DIGITAL DIVIDES AND SOCIAL NETWORK SITES: WHICH STUDENTS PARTICIPATE IN SOCIAL MEDIA?

JUNE AHN
University of Maryland

ABSTRACT

Social network sites (SNSs) like Myspace and Facebook are now popular online communities with large teenage user populations. Teens use these technologies to interact, play, explore, and learn in significant ways. As scholars become interested in studying these new online communities, I contribute to the emerging conversation by re-examining questions about the digital divide. This study utilizes a nationally representative survey from the Pew Internet & American Life Project to investigate whether access and participation divides persist in teens' use of SNSs. I use binary logistic regression to examine the relationship between social, demographic, and technology variables with youth participation in social network sites. The results suggest that traditional divide indicators such as Internet access or parent education are not significant predictors of SNS use. Youth appear to find a way to get connected. Deeper understanding of the social and cultural factors related to participation in social technologies is needed for youth populations.

Since the release of the first social network site (SNS) in 1997, the growth of these online communities has skyrocketed. Familiar examples of SNSs include Facebook and MySpace, but there are hundreds of services that cater to a variety of populations (boyd & Ellison, 2007). Social network sites now mediate a vast array of communication between adolescents. Research on SNSs offers a ripe

arena to explore how youth work, play, and learn in these online environments. The scholarly literature in this area is nascent, but swiftly accumulating with descriptive evidence of innovative learning and communication among youth (i.e., Ito, Baumer, Bittanti, boyd, Cody, Herr-Stephenson, et al., 2010).

The emerging picture of youth and social network sites suggests that these online communities mediate a wide variety of peer social practices and learning (Ito et al., 2009; Jenkins, 2006). Teenage users of social network sites appear to be adept in a variety of other technologies such as blogging and multimedia production (Lenhart, Madden, Macgill, & Smith, 2007). A great deal of learning happens between youth in these online communities. Teens negotiate identity, learn social skills, and become subject matter experts through peer teaching in topics that pique their interests (boyd, 2006, 2007, 2009; Horst, Herr-Stephenson, & Robinson, 2009). Initial studies of Facebook usage among college students suggest that individuals also develop more social capital in these online communities (Ellison, Steinfield, & Lampe, 2007). Youth participation in social network communities may signal the development of important technical skills and social development.

Not surprisingly, education scholars are now turning their attention to the learning implications of social network sites (Greenhow & Robelia, 2009; Greenhow, Robelia, & Hughes, 2009). As researchers begin to explore how youth use social media to learn in a networked environment, questions about access become ever more critical. The term digital divide describes the concern about unequal access and participation in new technologies (Norris, 2001). Youth that are systematically excluded from social network sites may also lose out on opportunities to develop technical skills, social interactions, and relationship networks. For example, Seiter (2008) states that teens on SNSs can leverage their social networks for their benefit; well "at least with those peers who can afford to keep up with the costly requirements of these technologies" (p. 39). Thus, researchers of media and education must still consider the "fundamental inequalities in young people's access to new media technologies and the opportunities for participation they represent" (Jenkins, 2006, p. 12). Such theoretical discussion gives rise to empirical questions such as:

1. who is using these technologies? and
2. is there unequal access to these technologies or new digital divides of participation?

In this article, I use a nationally representative survey of teenagers in the United States to examine SNS participation (Pew Internet & American Life Project, n.d.). In the following sections, I first outline how the term *digital divide* has been used in the research literature of the past decade. The discussion highlights how scholars have moved from questions of mere access to computers to current questions of social participation in technologies like SNSs. Second,

I test whether traditional predictors of the divide (such as race, education, technology literacy, etc.) are also factors of students' involvement in social network sites. Logistic regression is used to examine whether demographic, socioeconomic, and student-level variables predict students' use of SNSs. The results offer surprising insight into the social factors that relate to young people's use of SNSs and question some of the long-standing digital divide discussions surrounding race, education, and access. This study contributes to the evolving discussion of digital divides by:

1. considering theories about the digital divide among youth;
2. applying them to a new online phenomena: social network sites; and
3. extending initial research in the same vein that has examined college students (see Hargittai, 2007), to now also consider teenage youth.

APPLYING DIGITAL DIVIDE RESEARCH
TO YOUTH AND SNSs

Scholars loosely use the term *digital divide* to describe the gaps in access to technology and technology-related activities within a population (Norris, 2001). Researchers typically examine the digital divide based on factors such as gender, race, or socioeconomic status. For example, an early U.S. Department of Commerce (2000) publication, *Falling through the Net*, found disparities in computer access across a variety of variables. In the year 2000, 55.7% of White households and 65.6% of Asian and Pacific Islander households owned a personal computer. Only 33.7% of Hispanic and 32.6% of Black households owned a computer.

The disparities of computer access based on income level were even more striking nearly a decade ago. Approximately 86.3% of households with incomes of $75,000 or more reported having access to computers while only 19.2% of households making less than $15,000 had access to computers. Finally, *Falling through the Net* highlighted the inequalities based on educational level: 64% of households where a member held a bachelor's degree subscribed to Internet services, compared to 29.9% of high school graduates and 11.7% of those who did not complete high school.

Such initial reports established the understanding that access to technology was highly unequal. Ethnic minority groups were less likely to use technology. Those from lower socioeconomic backgrounds also had fewer opportunities to use media tools. Early studies of computer usage also found that males were more likely than females to use technology (Volman & van Eck, 2001). As technology becomes a more integral part of society, the question of whether patterns of inequality continue to exist remains a critical question.

What Factors Might Relate to Teenagers' Use of Social Network Sites?

Previous discussions of the digital divide highlight disparities in technology access and participation along key demographic variables. Education level, computer skills, racial and ethnic grouping, gender, and age were significant lines through which to view the digital divide (i.e., Cheong, 2008, Hargittai, 2004; Livingstone & Helsper, 2007). Thus, analyses of new technologies and media usage should control for these variables. However, computer ownership and Internet access have spread rapidly in the last decade (Kennedy, Smith, Wells, & Wellman, 2008; Lenhart et al., 2007). With such wide coverage, there are questions to whether *access* divides along demographic variables remain significant indicators. Emerging evidence from researchers of social network sites suggest that demographic background is not a significant predictor of access to these online communities.

In her ethnographic research on social network sites, boyd (2007) states that, "Poor urban black teens appear to be just as likely to join the site as white teens from wealthier backgrounds . . ." (p. 121). Hargittai (2007) also examined a sample of college students and found that age, race, and parent's education level did not have a significant relationship to whether they used an SNS. Teenagers also exhibit different behaviors online depending on age. While no studies focus on the influence of age on young people's participation in social network sites, numerous studies highlight how young people behave differently online. For example, Peter, Valkenburg, and Schouten (2006) found that younger, less experienced adolescents were more prone to talk to strangers online. Older youth may also be more likely to participate in social network sites (Lenhart et al., 2007). This pattern could be the result of many factors. Perhaps younger youth have more restrictions and parental supervision concerning their online activity. Older youth may have more freedom, and technical literacy, to explore new media tools.

Both boyd (2007) and Hargittai (2007) assert that gender remains a significant variable with which to see access divides in SNSs. Recent surveys find that girls are significantly more likely to participate in these social communities (Lenhart et al., 2007). In addition, emerging studies among adult populations find that females are more likely to use SNSs than their male peers (i.e., Hargittai, 2007; Schrock, 2009, Thelwall, 2008). While early Internet studies found users to be predominantly male (Wellman, Salaff, Dimitrova, Garton, Gulia, Haythornthwaite, et al., 1996), recent studies suggest that females are more likely to participate in social media. The history of digital divide research, and most recently studies on participation in SNSs, offer the foundation for a set of hypotheses concerning *demographic variables*:

H1: Given teenagers' widespread access to technology, demographic variables such as race and parental education level will no longer have a significant relationship to usage of SNSs.

H2: Gender and age will still have a significant relationship to social network site use.

Beyond demographic indicators, subtle social and cultural contexts may play a larger role in young people's media practices. For instance, socialization in families may be a significant factor in children's access to computers and comfort with using technology. Recent surveys find that technology is becoming a vital part of family life (Kennedy et al., 2008). Family members who actively utilize technology in daily life may also influence increased participation in digital media by teens. In addition, the type of Internet access families have may also be a factor influencing students' use of social network sites. In 2008, two-thirds of households reported having high-speed, broadband Internet access. Thus, a significant portion of households still use dial-up connections or have no connection. Whether students access the Internet from home, school, or libraries may affect their participation in online communities such as SNSs. Programs such as E-rate offer discounts to public schools for network infrastructure and Internet connections (Federal Communications Commission, n.d.). These programs drastically increased Internet access in schools. In 1994, 3% of classrooms had Internet access, while in 2005, 94% of public school classrooms were connected (National Center for Education Statistics, 2006).

Some students may primarily access the Internet at school rather than at home. Schools often have policy restrictions on Internet usage, block websites, or restrict access time for non-instructional purposes. Such situations might limit students' participation in social network sites. For example, boyd (2007) observes that,

> Those who only access their accounts in schools use it primarily as an asynchronous communication tool, while those with continuous nighttime access at home spend more time surfing the network, modifying their profile, collecting friends and talking to strangers. When it comes to social network sites, there appears to be a far greater participatory divide than an access divide. (p. 121)

Where students primarily access the Internet could impact their participation in social network sites. These discussions outline a set of hypotheses concerning *types of access*:

H3: Parental use of the Internet is positively related to teenagers' use of social network sites.

H4: Teenagers with broadband Internet access at home (versus dial-up or no connections) are more likely to be SNS users.

H5: Teenagers who access the Internet primarily from home (versus any other location) will be more likely to use social network sites.

These factors then contribute to the evolution of digital divide debates by examining subtle variations in access and participation.

In this study, I also consider a set of individual level factors. Teens that are social network site users also tend to be super communicators (Lenhart et al., 2007). They are apt to use a variety of other technologies to communicate frequently with their friends. Thus, one would expect a significant relationship between a teenager's intensity of Internet use and whether they also participate in online social networking.

H6: As teenagers use the Internet and related technologies more frequently, they are more likely to be users of social network sites.

Initial research on youth and digital media suggest that teenagers use social network sites mainly to keep in touch with their friends (boyd, 2007; Ito et al., 2009; Lenhart et al., 2007). Thus, one might also expect that those teenagers who communicate with their friends more intensely would also be social network site users. Their offline relationships and activities will continue online as well. These conceptual discussions motivate hypotheses about the individual factors that teens bring to their SNS membership.

H7: Teens who communicate more frequently with friends and family using technology will be more likely to also use social network sites.

These sets of hypotheses are posited by scholars in a variety of fields such as Education, Communication, and Media Studies. Taken together, they move one's conceptualization of the digital divide away from simplistic questions about access to hardware or software. Instead, they are finer grained reflections on the participation divide.

METHOD

Sample and Data

This study utilizes a survey conducted by the Pew Internet & American Life (PIAL) Project (n.d.). The PIAL conducts regular surveys of various topics focusing on trends of Internet and technology usage in the United States. The data for this study comes from the *Teens and Writing* survey that was conducted in 2007. The intent of this particular survey was to gather evidence about teenagers' writing habits in relation to their use of various Internet and social media. From September to November 2007, phone interviews were conducted from a nationally representative sample of 700 teenagers and their parents. The survey covered an array of demographic and access questions, but also gathered detailed data about how teens write in their daily lives and what technologies they utilize. One subset of questions considered how teens use social network sites, and is particularly salient for this analysis.

Descriptive statistics of the sample are provided in Table 1. In all analyses, this study makes use of the sampling weights provided by the PIAL (see Methodology in Lenhart, Arafeh, Smith, & Macgill, 2008). The sample weights correct for oversampling of particular segments of the population and adjust the frequency tables to better match the population sample of the U.S. Census. After applying the weight, the total sample for this study is 4,855 ($n = 4,855$).

Analysis

In this study, the dependent variable is binary: whether an individual has a social network profile or not. Ordinary least squares (OLS) regression does not provide efficient estimates in this case. Thus, I utilize a binary logistic regression to predict whether digital divide indicators are related to teenage use of SNSs. Social network site usage is determined by: a vector of demographic variables (x'A) that includes Race, Gender, Age, and Parental Education; Access variables (y'B) that include whether the parent is an Internet user, the type of Internet access available at home, and where the teenager primarily accesses the Internet; and finally Communication variables (z'C) that include whether students use a variety of other technologies (i.e., cell phones, blogs, personal websites, etc.), and whether students communicate everyday with a variety of technologies (i.e., cell phones, instant messaging, telephone, etc.). The resulting logistic regression model is:

$$\ln(p) = \alpha + x'A + y'B + z'C + \varepsilon$$

Many of the variables in the dataset are categorical and were dummy coded with particular reference groups. I note these variables to aid in the subsequent interpretation of the findings. The reference groups for the variables are as follows: Gender reference is *female*; Parent's Education is *less than high school*; Parental Internet User reference is *no*; Home modem is *dial-up*; and Primary Internet Access is *home*. The race variable is also noted. The *Teens and Writing Survey* structured the race question to capture the diversity inherent in the Hispanic population. Thus, race is coded into categories such as White or White-Hispanic, Black or Black-Hispanic, Hispanic, and Other-Hispanic which encompasses the Asian-Pacific Islander, multi-racial, and other categories. White or White-Hispanic is the reference category. The variables were entered using a hierarchical strategy (see Table 2). In model 1, I enter the demographic variables (x'A). The access variables (y'B) are added in model 2. Finally, I add the communication variables (z'C) to examine the full model.

FINDINGS

In Table 3, I present some descriptive cross-tabulations of the digital divide indicators and the percentage of youth who use SNSs. The results offer some

Table 1. Descriptive Statistics of Key Variables

	Mean[a]	Frequency	Percentage	Range
Teenager's gender	—	—	—	0–1
Female	—	2365	48.7%	—
Male	—	2490	51.3%	—
Race/Ethnicity	—	—	—	—
White or White-Hispanic	—	3223	66.4%	—
Black or Black-Hispanic	—	581	12.0%	0–1
Hispanic	—	784	16.1%	0–1
Asian, Other, and Other-Hispanic	—	262	5.4%	0–1
Missing	—	5	0.1%	—
Parent's education	—	—	—	—
Less than high school	—	570	11.8%	—
High school	—	1650	34.0%	0–1
Some college	—	1160	23.9%	0–1
College or over	—	1470	30.3%	0–1
Missing	—	5	0.1%	—
Parent uses Internet	—	—	—	0–1
No	—	649	13.4%	—
Yes	—	4206	86.6%	—
Teenager's age	14.52 (1.703)	—	—	12–17
Home Internet connection	—	—	—	—
Dial-up	—	1060	21.8%	—
Broadband	—	3227	66.5%	0–1
No computer or Internet connection	—	496	10.2%	0–1
Missing	—	72	1.5%	—
Primary Internet access	—	—	—	—
Home	—	3318	68.3%	—
School	—	631	13.0%	0–1
Other	—	274	5.7%	0–1
Missing	—	632	13.0%	—
Number technologies teen uses	1.68 (0.99)	—	—	0–4
Teen communicates everyday with various technologies	1.90 (1.59)	—	—	0–6

[a]Standard deviations for means in parentheses.

Table 2. Results of Binary Logistic Model on Probability
of Having a SNS Profile

	Model 1[a]	Model 2[a]	Model 3[a]	Odds ratios for Model 3
Constant	−6.822** (.345)	−7.330** (.385)	−7.264** (.409)	0.001
Race				
Black or Black-Hispanic	.370** (.117)	.460* (.122)	.353** (.130)	1.423
Hispanic	−.150 (.109)	−.242* (.113)	−.272* (.118)	0.762
Other	−.657** (.155)	−.752** (.160)	−.880** (.169)	0.415
Gender	−.855** (0.73)	−.857** (.075)	−.555** (.080)	0.574
Age	.522** (.023)	.567** (.024)	.454** (.025)	1.575
Parent education				
High school	.348** (.129)	.158 (.137)	.328* (.146)	1.388
Some college	.304* (.133)	.043 (.144)	.011 (.153)	1.011
College or graduate degree	.234 (.130)	−.090 (.143)	.120 (.153)	1.127
Parent is Internet user	—	.052 (.141)	−.024 (.152)	0.976
Youth has broadband Internet	—	.216* (.091)	.024 (.098)	1.024
Youth has no Internet	—	−1.235** (.191)	−1.199** (.206)	0.301
Primary Internet access is at school	—	−.404** (.112)	−.119 (.119)	0.888
Primary Internet access is not school or home	—	.703** (.175)	.824** (.189)	2.280
Youth uses other technologies	—	—	.481** (.044)	1.618
Youth uses other technologies to communicate with peers	—	—	.359** (.028)	1.432

[a]Standard errors in parentheses.
*$p < .05$, **$p < .01$.

Table 3. Cross Tabulations of Youth SNS Usage

	Percent of youth with a SNS profile
White/White-Hispanic	60.0%
Black/Black-Hispanic	60.4%
Hispanic	53.6%
Asian and other	38.9%
Female	66.5%
Male	49.8%
Ages 12-14	38.3%
Ages 15-17	77.3%
Parent education	
Less than high school	60.8%
High school	54.2%
Some college	59.9%
College or above	59.5%
Internet	
Dial-up	59.2%
Broadband	59.8%
No computer or Internet	67.7%
Primary Internet access	
Home	63.5%
School	51.0%
Someplace else	60.9%

intriguing evidence that the digital divide is beginning to wane, at least when it comes to youth participation in social network sites. The term *beginning* is key because while some demographic indicators exhibit equal access, others still describe gaps. For example, 60% of both White and Black youth use SNSs. However, the rates for Hispanic, Asian, and other ethnic minorities remain lower in this dataset. Female teenagers are more likely to be SNS users than their male peers. Older teens are SNS users at higher rates than younger teens. Most interesting is the relationship between the type of Internet access and SNS participation. Youth with dial-up and broadband access use SNSs at equal rates (approximately 60%), but nearly 68% of youth with no computer or Internet access use social network sites. These descriptive results fly against what one would expect from a digital divide perspective.

Table 2 presents the results of the logistic regression analysis. Hypothesis 1 suggested that race and parental education would no longer be significant predictors of SNS participation. The data offer mixed support of this hypothesis. College educated parents did not have a statistically significant relationship to their child's use of social network sites. However, parents with a high school degree had a positive relationship with the probability that their child used SNS (β = .328, ρ < .05). Regression coefficients in a logistic model do not correspond directly to the outcome variable, thus the results of model 3 were also converted to odds ratios for simpler interpretation. The odds ratio for parents with a high school degree is 1.39. This ratio indicates that youth whose parents had a high school degree were 39% more likely to be SNS users compared to the reference group (youth whose parents did not have a high school degree). Overall, the mixed results lend support to the notion that socioeconomic indicators, such as parent education level, may not be major predictors of participation divides among youth.

Although parent education did not largely define any gaps in SNS use, race was still a significant predictor for teens' participation in social network sites. However, the results, at times, go against the conventional wisdom around race and digital divides. For example, Black and Black-Hispanic teens were more likely than White and White-Hispanic teens (the reference group) to be social network site users (odds ratio = 1.42, ρ < .01). Black and Black-Hispanic teens were 42% more likely to be SNS users compared to their White peers. boyd's (2007) assertion that Black teens are just as likely as White teens to use social networking sites holds true in this dataset.

Youth of Hispanic and other ethnic backgrounds were significantly less likely to be on social network sites. For example, the odds ratio for Hispanic youth was 0.76, which suggests that these teenagers were 24% less likely to be SNS users compared to their White peers. The mixed findings relating demographic patterns to SNS participation suggest that some digital divides may still exist, but the relationships are less clear than found in Internet studies of the past. Differences exist across race and socioeconomic status, but these variations are not stereotypical.

Hypothesis 2 stated that gender and age would have a significant relationship to SNS usage amongst youth. The findings clearly support this hypothesis. Male teenagers were approximately 43% *less likely* to use social network sites than the female reference group (odds ratio = 0.57, ρ < .01). In addition to gender, older teens were more likely to use SNSs than their younger peers (odds ratio = 1.58, ρ < .01). Each year of age increased the odds of using social network sites by 58%. Such patterns might be explained by parental influences on younger teens. Perhaps older teenagers have less regulations or rules concerning participation in social network sites.

Parental use of the Internet was not significantly related to young people's use of SNSs (hypothesis 3). In addition, having broadband Internet at home did not significantly influence whether a teenager used SNSs (hypothesis 4). An

unsurprising, but still noteworthy finding is that teens who do not own a computer or are not connected to the Internet were nearly 70% less likely to participate in online social networks (odds ratio = 0.30, $\rho < .01$). Finally, there appears to be no difference in SNS usage for teens that primarily access the Internet from home or from school (hypothesis 5). Surprisingly, teens that report having primary access in other locations (perhaps friends' homes or their mobile phones) were 128% more likely to be SNS users (odds ratio = 2.28, $\rho < .01$). Perhaps youth are more likely to use social network sites away from parental or adult supervision. Another distinct possibility is that with the rising use of mobile technology such as smart phones and iPods, youth access their social networks with these devices over their school or home computers.

Hypotheses 6 and 7 stated that youth who use SNSs are also very literate in other technologies (Lenhart et al., 2007). The findings support these hypotheses. Teenagers who used other technologies (i.e., cell phone, computer, blogs, etc.) were over 61% more likely to also use social network sites than those who did not use other technologies (odds ratio = 1.61, $\rho < .01$). In addition, youth who were comfortable using other technologies to communicate everyday with their peers were 43% more likely to use SNS (odds ratio = 1.43, $\rho < .01$). These "super communicator" teens connect with friends over a variety of media, including social network sites.

Finally, the results presented here highlight the extremely complex social contexts in which youth reside. For example, the descriptive cross-tabulations in Table 3 show that 68% of youth without a home computer or Internet still use SNSs, compared to approximately 60% of youth with home technology access. However, the regression analyses (Table 2) suggest that having no home Internet access has a significant, negative relationship to participating in SNSs (controlling for other factors). The reality is that youth perhaps find different ways to access social media. Table 4 displays a cross-tabulation of only those youth who use social network sites. They are categorized by their Internet ownership and where they primarily access the Internet.

The results of Table 4 suggest that the majority of youth who have Internet at home, access the Web from their residence. Conversely, 94% of youth without home technology ownership find access at school or in other venues. These youth appear to find their way online, despite obstacles such as a lack of technology access at home. In addition, using the Internet in places other than home or school, often the most regulated places, was positively associated with using social network sites. These combined results offer several compelling hypotheses for digital divide researchers. First, variables such as technology ownership may not significantly describe digital divides as in past studies. Home ownership of computers, in an evolving world where mobile devices and phones are increasingly connected to the Internet, may not be huge obstacles for youth any longer. Second, when it comes to social media, youth may participate in these online communities more often when they access them in less regulated

Table 4. Internet Ownership and Internet Access for SNS Users

	Where youth primarily access the Internet			
	Home	School	Someplace else	Total
Type of modem at home				
Dial-up	473	112	24	609
	(77.7%)	(18.4%)	(3.9%)	(100%)
Broadband	1,606	160	74	1,840
	(87.3%)	(8.7%)	(4.0%)	(100%)
None computer and/or Internet	8	51	70	129
	(6.2%)	(39.5%)	(54.3%)	(100%)

places (i.e., away from the watchful eyes of parents or the schools that ban access to these sites). The patterns of how youth access social technologies are more complex than seen in previous time periods, and traditional digital divide indicators are fading in terms of their association with young people's participation in online communities.

DISCUSSION AND LIMITATIONS

This study contributes to past discussion of the digital divide by examining the current phenomenon of teens and social network sites. The results pose new questions to traditional digital divide conversations. For example, race remained a significant predictor of SNS usage, but in non-obvious ways. Black students were more likely to participate in social network sites than their White peers. Parental education level, level of Internet access, and place of Internet access were not consistent factors in this analysis. Such findings are in accord with emerging descriptive studies, which find that teenagers are consistently immersed in technology, communicating with their friends using digital media, and learning from these interactions. Teenagers are increasingly connected and traditional conceptions of the digital divide in terms of access may not be viable in this context. In terms of participating in online social network communities, youth find a way to participate.

This article also began to examine social and participation divides. Namely, teenagers' overall technical literacy was a significant predictor of SNS membership. Such findings highlight the importance of allowing youth to explore, use, and gain comfort in using a variety of technologies. This technical literacy may help these teenagers evolve and participate in new forms of media.

In addition, factors such as gender and age are significantly related to young people's participation in online networking communities. These findings differ from those of adult populations (Hargittai, 2007), and suggest that youth are particularly unique sub-populations to examine in future research. Studies that examine the role of age, gender, and cultural contexts in the ways that teenagers use new social media platforms promise to be fruitful directions for future research.

The limitations of this study also illuminate future research needs. This analysis utilizes a nationally representative dataset of youth. However, I only consider a binary outcome of whether a teenager had a social network site profile or not. Recent studies of adult populations find that divides exist in different kinds of platforms. For example, Hargittai (2007) found that White college students are more likely to use Facebook while Hispanic students were more likely to use MySpace. Future studies that examine youth populations along different communities may uncover similar divides in SNS participation. Researchers might also consider more detailed indicators of participation. For example, teenagers undertake a variety of activities in social network sites. They write on each other's walls, send messages, post pictures, comment on each other's postings, and interact in numerous ways. Future analyses might consider these degrees of activity—from minimal to diverse—to uncover a better understanding of the participation divide.

This article also continues the tradition of digital divide scholarship that examines the relationship between demographic indicators and technology access. However, as technology ownership and access becomes ever more widespread, scholars must consider other factors that contribute to why a particular population will utilize a new media tool. Social and cultural indicators may better predict why youth use particular online communities, beyond indicators such as race or socioeconomic status. Already, emerging studies suggest that there is a relationship between SNS use and factors such as self-esteem, popularity, and trust (Beaudoin, 2008; Ellison et al., 2007; Zywica & Danowski, 2008). These psychological and cultural factors may ultimately prove more informative when examining why individuals use or do not use a particular technology.

There remains a great need for more detailed data concerning teenagers and their use of social network sites. As new media emerge, questions of *who is accessing and using new technologies* will remain foundational concerns. Digital divide research considers issues of equality and opportunity for using new media. However, understanding the user characteristics of new technologies is also imperative for other research endeavors. Studies that take into account selection effects and patterns of participation promise to offer finer insights into the social and educational effects of social media on youth. Finally, continued research is needed because trends in media use change quite rapidly. This study only considers a cross-sectional dataset, which was collected in November

2007. Patterns of media usage undoubtedly change quite rapidly each year. Widespread adoption of social network technologies suggests that traditional digital divide indicators will be less meaningful in the near future. Instead, finer understanding of the social and cultural trends among youth and technology are needed.

REFERENCES

Beaudoin, C. E. (2008). Explaining the relationship between internet use and interpersonal trust: Taking into account motivation and information overload. *Journal of Computer-Mediated Communication, 13,* 550-568.

boyd, d. (2006). Friends, friendsters, and top 8: Writing community into being on social network sites. *First Monday, 11*(12). Retrieved from http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1418/1336

boyd, d. (2009). Friendship. In Mizuko Ito et al. (Eds.), *Hanging out, messing around, geeking out: Kids living and learning with new media*. Cambridge, MA: MIT Press.

boyd, d. m. (2007). Why youth (heart) social network sites: The role of networked publics in teenage social life. In D. Buckingham (Ed.), *Youth, identity, and digital media, the John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning* (pp. 119-142). Cambridge, MA: MIT Press.

boyd, d. m., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), article 11. Retrieved from http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html

Cheong, P. H. (2008). The young and techless?: Investigating internet use and problem-solving behaviors of young adults in Singapore. *New Media & Society, 10*(5), 771-791.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), article 1. Retrieved from http://jcmc.indiana.edu/vol12/issue4/ellison.html

Facebook. (n.d.). *Statistics*. Retrieved on December 2, 2009 from http://www.facebook.com/press/info.php?statistics.

Federal Communications Commission. (n.d.). E-rate. Retrieved on December 4, 2008 from http://www.fcc.gov/learnnet/

Greenhow, C., & Robelia, E. (2009). Old communication, new literacies: Social network sites as social learning resources. *Journal of Computer-Mediated Communication, 14*(4), 1130-1161.

Greenhow, C., Robelia, E., & Hughes, J. (2009). Web 2.0 and classroom research: What path should we take now? *Educational Researcher, 38*(4), 246-259.

Hargittai, E. (2004). Internet access and use in context. *New Media & Society, 6*(1), 137-143.

Hargittai, E. (2007). Whose space? Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication, 13*(1), article 14. Retrieved on December 4, 2008 from http://jcmc.indiana.edu/vol13/issue1/hargittai.html

Horst, H. A., Herr-Stephenson, B., & Robinson, R. (2009). Media ecologies. In M. Ito et al. (Eds.), *Hanging out, messing around, geeking out: Kids living and learning with new media*. Cambridge, MA: MIT Press.

Ito, M., Baumer, S., Bittanti, M., boyd, d., Cody, R., Herr-Stephenson, B., et al. (2010). *Hanging out, messing around, geeking out: Kids living and learning with new media.* Cambridge, MA: MIT Press.

Jenkins, H. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century.* Chicago, IL: The MacArthur Foundation. Retrieved from http://digitallearning.macfound.org/atf/cf/%7B7E45C7E0-A3E0-4B89-AC9C-E807E 1B0AE4E%7D/JENKINS_WHITE_PAPER.PDF

Kennedy, T. L. M., Smith, A., Wells, A. T., & Wellman, B. (2008). *Networked families.* Retrieved on November 25, 2008 from http://www.pewinternet.org/pdfs/PIP_ Networked_Family.pdf

Lenhart, A., Arafeh, S., Smith, A., & Macgill, A. R. (2008). *Writing, technology, and teens.* Retrieved on November 25, 2008 from http://www.pewinternet.org/pdfs/PIP_ Writing_Report_FINAL3.pdf

Lenhart, A., Madden, M., Macgill, A. R., & Smith, A. (2007). *Teens and social media*. Retrieved on November 25, 2008 from http://www.pewinternet.org/pdfs/PIP_Teens_ Social_Media_Final.pdtime

Livingstone, S., & Helsper, E. (2007). Gradations in digital inclusion: Children, young people, and the digital divide. *New Media & Society, 9*(4), 671-696.

National Center for Education Statistics. (2006). *Internet access in U.S. public schools and classrooms: 1994-2005*. Retrieved on December 4, 2008 from http://nces.ed.gov/ pubsearch/pubsinfo.asp?pubid=2007020

Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the internet worldwide*. New York: Cambridge University Press.

Peter, J., Valkenburg, P. M., & Schouten, A. P. (2006). Characteristics and motives of adolescents talking with strangers on the internet. *Cyberpsychology & Behavior, 9*(5), 526-530.

Pew Internet & American Life Project (PIAL). (n.d.). *Data sets: November 2007—Teens and writing.* Retrieved on December 4, 2008 from http://www.pewinternet.org/ PPF/r/69/dataset_display.asp

Schrock, A. (2009). Examining social media usage: Technology clusters and social network site membership. *First Monday, 14*(1). Retrieved on July 28, 2010 from http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2242/2066

Seiter, E. (2008). Practicing at home: Computers, pianos, and cultural capital. In T. McPherson (Ed.), *Digital youth, innovation, and the unexpected, the John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning* (pp. 27-52). Cambridge, MA: MIT Press.

Thelwall, M. (2008). Social networks, gender, and friending: An analysis of myspace member profiles. *Journal of the American Society for Information Science and Technology, 59*(8), 1321-1330.

U.S. Department of Commerce. (2000). *Falling through the net: Toward digital inclusion*. Retrieved on December 1, 2006 from http://www.ntia.doc.gov/ntiahome/fttn00/ contents00.html

Volman, M., & van Eck, E. (2001). Gender equity and information technology in education: The second decade. *Review of Educational Research, 71*(4), 613-634.

Wellman, B., Salaff, J., Dimitrova, D., Garton, L., Gulia M., Haythornthwaite, C., et al. (1996). Computer networks as social networks: Collaborative work, telework, and virtual community. *Annual Review of Sociology, 22,* 213-238.

Zywica, J., & Danowski, J. (2008). The faces of Facebookers: Investigating social enhancement and social compensation hypotheses; Predicting Facebook and offline popularity from sociability and self-esteem, and mapping the meanings of popularity with semantic networks. *Journal of Computer-Mediated Communication, 14*(1), 1-34.

Direct reprint requests to:

Dr. June Ahn
College of Information Studies
University of Maryland
Rm. 2117J, Hornbake Bldg., South Wing
College Park, MD 20742
e-mail: juneahn@umd.edu