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PREDICTORS AND CONSEQUENCES OF DIFFERENTIATED PRACTICES ON SOCIAL NETWORK SITES

Applying a typology of social network site (SNS) usage that takes into consideration the intensity with which people use such sites, this piece offers an empirical investigation of how users' social practices on SNSs differ and whether different levels of engagement have consequences for academic performance. We rely on a unique survey-based data set representing a diverse group of young adults to answer these questions. We find, not surprisingly, that the more intense users of such sites engage in more social activities on SNSs than those who spend less time on them and only use one such site. This finding holds in the realm of both stronger-tie activities and weaker-tie activities, that is, social practices involving one's close friends as well as less established ties. Our analyses suggest gender differences in level of engagement with SNS social practices. Women pursue more stronger-tie activities than men, such as interacting with existing friends. In contrast, women engage in fewer weaker-tie activities than men, such as developing new relationships on such sites. However, neither SNS usage intensity nor social practices performed on these sites is systematically related to students' academic performance, findings that challenge some previous claims to the contrary.

Keywords social network sites; intensity; web use; skills; social practices; online behaviour; academic performance

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Introduction

Despite the upsurge in research on social network sites (SNSs) (see boyd & Ellison 2007 for a review of related literature), most studies have tended to look at SNS usage as an either-or phenomenon by focusing on the use of just one such site or

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alternatively investigating the use of any such site at any level of engagement (Jones *et al.* 2008; Steinfield *et al.* 2008; Tong *et al.* 2008; Ross *et al.* 2009). While these are helpful investigations for understanding how people are integrating SNSs into their lives, they have tended to overlook some of the complexity in how people use such sites, namely, that they may use multiple SNSs and at varying levels of intensity. To address this limitation in how SNS use has thus far been conceptualized and measured, we employ a typology of SNS usage (Hargittai & Hsieh 2010) that accounts for both frequency and diversity of SNS use to examine how these different usage levels may be associated with varying types of activities and outcomes when users spend time on such sites. This approach allows us to address current debates concerning the implications of using SNSs (Kolek & Saunders 2008; Karpinski & Duberstein 2009; Pasek *et al.* 2009; Sigman 2009), that is, whether there is a systematic relationship between different levels of SNS use intensity and other aspects of users' daily lives, such as academic performance. In this paper, using a unique data set based on a survey administered to a diverse group of young adults with sufficiently detailed information about their SNS uses, we are able to explore answers to such questions.

Implications of SNS usage

SNSs have become some of the most popular online services in recent years (comScore 2009). Users create an online profile on these sites by listing personal and professional information and interests, linking up with other users, and regularly sharing updates about the goings on in their lives with those in their networks. Given their significant rise in popularity, it is not surprising that these sites and their uses have attracted considerable scholarly attention in recent years. Some work has found that young adults engage in various social activities – such as being in touch with different types of contacts – through SNSs as a crucial part of the process of developing their self-identity and friendships (boyd 2007; Ito *et al.* 2009). Findings from this work suggest that many people who use these sites have started to integrate them into their everyday lives as a common daily practice. Some people's SNS uses are challenging certain social conventions such as approaches to privacy, identity construction, and how people interact with one and other in their daily lives (e.g., Tufekci 2008; Zhao *et al.* 2008). Accordingly, it is important to consider how different people use such sites for a better understanding of how their uses may influence common social practices.

The rapid growth of SNS usage has been coupled with increasing academic research examining the social implications of time spent on such sites. For example, researchers have looked at how Facebook users' friendship networks may affect their life experiences (e.g. Lewis *et al.* 2008; Tong *et al.* 2008; Seder & Oishi 2009). In their experimental study of online impression formation, Tong *et al.* (2008) found a complex non-linear relationship between the total

number of friends on an individual's profile (i.e. SNS network size) and the person's perceived attractiveness and perceived extraversion, suggesting that users who either have the least or the most friends on their profile are perceived as the least attractive, while those with a moderately large number of friends are perceived as the most outgoing people by others. Racial and ethnic homogeneity of personal networks is another important network property that has attracted scholarly attention. Researchers have found that White Facebook users may have more ethnically and racially homogeneous friendship networks than minority users (Lewis *et al.* 2008; Seder & Oishi 2009). Additionally, this friendship network property (i.e. homogeneity) has been associated with better well-being – as measured by life satisfaction – for White users (Seder & Oishi 2009) and higher frequency of Facebook use for minority users (Lewis *et al.* 2008).

The popularity of SNS usage has also attracted some concerns regarding its implication for other aspects of users' lives. For instance, Sigman (2009) suggested that the time an individual spends online for social networking may be displacing time spent on face-to-face interactions and that increased isolation may be associated with physiological changes such as augmented incidence of illness. In their study, Karpinski and Duberstein (2009) found a negative relationship between being a Facebook user and academic achievement as measured by grade point average, although the collapsing of undergraduate and graduate students in their sample limits the validity of their findings for any particular population. Not surprisingly, such studies and corresponding mainstream media coverage have often introduced moral panics about the possible detrimental consequences of using SNSs (Bahney 2006; Roush 2006; Nussbaum 2007; Hope 2009; Leake & Warren 2009). However, others have suggested caution before drawing dire conclusions since empirical evidence rarely supports overarching fears about the negative social and psychological implications of these sites (Hinduja & Patchin 2008; Jones *et al.* 2008; Livingstone 2008; Pasek *et al.* 2009).

Some recent work has focused on exploring the factors that explain different patterns in SNS use and adoption such as gender, personality, and motivations of use (Joinson 2008; Lampe *et al.* 2008; Steinfield *et al.* 2008; Zywica & Danowski 2008; Barker 2009; Pfeil *et al.* 2009; Ross *et al.* 2009; Seder & Oishi 2009). For example, in her study of college students' motivations for using SNSs, Barker (2009) found a clear gender difference in reasons for using SNSs with female students and those possessing stronger group identity using them more frequently for communicative and entertainment purposes than others. In their Canadian college student sample, Ross *et al.* (2009) also found that communicative motivation was influential in students' decisions to use Facebook, while personality factors such as extraversion and openness only exhibited a moderate positive association with Facebook use.

Exploring social-capital formation through Facebook use, Steinfield *et al.* (2008) found that their 'Facebook intensity scale' was an important explanatory variable when looking at how Facebook use may predict changes in users' social

capital. This measure is based on data about daily time spent on the site, total number of Facebook friends, and a series of attitudinal items assessing 'the degree to which the respondent felt emotionally connected to Facebook and the extent to which Facebook was integrated into daily activities' (Steinfield *et al.* 2008, p. 439). The authors found that scoring higher on the scale was related to increases in bridging social capital. This finding lends support to the central methodological and conceptual proposition of this paper: that it is limiting to consider SNS usage as a simple binary variable separating users from non-users, rather, it is important to look at the level of engagement with such sites when considering their implications.

As the aforementioned studies suggest, some scholars have started to consider the frequency of SNS usage in their work as they have explored the implications of spending time on such sites. However, work has not yet looked at how the diversity of SNS usage (i.e. the number of different such sites respondents use) may influence outcomes. Most studies in this domain tend to focus on the use of one single site with a possible underlying implication that findings about their uses are interchangeable (e.g. Steinfield *et al.* 2008; Pfeil *et al.* 2009). Nevertheless, work has shown that use of these sites is not random; rather, people select into them based on various user characteristics and social circumstances (Hargittai 2007). Given the increasing number and prevalence of SNSs and differences in how much time people spend online on various activities more generally speaking (e.g. Wellman & Haythornthwaite 2002; Fallows 2004; Howard & Jones 2004), it seems problematic to collapse all SNS users into one group. To address this shortcoming of the literature, we draw on a typology of SNS usage that we briefly outline in the next section. We then use information about where a user falls on this typology to examine outcomes associated with SNS usage.

Typology of SNS uses

Elsewhere (Hargittai & Hsieh 2010), we propose taking into account both the frequency with which users visit SNSs and the number of such sites with which they engage on a regular basis when studying the social implications of such site usage. This approach yields a two-by-two matrix of SNS engagement presented in Figure 1. Those who use only one SNS and do so only sometimes (as opposed to often) we call Dabblers as their engagement is rather minimal on the whole. Those who visit more than one SNS, but none of them often, we classify as Samplers since they are trying out such sites, but none with a high level of frequency. Users who are active often on one SNS but do not use any others are Devotees given their dedication to one site. Finally, those who are visitors to more than one SNS and use at least one of them often we label Omnivores due to their high level of engagement with a diverse set of SNS communities.

Use Frequency	Use Diversity (number of SNSs used): *1 SNS only*	*More than 1 SNS*
Sometimes	Dabbler	Sampler
Often	Devotee	Omnivore

FIGURE 1 Typology of SNS usage types.

After Non-Users, Dabblers are the least engaged group. Samplers are not active on any particular SNS but spend time on more than one, so their engagement may be higher than that of Dabblers. Devotees only engage with one such service, but do so often. Omnivores have embraced SNSs the most by using a diversity of them and spending considerable time on at least one such service.

To understand what types of user characteristics are most likely to be associated with different levels of SNS use intensity, elsewhere we employed multinomial logistic regression analyses (see Hargittai & Hsieh 2010 for more details about the analysis and see the Data and methods section below for more information about the sample). The findings of that investigation suggest that the level of engagement is not randomly distributed among study participants. Gender is an important factor when it comes to explaining intensity of SNS usage, with women more likely to be intense users of SNSs than men. We also found that the context of Internet use may explain one's level of SNS engagement, namely, students who did not live with their parents and had more Internet access points in their personal networks had a higher likelihood of using SNSs intensely than those living with their parents and with fewer opportunities to go online in the homes of those in their networks. Additionally, results suggested that students who spent more time on the Internet and had higher online abilities were more likely to be more engaged with SNSs than those who spent less time online and reported lower-level skills.

Having established that our proposed typology of SNS usage allows us to distinguish between different levels of engagement with such sites by user background, the next step is to see how the typology may contribute to our understanding of what different types of people do on such sites and the implications of these uses. While researchers have already conducted considerable empirical investigations regarding users' social practices on each individual SNS, existing literature has rarely considered and examined these social practices in relation to the combination of frequency and diversity of SNS usage. With our proposed typology of SNS use, we are able to consider whether different levels of SNS engagement are related to different activities on such sites. While it may well be that more interest in certain types of SNS-based activities drives higher-level use of such sites, without a detailed investigation, it is impossible to know which types of particular activities are linked to different levels of engagement.

Additionally, we can apply this more comprehensive framework to address the current debate concerning the outcomes of SNS usage, namely, whether there is a systematic relationship between different levels of SNS use intensity and other aspects of users' daily lives such as academic performance (Kolek & Saunders 2008; Karpinski & Duberstein 2009; Pasek *et al.* 2009). Our focus on social interactions on these sites, in particular, is relevant to this question, given that communicating with others is a major type of activity in which people engage on SNSs and thus accounts for much time that could be spent in other ways.

Data and methods

College students in the United States constitute an ideal population for studying differences in digital media uses, given their high Internet connectivity levels. Accordingly, the analyses presented here are based on data representing a diverse group of mainly 18- and 19-year-old first-year students at an urban public research university.[1]

Data collection

The study was conducted in February and March of 2007 at a school that consistently ranks among the most ethnically diverse campuses in the country (US News and World Report 2006), suggesting that this is an ideal location for studying how different kinds of people use online sites and services. This school's curriculum requires every student to take part in the First-Year Writing Program. Surveying students based on enrolment in this course ensures that there is no selection bias in study participation. Out of the 87 sections offered as part of this course, we administered the survey in 85 sections, constituting a 98 per cent participation rate on the part of course sections. Overall, there was a final response rate of 82 per cent based on all of the students enrolled in the course (people missing class the day the survey was administered were excluded). In order to control for time in the programme, this article focuses on the 1060 first-year students in the class.

Respondents were asked to fill out the survey on paper rather than online. Relying on an online web-based questionnaire when studying Internet uses can create bias towards people who spend more time online, given that they may be more inclined to fill out surveys and also, perhaps, more inclined towards higher rates of participation on the sites of research interest. The questionnaire included detailed items about respondents' Internet uses (e.g. experience, types of sites visited, and online activities) as well as people's demographic background in addition to a number of other questions.

Independent variables

We measured basic demographic information using standard modes of operationalization. Students were asked their year of birth, and this information is used to

calculate their age, which we include in the sample description. Male is the base gender category (male, 0; female, 1). Information about race and ethnicity was collected using the US 2000 Census Bureau questionnaire format (US Census Bureau 2001), and dummy variables are used in the statistical models with White as the base category. Consistent with work by others, parental education is used as a measure of socioeconomic status (e.g. Carlson *et al.* 2000). This information is included in the model as dummy variables, with high school education or less as the base.

We have measures about students' living situation as well as the context of their Internet uses. Both the question about living at home with parents and the question about having access to the Internet at a friend's or family member's home are included as a dummy variable, where 1 signals affirmative and 0 stands for negative. Regarding Internet experiences, we have measures about hours spent online per week and the number of years a respondent has been an Internet user. Figures for both of these are logged in the analyses, given that an additional hour or year, respectively, likely has diminishing returns as the values increase. Also, following Hargittai (2005, 2009), we constructed our Internet skill measure from 27 items asking about the respondents' level of understanding of Internet-related terms. With the exclusion of missing values on these measures, the valid responses to these 5-point Likert-scale questions were averaged to generate a global measure of Internet skill level.

We constructed a five-category variable of SNS usage typology using a measure about experiences with such sites. The six SNSs included on the questionnaire were Bebo, Facebook, Friendster, MySpace, Orkut, and Xanga. To measure SNS usage, participants were asked to choose one of the following options: 'no, have never used it', 'tried it once, but have not used it since', 'yes, have tried it in the past, but do not use it nowadays', 'yes, currently use it sometimes', and 'yes, currently use it often'. We constructed our measures of use from answers to this question whereby we generated two binary usage measures. The first considers whether the respondent uses the site *sometimes* and the second accounts for using it *often*. We then employed these binary variables to construct measures of where users fall on the typology of SNS usage described in the previous section, that is, whether they are Non-Users, Dabblers, Samplers, Devotees, or Omnivores.

Dependent variables

To examine how people engage in social practices on SNSs, the survey listed various related activities (Table 1 lists the 13 options[2]). We asked respondents to 'check all that apply' in response to the following question: 'Which, if any, of the following activities do you *regularly* (weekly) perform on sites like Facebook and MySpace'?[3] We coded the SNS activity questions as dummy variables, in which 1 signals affirmative and 0 stands for not engaging in the activity. For

TABLE 1 Prevalence of various social practices on SNSs.

activity type	*percentage*
Stronger-tie activities	
Look at your friends' photo albums	81.6
Stay in touch with friends you rarely see in person	80.5
Stay in touch with friends you see a lot	72.3
Post photos of yourself	65.5
Send private messages or emails to a person within the site	65.5
Make plans with your friends	65.0
Join interest groups	48.1
Weaker-tie activities	
Look at strangers' photo albums	45.4
Meet new friends	40.7
Send a bulletin or a group message to a group of your friends on the network	35.9
Stay in touch with friends you've only met online	29.6
Flirt with people	26.5
Meet people to date	7.1

example, if a respondent uses Facebook to stay in touch with friends that she/he sees a lot, then she/he would indicate this by checking off that option on the list and getting a measure of 1 in the data set for it. In order to capture the different essence of the various social activities, we constructed two categories of such practices creating a 'stronger-tie activities' variable and a 'weaker-tie activities' variable.[4] The former is made up of seven practices with which respondents engage to be in touch with their existing friends and to pursue their current interests (see Table 1 for the list of items). The latter index variable summarizes engagement in six activities that support the expansion of respondents' personal networks to new ties such as meeting with new friends and being in touch with friends they have only met online. We conducted principle component analysis using varimax rotation with our 13 activity items and confirmed that all 13 items load on two different factors (the factor loadings were all higher than 0.4) that are in line with our theoretical intuition, suggesting that such a two-factor structure is acceptable. The detailed results of this analysis are available upon request.

We standardized the two aggregated SNS activity variables with the mean of 0 and standard deviation of 1, so that we could interpret and compare the estimates among different ordinary least squares (OLS) regression models. In addition, to those who reported not using any SNSs, we assigned a 0 as their default responses to the index items because, by definition, non-users do not engage in any activities on SNSs.

Regarding academic performance, we asked about grade point average (GPA) on an 8-point scale ranging from 'mostly A's' to 'mostly F's', with categories in

between such as 'A's and B's'. We reconstructed this item into a 5-point scale, with a value of 1 assigned for 'mostly C's and lower', 2 for 'B's and C's', 3 for 'mostly B's', 4 for 'A's and B's', and 5 for 'mostly A's' (mean = 3.37, SD = 1.24).

Methods of analysis

We first report descriptive statistics about variation in SNS usage (i.e. the aforementioned typology) and how this variation may differ by students' demographic background. Next, given that our dependent variables are all index variables, we employ OLS regression to examine whether SNS usage exhibits a systematic relationship with differences in the two types of social practices in which users engage as well as their GPA, while controlling for various factors.[5] Regarding the analysis of GPA, we first employ a regression model that looks only at demographic background (Model 1) and then add details about participants' Internet experiences and skill level in the second model. In the third model, we also include the dummy variables that signal SNS usage intensity. Finally, we incorporate the stronger-tie and weaker-tie activity variables in the fourth model. Six (or less than 1 per cent) of the 1060 respondents did not provide GPA information and have been excluded from the final analyses when examining that outcome.

Sample descriptives

The 1060 first-year students included in these analyses represent a diverse group of young adults.[6] Table 2 shows descriptive statistics about the group. Fifty-six per cent of the respondents are female and 44 per cent are male. Almost all are 18 or 19 years old, with a mean age of 18.4 and a median of 18. Fewer than half are non-Hispanic Whites. Slightly less than 8 per cent claim African or African American descent, almost 30 per cent are of Asian or Asian American ancestry, and just under one-fifth is of Hispanic origin. These students come from varied family backgrounds. Over a quarter of respondents have parents whose highest level of education is no more than a high school degree, with an additional 21 per cent whose parents do not have a college degree. Unlike many US colleges, over half of the students at this university commute from home and live with their parents (53.1 per cent).

Baseline Internet access and use statistics for the sample suggest that using the Internet is not a novel concept in most of these students' lives. On average, participants have access to the Internet at over six locations (SD = 2.1) and have been users for over 6 years (SD = 2.0). When asked how often they go online, the vast majority report doing so several times a day. They estimate spending 15.5 hours (SD = 10.0) visiting websites weekly (excluding email, chat, and voice services). While there is certainly variation in levels of access and use among participants, there are no basic barriers standing in the way of these

TABLE 2 Descriptive statistics about the sample.

	%	N
Men	44.2	469
Women	55.8	591
Age		
18	64.8	687
19	32.2	341
20–29	3.0	32
Race and ethnicity		
White, non-Hispanic	42.7	441
Hispanic	18.8	205
African American, non-Hispanic	7.7	80
Asian American, non-Hispanic	29.6	306
Native American, non-Hispanic	1.2	12
Parental education		
High school or less	26.4	279
Some college	20.1	212
College	34.4	364
Graduate degree	19.1	202
Lives with parents	53.1	559

young adults to accessing the Internet. Limits may be put on their uses due to other factors (e.g. the need to share resources at home, limited hours of access due to employment, commuting, or parental controls), but they all have basic access. This suggests that traditional concerns about the so-called digital divide do not apply to these students regarding basic availability of the Internet. Thus, looking at such a wired group of users allows us to hold basic access to digital media constant and focuses on differences in details of use instead.

Variation in SNS usage

As reported in earlier work based on this data set (Hargittai 2007), overall, 88 per cent of the respondents in this sample are SNS users. Facebook is the most popular service among these students (78.8 per cent), followed by MySpace (54.6 per cent). Almost two-thirds of the overall sample uses Facebook frequently, but just over one-third uses MySpace often. The other four sites are considerably less popular among these students.

With respect to the prevalence of each type of SNS use among our respondents, as reported above, about 12 per cent ($N = 130$) of our sample reported not using any SNSs and are thus categorized as Non-Users. Dabblers, those who

use only one SNS and do so only sometimes, make up just under a tenth of the sample (9.2 per cent). The smallest category in the group is Samplers with less than 5 per cent (4.4 per cent) of the students classified as such. Devotees – students who currently use only one of the six sites, but do so often – make up almost a third of the sample (32.9 per cent). Finally, Omnivores, who visit more than one of these six sites with at least one of them visited often, constitute by far the biggest category with almost half of our respondents (45.3 per cent) reporting such behaviour.

Table 3 presents descriptive statistics by user background for SNS usage, in general, and for the various categories of users, in particular (Dabblers, Samplers, Devotees, and Omnivores). While women are more likely to use SNSs than men, once we break down usage by frequency and diversity of use, women are only more likely to be Omnivores than are men as there is no gender difference for the categories of Dabblers, Samplers, and Devotees. There is little difference among students by racial and ethnic background regarding SNS usage typology. We find that non-Hispanic African American students are significantly less likely to be Dabblers and non-Hispanic Asian American

TABLE 3 Percentage of different groups of people who use SNSs at all and by SNS level of engagement.

	Any SNS use	*Dabbler*	*Sampler*	*Devotee*	*Omnivore*
Gender					
Male	86	10.0	4.7	29.2	41.2
Female	90*	8.5	4.2	28.3	48.2*
Race and ethnicity					
White, non-Hispanic	89	9.5	3.6	27.0	47.6
Hispanic	86	11.7	5.4	25.4	43.9
African American, non-Hispanic	84	3.8*	3.8	26.3	50.0
Asian American, non-Hispanic	89	8.2	5.6	33.7*	41.2
Native American, non-Hispanic	83	8.3	0.0	25.0	50.0
Parental education					
High school or less	86	11.5	5.4	25.8	43.0
Some college	85	7.6	7.1*	30.2	40.1
College	90*	6.9*	3.0	29.1	50.8*
Graduate degree	88	11.9	3.0	30.2	42.6

Note: The figures are based on 1056 respondents due to missing data for four participants that make it impossible to classify their level of SNS engagement. The figures in the columns of Dabbler, Sampler, Devotee, and Omnivore are the breakdown of the percentage of any SNS use and thus do not add up to 100%.

χ^2 test for statistically significant difference between groups. *$p < 0.1$.

students are significantly more likely to be Devotees than their counterparts. Regarding parental education, the most pronounced finding is that students who have at least one parent with a college education are significantly more likely to use SNSs than others. If we look at usage intensity, these students are significantly less likely to be Dabblers as well as more likely to be Omnivores. In addition, students whose parents have some college education are significantly more likely to be Samplers than others.

Explaining differences in users' social practices on SNSs

In this section, we first present the *t*-test statistics by user background for SNS users' social practices on such sites (Table 4) and then look at the relationship of various factors and the SNS activities using OLS regression (Table 5). The figures listed in Table 4 represent the average number (i.e. not standardized) stronger-tie and weaker-tie activities in which respondents engage. The first row in Table 4 illustrates that, on average, SNS users exercise five different types of stronger-tie activities and two types of weaker-tie activities. As the next two rows in Table 4 demonstrate, there are notable gender differences in these SNS activities. On the one hand, women engage in more types of stronger-tie activities than men. On the other hand, female students engage in fewer types of weaker-tie activities than their male counterparts.

The figures in the middle section of Table 4 suggest that there is little variation among students of different racial and ethnic backgrounds when it comes to stronger-tie activities. However, we do observe some differences in the domain of weaker-tie activities, whereby Hispanic students are somewhat more likely and non-Hispanic Asian and Asian American students are less likely to exercise weaker-tie activities on SNSs than others. Regarding parental education, only the students whose parents have a college degree are more likely to engage in stronger-tie activities than others in the sample, while we observe no difference by this background variable regarding weaker-tie activities.

As the figures in the bottom section (i.e. SNS user type) of Table 4 suggest, there is a statistically significant relationship between SNS usage intensity and types of social activities in which users engage on such sites. Perhaps, not surprisingly, while Dabblers are significantly less likely to exercise both stronger-tie and weaker-tie activities than others, Omnivores are significantly more likely to engage in both types of activities on SNSs than their counterparts. However, there is no difference in the types of activities in which Samplers and others engage, suggesting that usage intensity is not associated with the various types of social practices for Samplers. In addition, Devotees are only significantly more likely to exercise stronger-tie activities than other types of SNS users. This may be explained by the idea that Devotees are likely loyal to one particular site precisely because they use such a site to stay in touch with people in their

TABLE 4 Mean of two types of social practices on SNSs by different groups of users.

	stronger-tie activities (range: 0–7)[a]	*weaker-tie activities (range: 0–6)*[a]
Total	4.79	1.85
Gender		
Male	4.51	2.02
Female	4.99**	1.71**
Race and ethnicity		
White, non-Hispanic (NH)	4.86	1.89
Hispanic	4.71	2.08*
African American, NH	4.90	2.15
Asian American, NH	4.69	1.57**
Native American, NH	4.75	2.08
Parental education		
High school or less	4.61	1.87
Some college	4.64	1.91
College	4.99*	1.86
Graduate degree	4.81	1.76
SNS user type		
Dabbler	3.21***	0.77***
Sampler	4.46	1.53
Devotee	5.56***	1.96
Omnivore	5.93***	2.53***

Note: [a]Values of the SNS activity variables are unstandardized.

t-test for statistical significance of mean difference between groups. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

existing networks rather than for making new acquaintances for which the use of multiple sites may be more preferable or beneficial.

Next, we turn to examining whether there is a systematic relationship between various factors and social practices performed on SNSs among users in our sample. Given the discrepancy in the number of items being constructed for the two types of social practices, we model the standardized versions of these variables as the dependent variables with OLS regression for the purpose of clarity. The estimates in Table 5 refer to the changes in a standard deviation unit of the SNS activity variable, given one unit change in the explanatory factors in the model. For example, looking on the row labelled 'Female' in Table 5, the estimate in the column for stronger-tie activities is 0.11. This means that women are more likely to engage in such practices

TABLE 5 OLS regression on types of SNS social practices.

	stronger-tie activities[a]	*weaker-tie activities*[a]
Female	0.11 (0.04)**	−0.22 (0.06)**
Race/ethnicity (as compared to Whites, non-Hispanic)		
Hispanic	0.06 (0.05)	0.20 (0.08)*
African American, non-Hispanic	0.06 (0.07)	0.221 (0.11)*
Asian American, non-Hispanic	−0.06 (0.04)	−0.19 (0.06)**
Parental education (as compared to high school or less)		
Some college	−0.03 (0.05)	0.02 (0.08)
College degree	−0.01 (0.05)	−0.07 (0.07)
Graduate degree	0.00 (0.06)	−0.11 (0.09)
Living with parents	−0.11 (0.04)**	−0.00 (0.06)
Have Internet access at friends'/family's home	0.06 (0.06)	−0.01 (0.09)
Years online (logged)	0.04 (0.06)	0.11 (0.10)
Hours on web/week (logged)	0.05 (0.03)	0.18 (0.04)***
Digital skills (standardized)	0.02 (0.02)	0.05 (0.03)
SNS typology (as compared to Non-User[b])		
Dabbler	1.36 (0.08)***	0.50 (0.12)***
Sampler	1.91 (0.10)***	0.84 (0.15)***
Devotee	2.33 (0.06)***	1.11 (0.09)***
Omnivore	2.48 (0.06)***	1.43 (0.09)***
Intercept	−2.27 (0.16)***	−1.56 (0.25)*
Adj. R^2	0.701	0.287
N	1008	1008

Note: [a]Values of the two SNS activity variables are standardized.

[b]Non-users are included in the analysis as their engagement level is 0 by definition.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

than men. Likewise, if we look at the next column, the estimate for women suggests that they are less likely (−0.22) to engage in weaker-tie activities than men.

As the following few rows in Table 5 indicate, students with different racial and ethnic backgrounds are associated with different levels of weaker-tie activity engagement. Hispanic and African American students are more likely to meet new friends, be in touch with friends they have met only online, and look at strangers' photos than White students. In contrast, Asian students are less likely to engage in weaker-tie activities than their counterparts. As for parental

education, the results suggest no systematic relationship with engaging in social practices on SNSs.

Regarding Internet use context, experience, and skills, respondents who are living with their parents are less likely to interact with their existing friends on SNSs, and those who spend longer time online weekly are more likely to engage in weaker-tie activities. With respect to the intensity of SNS usage, the estimates of the typology variables show that, perhaps not surprisingly, the more committed SNS users are more likely to engage in social practices on such sites. Since Non-Users, by definition, are not engaging in any social practices on such sites, all types of SNS users take part in more activities than they do (for stronger-tie activities, from the lowest 1.36 for Dabblers to the highest 2.48 for Omnivores). More specifically, if we look at the differences between the four types of SNS users, Omnivores are more likely to perform stronger-tie activities than Devotees as well as Samplers, and Dabblers are the least likely to do so among them. The same pattern holds true for weaker-tie activities.

Relationship between SNS use intensity and academic performance

To investigate the implications of SNS usage further, in this section, we shift our focus to the current debate concerning whether there is a systematic relationship between SNS use intensity and academic performance among the students in our sample. We summarize the set of OLS regressions modelling the GPA variable in Table 6. In the baseline model, we find that women are more likely to have higher grades than men, while non-Hispanic African American students are more likely to have lower grades than White students. Respondents whose parents have college and graduate degrees are more likely to have better grades than those whose parental education level is only high school or lower.

In Model 2, we include information about Internet use context, online experiences, and web-use skills. None of them demonstrates a systematic relationship with respondents' grade point average. Next, we add information about SNS usage type in Model 3 and finally include the two activity engagement variables in Model 4. The most prevalent findings among these three models (Models 2–4) are the persisting differences between respondents with different demographic backgrounds. Gender and African American background are consistently related to GPA among our sample participants. However, once we control for general Internet and specific SNS experiences, parental education does not show statistically significant differences in Models 2–4.

Regarding our SNS usage measures, we find no significant differences in GPA by SNS user typology (see Model 3), nor types of social activities performed on these sites. This is understandable as social practices could both support (e.g. offer help with homework) and detract from (e.g. offer alternatives to focusing

TABLE 6 OLS regression on grade point average.

	Grades			
	Model 1	*Model 2*	*Model 3*	*Model 4*
Female	0.20 (0.08)**	0.24 (0.09)**	0.26 (0.09)**	0.27 (0.09)*
Race/ethnicity (as compared to Whites, non-Hispanic)				
Hispanic	−0.22 (0.11)	−0.19 (0.11)	−0.19 (0.11)	−0.19 (0.11)
African American, NH	−0.69 (0.15)***	−0.66 (0.16)***	−0.66 (0.16)**	−0.64 (0.16)*
Asian American, NH	−0.00 (0.09)	0.01 (0.09)	−0.00 (0.09)	−0.01 (0.09)
Parental education (as compared to high school or less)				
Some college	0.07 (0.12)	0.05 (0.12)	0.04 (0.12)	0.04 (0.12)
College degree	0.20 (0.10)*	0.19 (0.11)	0.20 (0.11)	0.20 (0.11)
Graduate degree	0.29 (0.12)*	0.24 (0.13)	0.23 (0.13)	0.22 (0.13)
Living with parents	–	−0.04 (0.08)	−0.06 (0.08)	−0.06 (0.08)
Have Internet access at friends'/family's home	–	0.11 (0.12)	0.13 (0.13)	0.14 (0.13)
Years online (logged)	–	−0.16 (0.14)	−0.16 (0.14)	−0.14 (0.14)
Hours on web/week (logged)	–	−0.09 (0.06)	−0.07 (0.06)	−0.05 (0.06)
Digital skills (standardized)	–	0.08 (0.05)	0.10 (0.05)*	−0.10 (0.05)
SNS typology (as compared to Non-User)				
Dabbler	–	–	0.03 (0.17)	0.20 (0.20)
Sampler	–	–	−0.24 (0.21)	−0.05 (0.25)
Devotee	–	–	−0.13 (0.13)	0.12 (0.21)
Omnivore	–	–	−0.23 (0.13)	−0.05 (0.22)
Stronger-tie activity (standardized)	–	–	–	−0.08 (0.08)
Weaker-tie activity (standardized)	–	–	–	−0.06 (0.05)
Intercept	3.22 (0.10)***	3.69 (0.34)***	3.76 (0.36)***	3.46 (0.39)***
Adj. R^2	0.03	0.03	0.03	0.04
N	1027	1009	1005	1003

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

on school obligations) academic work, and thus their effects could cancel each other out. In contrast to uses specific to SNSs, we do find a positive association between Internet skills and academic achievement even when controlling for various demographic characteristics. The positive relationship between web-use skills and GPA may illustrate that students who have better online skills can draw on their Internet savvy to aid in their schoolwork. But engaging more intensely with SNSs, in particular, shows no relationship to our outcome variable of academic achievement.

Conclusion

Using a unique data set with rarely available details about respondents' engagement with SNSs, this study has looked at how different levels of SNS use intensity may be associated with varying types of activities when users spend time on such sites. We find that the more committed users of such sites engage in more social activities on SNSs than those who spend less time on them and only use one such site. This finding holds in the realm of both stronger-tie and weaker-tie activities.

Our analyses also suggest that there are considerable gender differences in the level of engagement with SNS social practices. On the one hand, women perform more stronger-tie activities such as keeping in touch with existing friends. On the other hand, they exercise fewer weaker-tie activities such as meeting new people online. These findings are consistent with earlier work on gender differences in the communicative uses of ICTs (e.g. Weiser 2000; Boneva *et al.* 2001). Like others, we find a similar pattern of female students using SNSs more than men to maintain their existing social relationships.

Like any study, a few caveats are in order. Given that we only look at behaviour that assists interpersonal interactions, we are unable to draw conclusions about whether level of usage intensity may be related to other behaviours such as the practices that facilitate identity construction or impression management. In a similar vein, given the cross-sectional nature of our data, the current study is not able to explore the causality between the level of SNS engagement and the various activities in which users participate on such sites as a result of time spent on them. Another limitation of our current project is that while we stress the importance of examining whether different levels of usage intensity may explain differences in performing stronger-tie and weaker-tie activities, we are unable to consider whether social practices on SNSs may represent varying motivations of using such web services in the first place. When suitable data become available, it would be fruitful to see these limitations addressed by future work in this area.

Examining the potential implications of how people spend their time on SNSs, we find that neither SNS usage intensity nor social practices performed on these sites exhibit a systematic relationship with academic performance.

While users can engage in lots of potentially distracting activities on SNSs, these sites and the connections people make and maintain on them may also facilitate efforts spent on school work, which may explain a lack of connection between these variables. Our finding provides another piece of empirical evidence challenging the concerns about the negative academic implications of SNSs (Karpinski & Duberstein 2009).

In addition to its substantive contributions, this study also has methodological implications. As an empirical application, our current project illustrates that taking into account – as per our proposed typology – SNS usage intensity can provide useful insights for understanding SNS practices better. Accordingly, it may be helpful to incorporate this type of a more comprehensive framework that accounts for use intensity when studying the phenomenon of SNS usage and its social implications.

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Notes

1 The Principle Investigator of this project is not now nor has ever been affiliated with this university in any way other than in the context of this study. Focus on this campus is not due to convenience; rather, it is the result of careful consideration about what type of student population would be most helpful in addressing questions of interest in the overall research project about differentiated Internet uses by user background.

2 The activities were listed in a different order than presented in Table 1 since this table is organized according to the activity categorization we developed based on analyses described later in this section.

3 While some survey traditions would suggest that it is a bad idea to mention specifics in such a question as that may prompt people, our pre-tests indicated that not mentioning examples such as Facebook would result in Facebook users often skipping this question altogether not realizing that it is an 'SNS', a term used more in the academic community at the time than among youth to refer to these services.

4 Note that the definitions of 'weaker-tie activities' versus 'stronger-tie activities' are not mutually exclusive, given that users may be 'friended' with close friends and casual acquaintances on SNSs, and more importantly, users can perform most of the social practices surveyed with both types of contacts. We contrast these two types of practices to distinguish the relatively different social distance in the context of the interactions.

5 In addition to running OLS regressions, we also ran ordinal logistic regression models on GPA and found that the results are robust. As such, we report the results of OLS regressions on GPA for ease of interpretation. We checked and there are no concerns of multi-collinearity to suggest that these analyses would not be appropriate. (The correlation matrix is available from the authors upon request.)

6 The survey included a question verifying students' attentiveness to the questionnaire. A small portion of students (3.4 per cent) was identified as not paying attention to question wording, suggesting that they were checking off responses randomly instead of replying to the substance of the questions. These students were excluded from the data and analyses presented here so as to minimize errors introduced through such respondents.

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