Research Report

# Beyond Facebook: The generalization of social networking site measures

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A B S T R A C T

*Purpose:* Previous research on social networking sites (SNSs) suggests several factors that contribute to SNS use. However, the factors were specific to a particular website. We wished to know if similar factors could predict the use of a new SNS in terms of usefulness and satisfaction with the goal of creating factors that would generalize across SNSs.
*Results:* Participants reported their SNS Diet and performed five tasks using a new SNS. Then, participants reported which of the five tasks was most frustrating. Participants also reported if the usefulness of the SNS would affect their future use of the site. Participants with a high SNS Diet used SNSs once a day or more. The SNS Diet was predictive of a participant's satisfaction rating and a participant's perception of usefulness.
*Conclusion:* The differences suggest that different groups of social networking users will respond differently based on their SNS Diet. This study finds support for both the Rational Actor Perspective and the Web Acceptance Model. We outline a new continuous measure of SNS use which generalizes across different social networks.

## 1. Introduction

Unlike email or instant messaging communication tools, social network site (SNS)[1] applications must attract a critical number of users for the benefit of SNS use to emerge (Lin & Bhattacherjee, 2008; Lin & Lu, 2011). Traditionally, communication has been viewed as an interactive and collaborative process in which the two parties work together to establish a message and reach a mutual understanding of the knowledge contained within (Fussell, 1995). Among communication channels, SNS is unique in that it is asynchronous and uses only "intentional attempts to communicate a particular message to another person using conventional words or symbols" (Fussell, 1995, p. 230).

While much is known about users of social networking sites (SNSs), such as who they are, what they share, and why they share it (Lin & Lu, 2011). The factors which differentiate users of the SNSs, especially novel SNSs, require additional study. Previous SNS studies have quantified influencing factors by measuring the time on site (with a self-report), number of friends, and the Facebook intensity scale (Ellison, Steinfield, & Lampe, 2007; Johnson, 2008; Smock, Ellison, Lampe, & Wohn, 2011; Tong, Heide, Langwell, & Walther, 2008). While these factors are sufficient to study existing SNSs, they do not generalize to new SNS applications. Developers, practitioners and researchers have few tools to explore how and why SNS users accept or fail to accept a new SNS. This study explores factors that can generalize to all SNSs and measure a new SNS. These factors have been suggested by emerging frameworks of SNS use such as the Rational Actor Perspective and the Web Acceptance Model.

Rational Actor Perspective was developed in studies of email communication by Markus (1994) and has since been extended into other means of asynchronous electronic communication (Bowman, Westerman, & Claus, 2012). The Rational Actor Perspective (RAP) framework suggests that an "SNS Diet" can predict a user's ability to overcome poor tool design in order to fulfill a SNS goal (Bowman et al., 2012). As the combination of frequent SNS use, duration of use, and amount of use increases (i.e., daily, weekly, or monthly), the user is more likely to overcome inadequate designs.

The Web Acceptance Model is an expansion of the Technology Acceptance Model (Ma & Liu, 2004; Koufaris, 2002). The Web Acceptance Model (WAM) framework suggests that perceived ease

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[1] A social network site is a website or a mobile application that allows people to create an account and upload information about themselves or others. The information may include information such as age, gender, marital status, where the person attended school, what cities the person has lived in, and so forth. Once an account has been created, the person can use the account to communicate with other people who have an account on that network by posting messages, photos, videos and links to other websites. The communication is asynchronous.

of use is a primary factor in a user's decision to return to a website or an SNS. Ease of use is less relevant to experienced users who gauge usefulness as more important (Castañeda, Muñoz-Leiva, & Luque, 2007). In the Web Acceptance Model, SNSs that seem *"easy to use"* are preferred by novice users. As a user's experience increases, the SNS's usefulness replaces the perceived *"ease of use"* preference.

According to these two models, a user of an SNS may answer differently to questions about satisfaction, ease, and usefulness of the SNS site. Users with much experience are hypothesized to answer differently than users with significantly less experience (Bowman et al., 2012) and the more experienced users will be more tolerant of frustrating tools within the SNS (Bowman et al., 2012). The more experienced users will value usefulness (Castañeda et al., 2007).

We tested a three part hypothesis. Part I-SNS Diet: Users will respond differently to satisfaction, ease, and usefulness according to their experience which can be quantified by the factors of frequent SNS use, duration of use, and amount of use increases. Part II-Tolerance: Users with a high SNS Diet will be more tolerant of frustrating tools than users with a low SNS Diet. Part III-usefulness: Users with a high SNS Diet will value usefulness (i. e. not likely to use the site without their friends on the same SNS) more than users with a low SNS Diet (WAM).

Thus we collected measures:

1. SNS Diet – frequency of SNS use (i.e. hourly, every few hours, daily, etc.), duration of use (age of first internet use), and amount of use (number of applications that you have installed).
2. Ease of Use – the satisfaction ratings of the ease with which they could do the tasks/use the tools in the SNS.
3. Usefulness – answering a question about if you would use it with friends, use it without your friends also being on the SNS site.

We used a novel SNS developed by a local company. At the time of testing, the novel SNS had 1160 users and had been available online and as a mobile application for less than a year. In addition to testing these hypotheses, we conducted a usability test. We shared the results of the testing with the company. There was no conflict of interest. The site has been sold to a private entity but remains active on the web. We are glad to respond to individual requests from the research community regarding the uniform resource locator of the site for use in further academic research.

The new SNS focused on simple photo, video, and text sharing. Users can sign-up for the free SNS service and create a profile (e.g., username, avatar, and photo) as well as find any friends already using the application. Users can share events (e.g., birthday party, vacation, party, and wedding) or experiences (e.g., weight loss journey, arts and crafts, cooking) with an audience. Users may share individual events as public or with only a few individuals or with no one. This SNS does not allow a user to set global privacy settings; the default is no sharing of events unless the user specifies who and how each individual event that she/he enters into the system should be shared.

## 2. Methods

### 2.1. Experimental design

The mobile and the desktop versions of the interfaces were tested. The desktop version of the SNS was tested on a desktop computer that was connected to the local area network. The mobile version of the interface was tested on an iPod 5th generation mobile iOS device with a wireless connection to the wide area network.

The presentation order of the interfaces was counterbalanced between participants in case one interface would influence the other.

The design was a one-way within design. Participants completed eight tasks that were chosen by the development team to be the most common tasks that they believed that users would accomplish with the interface in the order that the developers believed that a user would perform these tasks. During the testing, the research assistant sat next to the participant to guide them through the tasks and encouraged the participant to try each task until they were successful.

### 2.2. Participants

Thirty-two undergraduate students at a large Southeastern state university participated in the study for class credit. The study was reviewed and approved by the institution's IRB and all approved procedures were followed. There were 26 women and 6 men who ranged in age from 18 to 25 years old with one person aged 28 years, and one person aged 37 years. None of the participants tested had used the site previously nor had friends on the site.

### 2.3. Materials

A list of tasks, pictures to upload, a video to upload, text for the participant to enter, and information to create an account were prepared. The development team agreed to use several experimental accounts and to delete these accounts at the end of the day so that participants would be creating a new account each time one of them used the experimental account to log in. A demographic questionnaire and satisfaction survey were developed (Appendices A and C).

### 2.4. Procedure

After informed consent, participants completed the first set of questions (Appendix A). Then, participants did the following tasks using the interface (Appendix B):

1. Find the website.
2. Make an account with the password of "xxxx" and the email of "xxxx@xx.com".
3. Create a dash that says, "I am in the experiment right now".
4. Add pictures, a video and additional text to the dash.
5. Find these people, Jo and Vera, and add them to the dash.
6. Log out.

Half of the participants used the mobile interface first and half used the web interface first. After the completion of all tasks on an interface, the participant filled out a satisfaction survey (Appendix C).

## 3. Results

### 3.1. Participants

Participants in this study had an average age of 21 years ($M = 20.56$ years, $SD = 3.75$ years). All of the participants reported that they had used at least one social networking site (SNS). Most of the participants (91%) currently used SNSs. Of the few participants (9%) who did not currently use SNSs, they stated that they had concerns about privacy or time management.

### 3.2. Hypothesis I – SNS Diet

The factors of: (a) how many applications they currently have on their devices (apps); (b) the frequency with which they use