
Strictly by the Facebook: Unobtrusive Method for Differentiating Users

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Abstract

A large proportion of Facebook studies are based on self-report data. However, survey measures may not meaningfully differentiate Facebook use. From computer and phone logs and Facebook activity data, we found a simple item—how important participants rate Facebook—may be one way to distinguish between Facebook consumers and producers.

Author Keywords

Facebook; social media; methodology; surveys

ACM Classification Keywords

H.4.1: Information Systems Applications: groupware

Introduction

Ample research uses survey measures to gauge how long, how often, and for what purposes people use Facebook or to differentiate different types of Facebook users, such as those who use it less intensively or more intensively [1]. Studies suggest that self-reports of actual Facebook use are not accurate [2]. Although Facebook logging techniques exist, they are often expensive and invasive. As such, there remains a need for a way to easily identify different types of Facebook users.

This research explores survey item use and how well they can distinguish Facebook users' actual use—how

long they use Facebook, how often, and what types of activities they do, and what makes Facebook “important” to them. This work is part of a larger study of college students’ multitasking and technology use [3]. Using a mixed-method approach, we set out to explore the following research questions: 1) *How is perceived Facebook importance associated with attitudes toward Facebook?*; 2) *How is perceived importance of Facebook related to actual Facebook use?*; 3) *How is perceived importance of Facebook related to different types of Facebook use?*

Method

This mixed-method study used unobtrusive logging software to capture 76 college students’ Facebook activity by computer and phone over a 7-day period. Our sample was limited to students with both Windows computers and Android phones due to operating system requirements of our logging software. Students were a convenience sample of 18- to 23-year-olds (mean=19.3). The median student year in college was sophomore. Self-reported surveys of Facebook use, attitudes, and beliefs were used. Five participants were excluded due to missing computer data (software uninstalled by antivirus or participant), four were excluded due to missing Facebook data (incomplete data due to Internet issues, or no Facebook account), and 6 were excluded due to non-response on survey items, for a total sample of 62 participants.

Computer and Phone Logs

Over 7 days, computer activity was captured with the Kidlogger (kidlogger.net) Windows freeware. This software generated one log record each time a user opened a new window or web browser tab or switched among already open windows or browser tabs.

Kidlogger only recorded windows that were currently in the foreground; applications that were running in the background, such as a music player or minimized webpage, were not measured.

The AWARE Framework Android application (www.awareframework.com) was used to collect smartphone use data. This app created one log record each time a participant opened an app, opened a web browser tab, or switched between apps. URLs were categorized as Facebook activity based on their domain name (e.g., facebook.com).

Facebook Logs

A custom Facebook application was installed on the last day of the study. This app captured specific Facebook activities (e.g., wall posts, status updates, photo sharing) and direct messaging to Facebook friends that occurred during the 7-day study and saved it to a secure cloud server. Immediately afterward, the app was uninstalled from the participant’s Facebook account. To address privacy concerns, the app only captured the type of activity on the participant’s own wall (e.g., messages, posts, picture tags), but none of the content nor posts on friends’ walls. Facebook profile log data were stored using a MySQL database. MySQL was used to sum each participant’s weekly Facebook activity, including the total amount of Facebook wall activity, and the amount of activity per type.

Surveys and Interviews

Participants completed a general survey on their beliefs about Facebook, including questions from the Facebook Intensity Scale[1]. Their answers to the following questions were used in this analysis: “The following is a list of social media sites. Rate how important each of



Figure 1. Summary statistics for participant Facebook use.

these sites is for you” (1=Not at all important; 5=Extremely important); “I feel out of touch when I haven’t logged onto Facebook for a while” (1=Strongly disagree; 5=Strongly agree); “Facebook has become a part of my daily routine” (1=Strongly disagree; 5=Strongly agree).

Analysis

Correlations between attitudes, beliefs, and actual practices were calculated as well as OLS regressions to 1) identify predictors of Facebook importance and 2) examine whether Facebook importance was a predictor of actual Facebook behaviors. Independent variable selection was motivated by first-order correlations, which suggested relationships among these variables and Facebook importance.

To assess differences between users are the extremes of importance (i.e., greater than 1 standard deviation from the mean), Wilcoxon rank-sum tests (Mann-Whitney U tests) were used to compare *producer* participants more than 1 SD higher than the mean on Facebook importance rating (N=9) with *consumers*, or those less than 1 SD lower than the mean (N=11).

Snapshot of a Week on Facebook

Our sample included students from a variety of ethnic backgrounds and from all years in college. These students on average spent 53.28 minutes on Facebook each day over approximately 39 average daily visits (Figure 1). On average, they generated about 8.5 posts over the week of the study and engaged in nearly 8 different unique conversation threads via Facebook Messenger.

Items associated with Facebook importance

Variable	Coefficient
I log on to Facebook to feel connected	0.412*** (0.095)
I log on to Facebook out of boredom	0.360** (0.129)
I feel it is important to share my accomplishments on Facebook	0.159 (0.129)
I feel it is important to share my current frustrations on Facebook	-0.193 (0.146)

Table 1. Regression of Facebook importance on self-report variables. Controls included gender, race, and age. Standard deviation in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Our findings suggest one easy-to-implement survey item—“Rate what importance of Facebook is for you”—can be used to differentiate Facebook users into “producer” types who post often and “consumer” types who rarely post and have on average fewer friends.

Variable	Coefficient
Facebook duration (computer and phone)	-140.414 (575.160)
Facebook visits	1.651 (6.837)
Facebook wall activity	3.014* (1.322)

Table 2. Summary of four regressions of actual use variables on Facebook importance. Control variables included gender, race, and age. SD in parentheses. * $p < 0.05$, ** $p < 0.01$

Facebook importance predicted Facebook wall activity after controlling for gender, race, and age, but did not predict amount of time on Facebook or frequency of checking.

Producers and Consumers

In comparing producers and consumers, (Figure 2), differences were found in terms of conceptualizations of

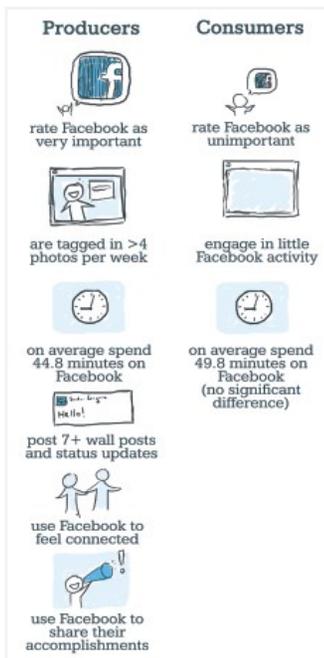


Figure 2. Differences and similarities between “producers” and “consumers.”

Facebook use, purpose for use, and types and amount of Facebook activity including number of friends, unique direct message conversations, and specific types of wall posting activity. However, no statistically significant differences were found in terms of Facebook use duration or instances of Facebook use (switches). These findings suggest that importance of Facebook as a construct may be useful for identifying types of users, such as those who use Facebook to feel more connected (e.g., are tagged in photos by others and report using Facebook to feel connected) and who post intensively, but that it has little to do with quantity of time spent using the platform.

Conclusions and Future Directions

We argue that a rating of Facebook importance is a simple question for distinguishing between producer-types and less active consumer-types. Moreover, we suggest that the very notion of “importance” is conflated not with how long and how often users log on to Facebook, but with the social activities they engage in (such as messaging) as well as the purposes for using it (e.g., to feel connected or to relieve boredom).

Although these data were from college students and may not be generalizable to other populations, college students are among the highest users of social media [4]. Future studies will explore these methods with other populations. Given that Facebook use may impact college students as they negotiate school [1], understanding the best methodological approaches for measuring constructs related to social media use will be important for exploring how these technologies figure into young people’s lives as they transition into college and on to careers. Although future work will examine the types of users that this question identifies

(consumers and producers) and whether this importance predicts outcomes, this study suggests that use of a simple survey item is a promising method for distinguishing patterns of Facebook use.

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