapter describes the study’s sample and the methods used for data collection. This chapter also discusses the sampling procedure, the survey instrument (questionnaire), and administration of the instrument.

Sample

The units of observation and the units of analysis are one and the same and consisted of currently employed health care professionals in two hospitals found in separate cities whose work can be categorized as knowledge work. There is not a single universally accepted definition of knowledge work, but the term “knowledge work” refers to work tasks that requires complex knowledge in order to complete specified tasks. Knowledge workers are “professionals who use information as their main input and whose major products are distillations of that information” (Thomas & Baron, 1994, p. 5).

For this study, the knowledge worker occupations consisted of registered nurses, nurse technicians, certified nurse assistants (CNA), medical doctors, and physician assistants. Four departments from Butterworth Hospital, along with three departments within Saint John’s Medical Center made up the study’s sample.

Butterworth Hospital. Butterworth Hospital, a regional medical center, located in Grand Rapids, Michigan, had four departments, the cardiothoracic critical care unit, the medical intensive care unit, the surgical intensive care unit, and the neural intensive care unit, included in the study.
All of the departments at Butterworth Hospital were similar to one another in regards to the knowledge workers employed within each department. All four departments had 11 to 14 registered nurses and two to three nurse technicians who worked only in their respective department. The cardiothoracic critical care unit and the medical intensive care unit shared two physician assistants, one critical care doctor, and two resident doctors. The surgical ICU and the neural ICU shared between them two physician assistants, one critical care doctor, two resident doctors, and two surgical resident doctors.

**Saint John’s Medical Center.** Saint John’s Medical Center, located in Jackson, Wyoming, is a small community hospital. To put the size of the two hospitals in perspective, Butterworth Hospital typically delivers 7,000 babies a year while St. John’s delivers just over 400 a year.

Three departments, the medical surgical unit, labor delivery postpartum recovery unit (LDRP), and the intensive care unit, participated in the study. Like Butterworth Hospital, each department primarily consisted of registered nurses, although each department at St. John’s was staffed with fewer nurses. Each department had anywhere from two to nine registered nurses working, depending on the day and shift. Between one and three certified nurse assistants worked in the three departments and five medical doctors staffed the three departments, with both the medical surgical unit and the intensive care unit being managed by two doctors, while one doctor was assigned to the LDRP unit.

**Sampling Procedure**

Neither hospital nor the departments within the hospitals were chosen at random. Both participating hospitals were chosen because a family member or friend worked in the hospital...
and assisted in getting departmental approval for this study. Also, only hospital departments that were comprised of only knowledge workers were selected to avoid issues related to determining respondents’ eligibility. Finally, because both organizations’ departments selected had been determined to consist of only knowledge workers, all employees within the specific departments were included in the sample.

In order to increase the sample size while also ensuring that all participants were knowledge workers, multiple work shifts from both hospitals were included in the study. Two night shifts from Butterworth Hospital and multiple day and night shifts from St. John’s Medical Center were included when distributing the questionnaire.

The nature of both hospitals’ employee work schedules meant different work shifts would include different workers, however, the possibility that some of the workers would be working during the multiple shifts surveyed for the study needed to be accounted for. To avoid double counting workers from previously selected shifts, the lead nurse made a point of asking if any of the workers had worked during one of the previously surveyed work shifts and did not include those individuals in the sample count for that shift. This procedure was used to determine an accurate count of unique workers from both hospitals.

The Survey Instrument

The study utilized a printed, self-administered questionnaire consisting of 32 questions (See Appendix B for the complete questionnaire). The reason for using a printed version and not an online version was due to the busy nature of the workers from the hospital organizations and their limited access to a computer while at work. Also, a printed version was used in the hospitals
in hopes of eliciting a greater response rate than if an email with a questionnaire link was used as the means of distribution.

All questions consisted of multiple-choice options with several question options using a five-point Likert-type scale ranging from “1 - Strongly Disagree” to “5 - Strongly Agree.” The entire questionnaire consisted of five parts: (1) characteristics of respondents’ personal SNS use at work; (2) respondents’ break habits and their ability to concentrate on work tasks, both prior to and after a work break; (3) respondents’ perception of how visiting a personal SNS use at work affects their ability to concentrate on work tasks; (4) respondents’ perception of personal SNS use at work affecting their work productivity; and (5) basic demographic information.

The first part of the questionnaire included eight multiple-choice questions. The questions asked about basic SNS use at work, including which SNSs the respondent uses, how they access the site(s), the amount of time spent on the site(s), and what activities the respondent engages in while on the site(s). The first two questions were used to screen for participants who use SNSs while at work. If a respondent claimed they never accessed a SNS at work (Q2) they were told they did not need to complete the remainder of the survey.

The second part asked respondents about break habits, including the frequency of breaks, the typical length of their break, the purpose of the break, and the top three things the respondent does while on break.

The third part of the questionnaire included questions used to examine how well respondents felt they could concentrate on their work tasks, both prior to taking a break and immediately after returning from a break. Respondents were asked to quantify their ability to concentrate on their work tasks prior to taking a break and after returning from a break using a
10-point scale ranging from “1 - No Focus” to “10 - Complete Focus.” These two questions were used as a baseline measurement of respondents’ perceived concentration. Using the same 10-point scale, respondents were then asked two post-break questions about their ability to concentrate: (1) after spending their break time visiting a personal SNS; and (2) after spending their break doing something other than visiting a SNS. This allowed for any differences to be noted between personal SNS use and other break activities and their perceived affect on ability to concentrate. The last question of part three addressed the participants’ perception about whether the type of break has an affect on their ability to concentrate. The question, question 17, was measured on a five-point Likert-type scale ranging from “1 - Strongly Disagree” to “5 - Strongly Agree.”

The fourth part of the questionnaire assessed the respondents’ perception of personal SNS use at work affecting their productivity. Questions 18 through 23 were adapted from a preexisting questionnaire used by Wattles and Harris (2003) in a study examining workers’ perception of the relationship between exercise and work productivity. All questions were measured on a five-point Likert-type scale ranging from “1 - Strongly Disagree” to “5 - Strongly Agree” and centered around questions that examined how the respondent perceives personal SNS use at work to affect their own productivity, not productivity in general or others’ productivity.

The final section of the questionnaire addressed respondents’ age, sex, profession, and education. Respondents’ highest level of completed education was asked to avoid any ambiguity in how to answer. Respondents were also asked to select their profession from an inclusive list that contained the most common professions within the departments.
The questionnaire was pretested on 10 health care workers who were currently employed in the same or a similar profession as the sample. The purpose of the pretest was to assist in exposing any question ambiguity respondents may have encountered and to identify any other flaws in the questionnaire. The pretest also helped establish an estimated amount of time it took to complete the questionnaire, which was incorporated into the finalized consent form.

**Administration of the Questionnaire**

The questionnaire, along with the consent form, was distributed by the lead nurse, who was either a family member or friend of the researcher. At each hospital, surveys were distributed to the selected departments at the beginning of the work shift. The nurse informed staff that participation in the questionnaire was anonymous, voluntary, and no personally identifiable information connecting respondents to the questionnaire would be collected. Participants were asked to fill out and return the questionnaire by the time their shift ended, giving them 12 hours to complete the questionnaire. A designated questionnaire drop box area was set up to ensure all questionnaire responses remained anonymous and to avoid any potential awkwardness or perceived coercion that may have been associated with someone asking each individual worker for their completed questionnaire.

The total number of workers who were working during the shift being surveyed was noted by the lead nurse and the total number of completed questionnaires in the drop box at the end of the shift was also noted. This information was used to determine the response rate.

The same questionnaire distribution process was used at both hospitals and for all shifts except for a slight distribution modification at St. John’s, described below. Any workers who were included in previously approached shifts were not given a new questionnaire and the
number of workers who were in previous shifts was noted by the lead nurse to ensure an accurate final sample number could be calculated.

A refinement in the questionnaire distribution process at St. John’s Medical Center was necessary because the departments were so small that including just a few shifts would have resulted in a rather low number of unique workers. So to elicit as many unique workers as possible from the departments, the lead nurse who was in charge of distributing the questionnaires spent a week visiting the hospital during the start of each shift, both day and night, and as the week progressed she only handed out the questionnaire to those who had not worked during a previous shift in the week. This distribution process was only possible because the hospital was so small that the lead nurse knew all the workers in the included departments by name and was able to remember if any of the workers had already received a questionnaire.
Chapter 5

Results

This chapter discusses the findings from the data collected to include the response rate, characteristics of respondents who use SNSs at work, and an analysis of how respondents answered the questions from the questionnaire.

Response Rate

Overall, 144 questionnaires were distributed throughout both hospitals and 117 were returned, eliciting a cumulative response rate of 81 percent. Of those responses, 82 (70%) were from persons who do access SNSs at work.

Butterworth Hospital accounted for the majority of responses, which was expected due to the large size of the departments. The total number of unique knowledge workers over the course of the two night shifts surveyed was 109, of which 95 (87% of all eligible employees) accepted the questionnaire at the start of their shift. Eighty-two questionnaires were returned, resulting in a response rate of 86 percent (82 out of 95) from Butterworth Hospital. Of the 82 questionnaires returned, 21 indicated that the employee never accessed SNSs at work, leaving 61 useable surveys for data analysis.

St. John’s Medical Center had 59 unique workers working during the week the questionnaire was distributed. Forty-nine workers took the questionnaire with them at the start of their shift and 35 questionnaires were returned, resulting in a response rate of 71 percent. Of the 35 questionnaires returned, 14 indicated that the employee never accessed SNSs while at work, leaving 21 useable questionnaires for data analysis. Table 1, below, provides the response rate by organization.
Table 1. Questionnaire response rates by organization

<table>
<thead>
<tr>
<th>Site</th>
<th>Unique Employees</th>
<th>Accepted Questionnaire</th>
<th>Returned Questionnaire</th>
<th>Use SNS at Work</th>
<th>Do Not Use SNS at Work</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butterworth Hospital</td>
<td>109</td>
<td>95</td>
<td>82</td>
<td>61</td>
<td>21</td>
<td>86%</td>
</tr>
<tr>
<td>St. John’s Med Center</td>
<td>59</td>
<td>49</td>
<td>35</td>
<td>21</td>
<td>14</td>
<td>71%</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>144</td>
<td>117</td>
<td>82</td>
<td>35</td>
<td>81%</td>
</tr>
</tbody>
</table>

Characteristics of SNS Users at Work

The majority of SNS respondents were young, female registered nurses with bachelor’s degrees. Nearly 82 percent of respondents were females, and 66 percent of all respondents were between the ages of 18 and 34. Registered nurse was the most common profession among participants, accounting for 68 percent of responses, while more than half (57%) of respondents had a bachelor’s degree. A more detailed discussion of the respondents’ age, sex, profession, and education is discussed below.

Age. Overall, more than half (54%) of the respondents were between the age of 25 and 34, and 66 percent were 34 years old or younger. Only 14 percent of respondents were 45 years old or older, showing that the vast majority of respondents were on the younger side of the age distribution. Figure 1, below, provides the distribution of respondents’ ages.
Figure 1. Respondents’ age

**Butterworth.** The majority of respondents from Butterworth Hospital, 62 percent, identified themselves as being between 25 to 34 years old. Overall, 75 percent of all respondents from Butterworth Hospital were between the ages of 18 and 34. Only eight percent of respondents from Butterworth Hospital were 45 years old or older, with just one respondent claiming to be in the 55 to 65 years old category.

**St. John’s.** Respondents from St. John’s were more evenly divided among the different age groups compared to those from Butterworth Hospital, and they were also a slightly older group. While 62 percent of respondents from Butterworth Hospital were between the ages of 25 and 34, only 28 percent from St. John’s fell within this age group. The majority of respondents from St. John’s were equally divided between three age groups: 25 to 34, 35 to 44, and 45 to 54. Each of these age groups made up 28 percent of the respondents from St. John’s. Ten percent were between the ages of 18 and 24 and just one respondent was between the age of 55 and 65.
Sex. There was a disproportionately high number of female participants from both hospitals, with 75 percent of the completed questionnaires from Butterworth Hospital coming from females and 100 percent of responses from St. John’s Medical Center coming from females. This may be partly due to the high number of females in the nursing profession, which was the most common profession among respondents, as discussed below. Overall, 82 percent of respondents were female, and males accounted for 18 percent of participants (see Figure 2, below).

![Figure 2. Respondents’ sex](image)

**Figure 2. Respondents’ sex**

**Profession.** Participants’ profession, much like the findings for participants’ age and sex, was largely concentrated in just one area, with 68 percent of respondents working as a registered nurse. Nurse technician, which accounted for 12 percent of responses, was the second largest profession of participants, followed by medical doctors (10%), other (7%), and physician
assistants (2%). Figure 3, below, shows the overall distribution of professions of respondents, while Figure 4, below, provides the distribution of professions by hospital.

**Figure 3. Respondents’ profession**

![Graph showing the distribution of professions of respondents.]

**Butterworth.** Of the respondents from Butterworth Hospital, 61 percent were registered nurses, followed by 15 percent claiming to be nurse technicians. Medical doctors accounted for
13 percent of participants from Butterworth, while eight percent (n=5) marked “other” on the profession question, with none of them noting what that profession was. Physician assistant trailed at a mere three percent of responses, which was not surprising due to the low number of physician assistants working in each department at Butterworth Hospital.

**St. John’s.** There was little diversity in respondents’ profession at St. John’s, with only three professions completing the questionnaire: registered nurse, nurse technician, and certified nurse assistant. (The certified nurse technician accounts for the one “other” response from St. John’s). Of those three professions, 90 percent were registered nurses, and there was only one of each of the other two professions. No doctors completed the questionnaire.

**Education.** Similar to the distribution of the other demographic categories, there was an overrepresentation in just one area of educational achievement among respondents. More than half (57%) of all respondents had a bachelor’s degree. Overall, nearly 75 percent of respondents had a bachelor’s degree or higher. Figure 5, below, illustrates how the highest level of education achieved among respondents was distributed.

![Figure 5. Respondents’ education](image-url)
**Butterworth.** Nearly 75 percent of Butterworth’s respondents had a bachelor’s degree or higher. Specifically, 52 percent had a bachelor’s degree, eight percent had a master’s degree, and 13 percent had a doctoral degree. Nearly 12 percent had an associate’s degree, while eight percent claimed to have some college credit but no degree, and seven percent of respondents had trade/technical/vocational training.

**St. John’s.** Although divided differently, St. John’s also had three quarters of respondents claiming to have a bachelor’s degree or higher. Nearly 72 percent had a bachelor’s degree while only one respondent had a master’s degree, which was also the highest level of education out of all respondents from St. John’s. Nearly 20 percent had an associate’s degree. One respondent had some college credit but held no degree.

**Results**

**SNSs Used**

When asked about which SNS the respondent has checked while at work, 100 percent of the participants claimed to have checked Facebook, followed by 27 percent having checked Instagram. Rounding out the top three was Twitter, with eight percent of participants saying they checked it while at work. LinkedIn got two responses, and “other” got one response, although the SNS was not identified. None of the participants from either hospital claimed to check Myspace. Most of the respondents, 62 percent overall, claimed to only check one SNS, Facebook. That means that 38 percent of respondents check or have checked multiple SNSs while at work. It may be worth noting that although 38 percent of respondents check multiple SNSs while at work, two SNSs seems to be the limit for the vast majority considering only one respondent claimed to
check more than two SNSs while at work. That one respondent claimed to check three different SNSs while at work.

As for how respondents accessed their SNS, the most popular way was through a mobile phone, which accounted for nearly 98 percent of responses. Only three respondents claimed to use something other than their mobile phone to access their SNS. Two respondents, one from each hospital, used a tablet, while one person used their iPod. This means that 100 percent of respondents used a mobile device as their primary way of accessing their SNS, which also means none relied on a company computer.

**Top 3 SNS Uses**

Of the seven options listed in the question asking participants to rank their top three SNS activities while at work, there were some clear standouts. Forty-seven percent of respondents claimed that looking at photos was the number one activity they did while on their SNS at work, while reading comments was also a popular activity, with 46 percent of respondents ranking it as the second most common activity they did while on a SNS at work. Rounding out the top three most common SNS activities was writing comments, with 29 percent of respondents claiming it was their third choice. These statistics come with an important caveat though.

There were issues with effectively ranking the top three SNS activities done while at work from the provided data because although respondents were asked to place a “1”, “2”, or “3” next to their top choices, many of the respondents simply checked the box next to a particular activity, making it impossible to decipher the rank order of that activity. However, it is still possible to note the most commonly checked option responses. Without factoring in the rank a particular activity received but only addressing whether it was marked by participants or not, the
order of the most commonly cited activities is as follows: Read comments (76 responses); look at photos (72 responses); write comments (27 responses); play games (20 responses); other (eight responses); use chat feature (five responses); and upload photos (one response).

**SNS Frequency and Duration**

Respondents’ answers to the questions asking about their frequency of visiting a SNS and the length of time spent on the SNS shows that most of the respondents make frequent but short visits to their SNS while at work. Nearly 70 percent of respondents checked their SNS at least once a day, with 39 percent of all respondents claiming they check their SNS multiple times a day. Eighteen percent checked their SNS multiple times a week, while the remaining 12 percent checked their SNS once a week or less than once a week. Figure 6, below, provides the breakdown of respondents’ frequency of SNS use while at work in a single day.

![Figure 6. Frequency of SNS use](image)

**Figure 6. Frequency of SNS use**
Two thirds (66%) of respondents said they only spend between one and five minutes on the SNS during each visit. Cumulatively, 93 percent of respondents spend 10 minutes or less on the SNS during each visit. Only six respondents (7%) claimed to spend 11 or more minutes on a SNS per visit (see Figure 7, below).

**Figure 7. SNS duration per visit**

Considering the majority of respondents claimed they made short but frequent visits to their SNS while at work, it is not surprising to find that over the course of a work week 67 percent of respondents claimed to spend 30 minutes or less on a SNS while at work. Thirty-nine percent of respondents claimed to spend less than a total of 10 minutes on a SNS while at work during the week. Figure 8, below, illustrates how the total amount of time respondents spend on SNSs at work in a given week was distributed.
Figure 8. Cumulative SNS use at work in a work week

Break Frequency and Duration

Less than a quarter (22%) of the respondents took a break every hour or less while the majority (77%) only took a break every two hours or longer (Figure 9, below). Forty-eight percent of respondents waited three hours or longer before taking a break.

Figure 9. Break frequency
Even though the majority of respondents had several hours between each break, 66 percent of respondents claimed that their break was 10 minutes or less in duration. Twenty-eight percent claimed to take a break lasting 15 minutes or longer (Figure 10, below). These results paint a picture of respondents who take short and infrequent work breaks.

**Figure 10. Break duration**

**Reason for Break**

Most respondents took breaks for one of three reasons. Taking a mental break was cited by 40 percent of respondents as their primary reason for taking a break (see Figure 11, below). Reducing stress was a close second with 27 percent of responses, followed by eating, which accounted for 23 percent of responses. Stretching muscles, resting eyes, required by company policy, or “other” accounted for the remaining 10 percent of responses.
Figure 11. Reason for break

Break Activity

When it came to the question asking participants to rank their top three most common activities they participate in while on break, there were issues with getting actual number rankings and not just a check mark next to response options. This issue was similar to the one faced earlier when respondents were asked to rank their top three SNS activities.

Although a definitive rank order cannot be ascertained, 60 percent of respondents said that socializing with coworkers was their number one activity, followed by 33 percent of respondents claiming that visiting a SNS was their second choice of activities done while on break. The complete response breakdown is as follows: Socialize with coworkers (70 responses); visit a SNS (50 responses); use mobile device for some other reason (43 responses); play a game (20 responses); other (17 responses); talk on phone (12 responses); and surf online (11 responses). The most commonly cited “other” activity was eating, followed by sleeping, reading
activities, like read a book and take a nap, in the “other” option.

**Perceived Concentration**

The third part of the questionnaire included questions that asked participants to select a number ranging from one to 10, with one being the lowest level of concentration and 10 being the highest level of concentration that best described their perceived level of concentration in four situations centered around work breaks. For the purpose of making the results easier to understand, three concentration level ranges were designated: Responses that ranged from a 1 to a 3 were categorized as low concentration; responses ranging from 4 to 7 were categorized as moderate concentration; and responses ranging from 8 to 10 were categorized as high concentration. (These concentration ranges were designated during data analysis and participants were not presented with these concentration descriptions in the questionnaire).

Respondents’ perceived ability to concentrate following a break showed an obvious improvement compared to respondents’ perceived ability to concentrate prior to taking a break. Before taking a break, nearly half, 46 percent, of respondents claimed to have high concentration and 44 percent reported they had moderate concentration (see Figure 12, below). Only 10 percent claimed to have low concentration prior to their break. Although most participants reported a high level of concentration prior to going on break there was still a noticeable increase in the perceived concentration after a break. Nearly 80 percent of respondents reported having high concentration after a break (without the type of break being addressed in the question), a 33 percent increase compared to before the break. Only one respondent claimed to still have low concentration after the break, while the other seven respondents who claimed to have low concentration after the break.
concentration prior to taking a break claimed to have at least moderate or high concentration after the break (see Figure 13, below).

Figure 12. Concentration prior to break

There was a difference in respondents’ perceived concentration depending on whether their break was spent on a SNS or doing something else. Sixty-six percent of respondents marked an “8” or higher on perceived concentration after a break spent visiting a SNS, which was noticeably fewer than the 79 percent of respondents who marked an “8” or higher on perceived concentration after spending their break not on a SNS. This shows that many respondents felt
like a non SNS break resulted in higher perceived concentration. Figures 14 and 15, below, and Figures 27 and 28 (Appendix D), provide the full distribution of responses regarding perceived level of concentration for the four concentration questions. Further discussion of respondents’ perceived concentration is included in the discussion section found in the following chapter.

**Figure 14. Concentration after SNS break**

**Figure 15. Concentration after non SNS break**

**Break Type and Concentration**

Just over 50 percent of respondents disagreed or strongly disagreed that the type of break (e.g., socializing with coworkers, visiting a SNS, surfing online, etc.) has an affect on their ability to concentrate after the break (see Figure 16, below), while 31 percent agreed or strongly
agreed that the type of break they go on affects their ability to concentrate on work tasks afterward. Seventeen percent of respondents were neutral on the question.

**Figure 16. Break type’s effect on concentration**

**SNSs Help Me...**

Questions 18 through 23 asked participants about how personal SNS use at work affects their productivity, concentration, work relationships, enjoyment of work, and work performance.

Overall, only a minority of respondents agreed or strongly agreed that SNS use at work helps them be more productive (Q18), helps them think more clearly about work problems (Q19), or helps them better concentrate on work tasks (Q20). The greatest of these minority responses was in the question asking if SNS use helps the respondent be more productive. Only 17 percent of respondents agreed or strongly agreed that SNS use improves productivity. Figure 17, below, provides the complete distribution of responses regarding whether SNSs help respondents be more productive at work. Eleven percent agreed or strongly agreed that SNS use
at work helps them to concentrate better on their work tasks, and less than nine percent agreed or strongly agreed that SNS use at work helps them think more clearly about work problems.

Figure 17. SNSs and productivity

Almost half, 49 percent, of respondents disagreed/strongly disagreed that SNS use helps them think more clearly about work problems (see Figure 18, below). Nearly as many, 46 percent, also disagreed/strongly disagreed that SNS use at work helps them to better concentrate on work tasks (Figure 19). Forty percent also disagreed or strongly disagreed that SNS use at work helps them to be more productive.

Questions 18, 19, and 20 each received a neutral response from 43 percent of participants -- that is, they do not believe that SNS use affects productivity, concentration, or ability to think more clearly about work problems one way or the other.
Questions 21 and 22, which asked participants whether personal SNS use at work helps them to enjoy their work better (Q21) and whether personal SNS use helps them to relate better to their coworkers (Q22), showed that many respondents do think SNS use at work can have
positive effects, even if those positive effects may not relate to productivity or ability to concentrate on work tasks. Sixty-eight percent of respondents agreed or strongly agreed that SNS use at work helps them to enjoy their work better (Figure 20), while almost as many, 67 percent, also agreed or strongly agreed that SNS use helps them to relate better to their coworkers (Figure 21, below). Only six percent (n=5) and seven percent (n=6), respectively, disagreed or strongly disagreed that SNS use at work helps them to enjoy their work better or relate to their coworkers better.

Figure 20. SNS use helps enjoy work better
Figure 21. SNS use helps to better relate to co-workers

Of the five respondents who disagreed or strongly disagreed that SNS use helps them enjoy their work better, three of them only check their SNS once a day, while the remaining two check their SNS less than once a week. It does not come as a surprise that these five do not think their SNS use helps them to enjoy work better considering they do not check their SNS very often. Of the six respondents who disagreed or strongly disagreed that their SNS use helps them to relate better to coworkers, it was again the more infrequent SNS checkers who felt this way. Only one respondent who checked their SNS multiple times a day disagreed that it helped them relate better to their coworkers. Table 2 shows the relationship between frequency of SNS use and attitude toward SNSs helping the respondent be more productive. Refer to Figures 16 through 21 in Appendix D to see the full distribution of responses for questions 18 through 23.
Table 2. Crosstabulation of SNS frequency and perceived productivity

<table>
<thead>
<tr>
<th>Be more productive at work</th>
<th>Q4 Frequency New</th>
<th>Count</th>
<th>% within Q4 Frequency New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree or Strongly Disagree</td>
<td>Multiple times a day</td>
<td>16</td>
<td>50.0%</td>
</tr>
<tr>
<td>Agree or Strongly Agree</td>
<td>Once a day</td>
<td>8</td>
<td>32.0%</td>
</tr>
<tr>
<td>Neutral</td>
<td>Multiple times a week</td>
<td>3</td>
<td>40.0%</td>
</tr>
<tr>
<td></td>
<td>Once a week or less</td>
<td>3</td>
<td>30.0%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>33</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>% within Q4 Frequency New</td>
<td>40.2%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

SNS Use and Work Performance

Although the majority of respondents do not feel that SNS use at work helps them be more productive or concentrate on work tasks or work problems they also do not see SNS use at work as detrimental to their performance. Nearly four out of five (79%) of respondents disagreed/disagreed that they find themselves checking their SNS when they should be working, while 81 percent of respondents disagreed/strongly disagreed that their SNS use gets in the way of their work tasks (see Figure 22 and 23, below).

Figure 22. Checking SNS when should be working
When it came to whether SNS use at work negatively affects the respondent’s quality of work there was almost complete agreement among respondents, with 88 percent claiming that it does not negatively affect their work performance (Figure 24). Ninety-six percent of respondents disagreed or strongly disagreed that they had been told that their SNS use at work has affected their performance.

Slightly more than half, 52 percent, of respondents did not see a problem with personal SNS use at work (Figure 25), but one in five (21%) did see a problem with using a SNS while at work. The remaining 27 percent were neutral on the matter.

Figure 23. SNS use gets in the way of work tasks
Figure 24. Quality of work negatively affected by SNS use

Figure 25. Don’t see a problem with SNS use at work

Figure 26, below, provides a side-by-side comparison of the perceived level of concentration of only those who disagreed or strongly disagreed that the type of break has an affect on their ability to concentrate. If the respondents were to truly feel that the type of break does not have an affect on their ability to concentrate then there should be no difference between the two graphs, which is clearly not the case. A more thorough discussion of these results and what they mean is found in the following chapter.
Figure 26. Response inconsistencies on perceived concentration after SNS and non-SNS breaks by those who believe that type of break has no impact on concentration
Chapter 6

Discussion

This chapter begins by answering the two research questions proposed in chapter three, followed by a discussion of some interesting findings regarding response inconsistencies, and concludes with an overview of what the study found.

RQ1. To what extent do knowledge workers perceive personal SNS use at work to affect their ability to concentrate on work tasks?

When asked directly about their view on whether their personal SNS use at work helped their ability to concentrate on work tasks, 46 percent of respondents disagreed/strongly disagreed that it helped them to better concentrate on their work tasks. Only 11 percent of respondents agreed/strongly agreed that their personal SNS use at work helped them concentrate better on their work tasks, while the remaining 42 percent of respondents claimed that their SNS use neither helped nor harmed their ability to concentrate on work tasks.

Using the uses and gratification theory as a reference point, it seems plausible that those who check their SNS multiple times a day would also claim that one of the benefits, or gratifications, they receive from checking their SNS so often would be a higher level of perceived concentration after a break spent on the SNS compared to a break spent not on a SNS. It also seems logical to assume, given the likelihood that respondents may answer questions in such a way that may be interpreted as demonstrating social desirability bias, that respondents who claim to check their SNS multiple times a day would also claim to have a higher level of perceived concentration so as to justify checking their SNS multiple times a day. To see if the frequency of SNS use affected how respondents answered questions related to their perceived
concentration, respondents were placed into one of two groups based on their frequency of SNS use: those who check their SNS multiple times a day and those who check their SNS once a day or less.

When comparing the results from Tables 3 and 4 (Appendix C) it can be seen that even those who checked their SNS multiple times a day claimed to have a higher perceived level of mental concentration after a break spent *not* visiting a SNS compared to a break spent visiting a SNS. Of the 32 respondents who check their SNS multiple times a day while at work, 62 percent reported that they had high concentration (an 8 or higher on the 10 point scale) after spending their break on a SNS. This was, however, noticeably fewer than the 84 percent of the same 32 respondents who claimed to have high concentration after spending their break doing something other than visiting a SNS.

Regardless of frequency of SNS use, 66 percent of all respondents claimed to have high concentration after spending their break on a SNS, which is also well below the 79 percent who claimed to have high concentration after spending their break sans SNS. A side-by-side comparison of Figures 14 and 15 illustrates the difference in perceived concentration after a break spent on a SNS and a break spent not on a SNS.

One could infer that, on average among all respondent groups, a break leads to higher concentration levels, but that not visiting a SNS on break produces better concentration than using such sites. (These results refer to all categories of respondents, but does not imply that every single respondent has improved concentration after break).

Given these findings it can be said that only a minority of respondents feel that personal SNS use at work can help improve their ability to concentrate, while the majority do not feel that
SNS use at work improves or has an effect on their perceived concentration. Because perceived concentration is actually greater among participants when they are not accessing SNSs on a break, the data also suggest that use of SNSs may reduce, but not eliminate, the ability of breaks to improve concentration and focus of workers.

RQ2. To what extent do knowledge workers perceive personal SNS use at work to affect their productivity?

When asked directly about the impact SNS use has on the participant’s productivity (Q18), 40 percent of respondents did not perceive SNS use at work to be beneficial to their productivity, that is, they disagreed/strongly disagreed that SNS use helps them be more productive. A small minority, 17 percent, of respondents did perceive their personal SNS use at work to help them be more productive. The remaining 43 percent were neutral regarding SNS use at work and its impact on their perceived productivity.

Even the respondents who check their SNS multiple times a day did not claim that their SNS use helped them be more productive. Of the 32 respondents who claimed to check a SNS multiple times a day while at work, only four (12%) agreed or strongly agreed that SNSs help them to be more productive. Half of those who checked a SNS multiple times a day at work disagreed or strongly disagreed that SNSs help them to be more productive at work (see Table 2 in Appendix C).

Fifty six percent (n=18) of the most frequent SNS checkers did not believe that personal SNS use at work helps them to think more clearly about work problems, while only two of the 32 respondents who check a SNS multiple times a day agreed/strongly agreed that personal SNS use helps them to think more clearly about work problems.
Although the majority of respondents felt that their SNS use at work did not have a positive effect on their productivity, it was also found that their SNS use was not perceived to negatively effect job performance or get in the way of work tasks. Eighty-eight percent of participants disagreed/strongly disagreed that their quality of work is negatively impacted by their use of SNSs at work, while nearly as many (81%) also did not feel that their SNS use got in the way of their work tasks.

It is, of course, quite possible that different frequencies, durations, and sites involved may lead to differential impacts ranging from positive to negative both on worker productivity and concentration. Further research is needed to clarify methods for making SNS site access a consistently positive experience for both employee and employer.

**Response Inconsistencies**

Although certainly not the focus of the study, some of the most interesting findings, from the viewpoint of the researcher, came from the response inconsistencies of participants. There were several cases where respondents would answer a question one way but when asked a similar question later they would answer it with a response that contradicted their earlier response. It is possible that some of these inconsistencies are the result of the respondent being confused by the question or them not thoroughly reading the question. Some of the response inconsistencies could also stem from respondents exhibiting social desirability bias or they could be further evidence that self-reported measures are not entirely reliable (these limitations are discussed again in the study limitations section in the following chapter).

More than 50 percent (n=42) of all the respondents disagreed/strongly disagreed that the type of break has an affect on their ability to concentrate on their work after the break, while only
30 percent of respondents agreed/strongly agreed that the type of break does have an affect on their ability to concentrate. By disagreeing with the statement that the type of break has an affect on their ability to concentrate on work tasks it would be expected that all 42 of the respondents who felt the type of break does not have an affect on their concentration should also claim to have the same level of perceived concentration after a break spent on a SNS (Q15) and a break spent doing something else (Q16). This, however, was far from what was found.

Figure 26 provides a side-by-side comparison of the perceived level of concentration of only those who disagreed or strongly disagreed that the type of break has an affect on their ability to concentrate. If the respondents were to truly feel that the type of break does not have an affect on their ability to concentrate then there should be no difference between the two graphs. This was not the case, however.

Of the 42 participants who disagreed/strongly disagreed that the type of break has an affect on their concentration, nine of them, or just over one in five, noted a difference in their perceived level of concentration depending on whether it was a break spent on a SNS or a break spent not on a SNS. Many of these nine respondents had only a slight difference in their perceived level of concentration depending on whether it was a break spent on a SNS or a break spent not on a SNS. Many of these nine respondents had only a slight difference in their perceived level of concentration, with many of them varying by only a single interval (e.g., marking an “8” and then marking a “9” for question 15 and 16, respectively), however, two of the nine had a difference greater than one interval, with one respondent marking a “4” for their perceived level of concentration after a break spent visiting a SNS and then marking a “6” after spending their break not on a SNS, while the other marked an “8” and then a “10” for question 15 and 16, respectively. Given these differences one can assume that although these respondents
may not consciously think the type of break has an affect on their ability to concentrate, they do in fact feel that certain types of breaks will lead to a higher or lower ability to concentrate.

Another inconsistency that may also be a possible example of social desirability bias or a respondent’s disconnect from their perception and reality was found while inputting the data from the questionnaires. One participant claimed that they checked their SNS multiple times a day while at work and that they spend 15 or more minutes on the SNS during each visit, but when asked how long, cumulatively, they spend on a SNS during the week while at work they claimed to only spend between 10 and 30 minutes on the site. It doesn’t take a mathematician to realize that those numbers do not add up. One day at work with checking their SNS multiples times for 15 minutes or longer would already pass the 10 to 30 minute limit they claimed to spend on a SNS for an entire week.

While it is not possible to explain this discrepancy it does show the possibility that either respondents will not be completely truthful in their answers or are not the most credible source when it comes to certain things.

**Discussion Overview**

The results of this study found that over two thirds (70%) of employees who returned the survey said they access a social network site for personal reasons while at work. This large number of persons doing so strengthens the high level of importance of determining the impact SNS use has on worker productivity. It also points to the need in determining ways in which access to such sites can optimize, rather than hinder, worker productivity.

Although personal SNS use at work does not appear to have a positive impact on perceived concentration or productivity from the perspective of the majority of the study’s
participants, personal SNS use at work does appear to positively impact work satisfaction and how well workers relate to their coworkers. It is quite possible that the type of SNS accessed, the frequency and duration of such access, and the nature of the job of the employee all have an impact on determining whether such access has a positive, neutral or negative impact. Efforts to identify the impact of SNS access in various job categories and work environments are needed to determine the impact on performance of various levels of access to SNSs and among various types of jobs.
Chapter 7

Conclusion

This chapter provides a summary of the study’s findings, a discussion of the limitations of the study, the study’s contribution, and concludes with suggestions for future research.

Summary of Findings

More than two-thirds of participants from the included medical institutions reported accessing social network sites at work, a finding that highlights the need to study the impact of SNS use at work in greater depth and in a wide variety of settings in order to assure that such access has a positive, or at least neutral, impact on employees and on their employers.

The findings show that perceived concentration after a break was improved when respondents spent their break on a SNS and when they spent their break not using a SNS. However, more respondents reported a higher level of perceived concentration after spending their break doing something other than visiting a SNS compared to when they spent their break accessing a SNS.

Although the data has shown that personal SNS use at work does not appear to have a positive impact on perceived concentration or productivity from the perspective of the majority of the study’s participants it is also not perceived to negatively impact work performance or interfere with work tasks, even though nearly 40 percent of respondents claim to check their SNS multiple times a day while at work. Personal SNS use at work does also appear to positively impact respondents’ work satisfaction and how well they relate to their coworkers.
Study Limitations

An important aspect of every study is acknowledging the study’s limitations and the research method this study utilized had a few limitations and issues that should be addressed.

The fact that the study’s sample was obtained through a nonprobability sampling technique, purposive and convenience sampling, means there are generalizability limitations. Because organizations that only employ a certain kind of knowledge worker (e.g., nurses, doctors, physician assistants, etc.) were used for the research sample there is the issue of generalizability of the findings to other types of settings. The sample was not necessarily representative of the working population of those who can be considered knowledge workers, especially considering that not all the different types of knowledge work occupations were included in the sampling frame. In an attempt for the sample to be more representative of knowledge workers in the health care industry, multiple departments within two geographically separate hospitals consisting of a variety of professions within the organizations were selected, instead of relying on a single department or profession.

The instrument used in the study, a questionnaire, had some obvious limitations. Because almost all of the questions included in the instrument were written by the researcher and were not from preexisting questionnaires there is the issue of question validity and reliability. Because of the specific nature of the sample used (knowledge workers), the limited amount of information from previous studies in this area, and the specificity of research questions being asked, it was not possible to compile a complete questionnaire from preexisting questionnaires.

A weakness in the design of the questionnaire was discovered while processing the data from returned questionnaires. The second question of the questionnaire asked if the participant
had visited a SNS for personal reasons while at work and if the participant answered “no” they were told they did not need to fill out the rest of the questionnaire. A better designed questionnaire would have asked the participant to turn to the last section of the questionnaire so demographic information could have been collected. As it stands, no demographic information is available for those who received the questionnaire but do not access a SNS for personal reasons while at work.

Although the questionnaire was pretested on 10 health care professionals, a flaw in how one of the questions was phrased was discovered during data analysis. Questions 18 through 23 were preceded with the phrase “Personal social network site use at work helps me:” that then led into the actual question. The issue was with question 23, which stated: “Has no effect on how I perform at work.” The problem becomes apparent when combining the two phrases: “Personal social network site use at work helps me: Has no effect on how I perform at work.” Clearly this question does not make grammatical sense.

Another issue with using a questionnaire, which relies on self-reported measures, has to do with the possibility that the respondents may not have been completely truthful when answering the questions. Social desirability bias, which refers to the possibility that respondents may answer the questions in a way that makes them appear more favorable than they actually are, may be an issue. Aside from the possibility of respondents not being completely truthful there may also be a disconnect between a respondent’s perception and reality. A respondent may honestly perceive SNS use at work to improve their productivity, but it is possible that if other measures of productivity were used it might be found that SNS use actually decreases the respondent’s productivity. As was discussed in the discussion section from chapter five, there
were a number of inconsistencies in how respondents answered questions, which could be used to further strengthen the argument that self-reported data may not be completely reliable.

A limitation pointed out in the review of literature mentioning how a survey of 3,200 workers found that those who attained a higher level of education spent more time on SNSs at work compared to their lower educated counterparts ("Why & how your employees are wasting time at work," n.d.) brings up the potential issue that this study may suffer the same bias because the population under study, knowledge workers, is by nature required to have attained a higher degree of education.

There was also the issue of underrepresentation and overrepresentation of certain demographics. The participating sample was not very diverse, but rather were heavily concentrated in particular demographic areas. There was an overrepresentation of young, female registered nurses with bachelor’s degrees and underrepresented among older workers. The underrepresentation of older workers was also an issue among past studies. A potential reason for the underrepresentation of older workers in this study may be explained by the findings of a study that found that older workers are less likely to use SNSs, especially while at work ("Why & how your employees are wasting time at work," n.d.).

Although the response rate was relatively high, the study still had a lower than desired number of valid surveys to include in the data analysis. The study originally had anticipated a much larger sample size, but a last minute change at Butterworth Hospital significantly limited the number of work shifts that could be included in the study. Because there were only 82 valid surveys, and of those 82 surveys the vast majority came from young female registered nurses, it was difficult to do any kind of meaningful statistical comparisons between profession, age, sex,
and education. Even trying to look at differences between hospitals was limited due to the low number of total responses from St. John’s Medical Center.

**Contribution of Study**

Even though social network sites have been in existence for well over a decade and have been the subject of numerous studies, it is still unclear exactly how SNSs impact worker productivity, whether it be positive or negative. However, as more studies examine the relationship between SNSs and worker productivity, the connection between these two becomes a little more transparent.

The present study has expanded upon what is known about the relationship between SNSs and worker productivity by providing additional insight on this relationship from the perspective of a very specific type of worker, knowledge workers in the medical field. Although the study measured perceived productivity from the worker’s perspective, this study has still provided a look at how knowledge workers within the medical industry from two distinct hospitals perceive their social network site use to affect their productivity and ability to concentrate on work tasks.

The study found high SNS use even among busy medical workers and determined that participants’ perceived concentration was lower after spending their break visiting a SNS compared to when they spend their break doing something else. This raises the concern that SNS use can have an affect on perceived concentration, which shows the need for further research on this subject.
Suggestions for Future Research

Although many studies, including the present study, have focused on social network sites’ impact on worker productivity, there are still many possible roads ahead for future research. Possible areas of study include a comparison between knowledge workers and manual workers when it comes to social network site use at work to see if there are differences between the type of job being performed.

Another possibility for a study and a key step forward in understanding the impact of SNS use on worker performance would be to compare employee performance records to employee SNS access frequency and duration, which may offer clues to how SNS use actually impacts a worker’s performance. This would also provide data that was not collected through self-reported measures, which may help provide more concrete findings.

There is also still a need for a way to accurately measure knowledge worker productivity within specific job categories. This would require considerable testing across many settings, but it could provide a huge benefit for future research that is focused on how social network sites impact knowledge worker productivity.

Including a greater diversity of knowledge worker occupations or even just other specific knowledge worker professions in studies focusing on social network sites’ impact on productivity would also go a long way in adding to the existing literature. Examining the relationship between SNSs and specific knowledge worker professions is beneficial in that it adds another piece to the big puzzle that, once solved, will help clarify how SNSs affect productivity.
If given the chance to do a followup to this study, the study’s sample would be far different. The followup study would focus on knowledge workers who spend the majority of their work day sitting at a computer instead of medical workers who are on their feet and are physically active throughout their work day. It seems plausible that those who spend most of their work time sitting at a desk and staring at a computer screen may become restless quicker and may lose focus earlier than those who are significantly more physically active while at work. A comparison between sedentary knowledge work professions and active knowledge work professions could be an interesting subject for a future study.

These are just a few of the many possible topics for future research. Regardless of the direction future studies choose to take, one thing is clear: there is a lot of open road and unexplored areas that can only help to advance our understanding of SNSs and their affect on workers and their productivity.
Appendix A

Consent to Participate Form

University of Hawai‘i
Consent to Participate in Research

Perceived Impact of Social Network Sites on Worker Productivity

My name is Jamieson Pond, and I am a graduate student at the University of Hawaii (UH). A requirement of my Master’s degree program is to conduct a research project. The purpose of my project is to examine whether social network sites (e.g., Facebook, Twitter, etc) have an impact on worker productivity. Participation in this study will involve the completion of an anonymous printed survey. I am asking you to participate in this project because you are at least 18 years old and your type of work may be categorized as being knowledge work. (Knowledge work is defined as work that is information-based and relies on workers who use information as their main input and whose major products are distillations of that information.)

Project Description – Activities and Time Commitment: Participants will fill out a survey that is handed to them prior to their work shift. Survey questions are primarily multiple choice. However, there will be a few opportunities to expand upon your answer with an open-ended narrative response. Completion of the survey will take approximately 15-20 minutes.

Benefits and Risks: There will be no direct benefit to you for participating in this survey. The results of this project may contribute to a better understanding of the impact social network sites have on worker productivity. There is little risk to you in participating in this project.

Confidentiality and Privacy: This survey is anonymous. I will not ask you to provide any personal information that could be used to identify you. Likewise, please do not include any personal information, such as your name, in your survey responses.

Voluntary Participation: Participation in this project is voluntary. You can freely choose to participate or to not participate in this survey, and there will be no penalty or loss of benefits for either decision. If you agree to participate, you can stop at any time without any penalty or loss of benefits to which you are otherwise entitled.

Questions: If you have any questions about this study, you can contact me at (808) 683-6750 or jpond@hawaii.edu. You can also contact my faculty advisory, Dr. Jenifer Winter, at (808) 956-3784 or jwinter@hawaii.edu. If you have any questions about your rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

Submittal of the survey will be considered as your consent to participate in this study.
Appendix B

Questionnaire

Social Network Site Use at Work

The following questions will ask about your social network site (SNS) use for personal reasons while at work. Personal SNS use simply means accessing any social network site for any reason other than for your job.

1. Do you use a social network website (Facebook, Twitter, LinkedIn, etc.) for personal use?
   - Yes
   - No

2. Do you, or have you, accessed a social network site (SNS) while at work for personal use?
   - Yes
   - No
   If you answered “No” to questions 1 or 2, then you do not need to answer any more questions. Thank you for your participation.

3. Which SNSs do you, or have you, accessed while at work for personal use? (check all that apply):
   - Facebook
   - Twitter
   - Myspace
   - LinkedIn
   - Instagram
   - Other:_______________

4. How often do you visit a SNS while at work for personal use?
   - Multiple times a day
   - Once a day
   - Multiple times a week
   - Once a week
   - Less than once a week

5. How long do you spend visiting the SNS during each visit while at work?
   - 1-5 minutes
   - 6-10 minutes
   - 11-15 minutes
   - 15+ minutes

6. In the past week, on average, approximately how many minutes per day have you spent on a personal SNS while at work?
   - less than 10
   - 10–30
   - 31–60
7. What are the top 3 things you do on the SNS while at work? (Place a 1, 2, or 3 next to your top 3 choices):
- Look at photos
- Upload photos
- Read comments
- Write comments
- Use chat feature
- Play games
- Other: ______

8. How do you access the SNS while at work? (check all that apply):
- Work computer
- Mobile phone
- Tablet
- Personal computer
- Other: _____________

Work Breaks

The following questions are interested in understanding your break habits, to include frequency and how you spend your break time. The following questions are also interested in your ability to concentrate on your work tasks, both prior to and after taking a break.

9. How often do you take a break from work tasks (including breaks that may be as short as 60 seconds in duration)?
- Every 15 minutes or less
- Every 16-30 minutes
- Every 31-45 minutes
- Every 46-60 minutes
- Every two hours
- Every three hours or more

10. On average, how long is each break?
- 1-5 minutes
- 6-10 minutes
- 11-15 minutes
- 15+ minutes

11. In the past week, on average, what has been your reason for taking a break? (Please choose just one answer):
- Reduce stress
- Stretch muscles
Mental break
Rest eyes
Eat
Required by company policy
Other:_______

12. What are the top 3 things you most commonly do while on a work break? (Put a 1, 2, and 3 next to your top 3 choices):
☐ Socialize with co-workers
☐ Talk on the phone
☐ Visit a social network site (e.g., Facebook, Twitter)
☐ Surf online (to exclude visiting a SNS)
☐ Play a game on a computer or mobile device
☐ Use mobile device for other reasons (read news, check email, etc.)
☐ Other: __________________

SNS Use & Ability to Concentrate

On a scale of 1 to 10, with 1 being the complete inability to concentrate on any work task and 10 being completely focused on the work task, please indicate your perceived degree of mental focus/concentration for the following questions.

What is your perceived level of mental concentration:

13. Prior to you going on a break?

<table>
<thead>
<tr>
<th>No Focus</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>

14. After returning from your break?

<table>
<thead>
<tr>
<th>No Focus</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>

15. After spending your break visiting a personal SNS?

<table>
<thead>
<tr>
<th>No Focus</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>

16. After spending your break doing something other than visiting a personal SNS? (think about some of the most recent things you have done while on your break when answering this question)

<table>
<thead>
<tr>
<th>No Focus</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>

Please indicate if you agree or disagree with the following statements. Circle the appropriate number to the right of each question using the scale provided.
1 = Strongly Disagree (SD)  2 = Disagree (D)  3 = Neutral (N)  4 = Agree (A)  5 = Strongly Agree (SA)

|   | The type of break (talking to co-workers, surfing online, visiting a SNS, etc.) has an effect on my ability to concentrate on my work after the break: |
|---|---|---|---|---|---|
| 17 | SD | D | N | A | SA |
|   | 1 | 2 | 3 | 4 | 5 |

**Personal SNS Use & Work Productivity**

Please indicate if you agree or disagree with the following statements. Circle the appropriate number to the right of each question using the scale provided.

**“Personal social network site use at work helps me:”**

<table>
<thead>
<tr>
<th></th>
<th>Be more productive at work</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Think more clearly about work-related problems</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Concentrate on work tasks</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Enjoy my work better</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Relate better to my co-workers</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Has no effect on how I perform at work</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please indicate if you agree or disagree with the following statements. Circle the appropriate number to the right of each question using the scale provided.

<table>
<thead>
<tr>
<th></th>
<th>I find myself checking my SNS at times when I should be working</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>My quality of work is negatively affected by my SNS use at work</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Visiting social network sites at work for personal reasons get in the way of my work tasks</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>I don’t see a problem with accessing my SNS for personal reasons while at work</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>I have been told that my personal SNS use has effected my work performance</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Demographic Information

In order to better understand how different types of people feel about the issues just discussed, we would like to know just a little about you.

29. What is your sex:
   - Male
   - Female
   - Other

30. What is your age:
   - 18-24 years old
   - 25-34 years old
   - 35-44 years old
   - 45-54 years old
   - 55-64 years old
   - 65 or older

31. What is your profession?
   - Medical Doctor
   - Registered Nurse
   - Physician Assistant
   - Nurse Technician
   - Other: ______________

32. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received:
   - Some high school, no diploma
   - High school graduate, diploma or the equivalent
   - Some college credit, no degree
   - Trade/technical/vocational training
   - Associate degree
   - Bachelor’s degree
   - Master’s degree
   - Professional degree
   - Doctoral degree
Appendix C

Tables

Table 1. Questionnaire response rates by organization

<table>
<thead>
<tr>
<th>Site</th>
<th>Unique Employees</th>
<th>Accepted Questionnaire</th>
<th>Returned Questionnaire</th>
<th>Use SNS at Work</th>
<th>Do Not Use SNS at Work</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butterworth Hospital</td>
<td>109</td>
<td>95</td>
<td>82</td>
<td>61</td>
<td>21</td>
<td>86%</td>
</tr>
<tr>
<td>St. John’s Med Center</td>
<td>59</td>
<td>49</td>
<td>35</td>
<td>21</td>
<td>14</td>
<td>71%</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>144</td>
<td>117</td>
<td>82</td>
<td>35</td>
<td>81%</td>
</tr>
</tbody>
</table>

Table 2. Crosstabulation of SNS frequency and perceived productivity

<table>
<thead>
<tr>
<th>Be more productive at work</th>
<th>Q4Frequency New</th>
<th>Multiple times a day</th>
<th>Once a day</th>
<th>Multiple times a week</th>
<th>Once a week or less</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree or Strongly Disagree</td>
<td>Count</td>
<td>16</td>
<td>8</td>
<td>0</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>% within Q4Frequency New</td>
<td>50.0%</td>
<td>32.0%</td>
<td>40.0%</td>
<td>50.0%</td>
<td>40.2%</td>
<td></td>
</tr>
<tr>
<td>Agree or Strongly Agree</td>
<td>Count</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>% within Q4Frequency New</td>
<td>12.5%</td>
<td>28.0%</td>
<td>20.0%</td>
<td>0.0%</td>
<td>17.1%</td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>Count</td>
<td>12</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td>% within Q4Frequency New</td>
<td>37.5%</td>
<td>40.0%</td>
<td>40.0%</td>
<td>70.0%</td>
<td>42.7%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>32</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td>82</td>
</tr>
<tr>
<td>% within Q4Frequency New</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3. Perceived concentration of high frequency SNS users after break visiting a SNS

<table>
<thead>
<tr>
<th></th>
<th>Highest frequency of SNS use</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple times a day</td>
<td>Total</td>
</tr>
<tr>
<td>Concentration After SNS Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate Concentration (4–7)</td>
<td>Count</td>
<td>% within Highest frequency of SNS use</td>
</tr>
<tr>
<td>High Concentration (8–10)</td>
<td>Count</td>
<td>% within Highest frequency of SNS use</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>% within Highest frequency of SNS use</td>
</tr>
</tbody>
</table>

### Table 4. Perceived concentration of high frequency SNS users after non SNS break

<table>
<thead>
<tr>
<th></th>
<th>Highest frequency of SNS use</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple times a day</td>
<td>Total</td>
</tr>
<tr>
<td>Concentration After Non SNS Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate Concentration (4–7)</td>
<td>Count</td>
<td>% within Highest frequency of SNS use</td>
</tr>
<tr>
<td>High Concentration (8–10)</td>
<td>Count</td>
<td>% within Highest frequency of SNS use</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>% within Highest frequency of SNS use</td>
</tr>
</tbody>
</table>
Appendix D

Figures

Figure 1. Respondents’ age

![Bar chart showing age distribution](image1)

- 12% 18-24 years old
- 54% 25-34 years old
- 20% 35-44 years old
- 12% 45-54 years old
- 2% 55-65 years old

Figure 2. Respondents’ sex

![Bar chart showing sex distribution](image2)

- 18% Male
- 82% Female
Figure 3. Respondents’ profession

Figure 4. Profession by hospital
Figure 5. Respondents’ education

Figure 6. Frequency of SNS use
Figure 7. SNS duration (each visit)

Length of time on SNS per visit

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 minutes</td>
<td>66%</td>
</tr>
<tr>
<td>6-10 minutes</td>
<td>27%</td>
</tr>
<tr>
<td>11-15 minutes</td>
<td>6%</td>
</tr>
<tr>
<td>15+ minutes</td>
<td>1%</td>
</tr>
</tbody>
</table>

Figure 8. Cumulative SNS use at work in a work week

SNS use in a week

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 minutes</td>
<td>39%</td>
</tr>
<tr>
<td>10-30 minutes</td>
<td>28%</td>
</tr>
<tr>
<td>31-60 minutes</td>
<td>21%</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>11%</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>1%</td>
</tr>
</tbody>
</table>
Figure 9. Break frequency

![Bar chart showing frequency of taking work breaks.]

- Every 15 minutes or less: 4%
- Every 16-30 minutes: 4%
- Every 31-45 minutes: 1%
- Every 46-60 minutes: 14%
- Every two hours: 30%
- Every three hours or more: 48%

Figure 10. Break duration

![Bar chart showing length of breaks.]

- 1-5 minutes: 43%
- 6-10 minutes: 23%
- 11-15 minutes: 28%
Figure 11. Reason for break

![Bar chart showing reasons for break with percentages: Reduce stress (27%), Stretch muscles (4%), Mental break (40%), Rest eyes (1%), Eat (23%), Required by company policy (1%), Other (4%).]

Figure 12. Concentration prior to break

![Column chart showing concentration levels prior to break with percentages: Low Concentration (1-3) 10%, Moderate Concentration (4-7) 44%, High Concentration (8-10) 46%.]
Figure 13. Concentration after break

Figure 14. Concentration after SNS break
Figure 15. Concentration after non SNS break

![Concentration After Non SNS Break](image)

Figure 16. Break type’s effect on concentration

![Break Type Effect on Concentration](image)
Figure 17. SNSs and productivity

![Bar chart showing the percentage of people who disagree, agree, or are neutral about whether SNS use helps them be more productive at work.](image)

- Disagree or Strongly Disagree: 40%
- Agree or Strongly Agree: 17%
- Neutral: 43%

Figure 18. SNSs and thinking about work-related problems

![Bar chart showing the percentage of people who disagree, agree, or are neutral about whether SNS use helps them think more clearly about work problems.](image)

- Disagree or Strongly Disagree: 49%
- Agree or Strongly Agree: 9%
- Neutral: 43%
Figure 19. SNSs and concentrating on work tasks

Figure 20. SNS use helps enjoy work better
Figure 21. SNS use helps to better relate to co-workers

Figure 22. Checking SNS when should be working
Figure 23. SNS use gets in the way of work tasks

Figure 24. Quality of work negatively affected by SNS use
Figure 25. Don’t see a problem with SNS use at work

![Bar chart showing percent of respondents who disagree, agree, or are neutral about SNS use at work. 52% agree or strongly agree, 21% disagree or strongly disagree, 27% neutral.]

Figure 26. Response inconsistencies on perceived concentration after SNS and non-SNS breaks by those who believe that type of break has no impact on concentration

![Two bar charts showing count of respondents by concentration level after SNS and non-SNS breaks.]
Figure 27. Concentration before and after break comparison

Figure 28. Concentration comparison between SNS and non SNS break.
References Cited


Nickols, F. (2000), “‘What is’ in the world of work and working: Some implications of the shift to knowledge work”, Butterworth-Heinemann Yearbook of Knowledge Management, pp. 3-10


