

THE GEOGRAPHY OF FACEBOOK.COM: PROVINCIAL FACTORS IN ADOLESCENT SOCIAL NETWORK PARTICIPATION

Adolescent boys and girls represent the largest and fastest growing demographic sector using the Internet (Greenfield, 2004). Online Social Networks - websites that allow users to create profiles and connect these profiles to other users - have emerged as one of the leading tools for adolescent online socialization. It is estimated that 55% of teens online have a profile. (Lenhard & Madden, 2007). Recent research links online social network participation and psychological well-being, providing benefits for users experiencing low self-esteem and low life satisfaction (Ellison, Steinfield & Lampe, 2007). Moreover, online social networks have also been identified as spaces where high school students discuss academic issues; 60 percent of students talk about education on online social networks, and more than 50 percent talk specifically about homework (National School Boards Association, 2007).

Bronfenbrenner's Bioecological Systems Theory suggests that contextual factors found at different levels of the human ecology can have powerful effects on child and adolescent development (Bronfenbrenner, 1978; Bronfenbrenner & Morris, 1998). There has been little research on the ways in which contextual factors in the physical world afford or constrain participation in online social networks. A better understanding of this relationship can help outline ways in which online social networks allow its users to either enhance or compliment existing offline relationships. Moreover, this research can also inform ways in which such networks can be improved to meet the social and psychological needs of its users.

The current study, the first to map users of online social networks to the general Canadian population, seeks to explore ways in which provincial characteristics relate to participation in online social networks, namely Facebook.com. This study also introduces a novel profile capture technology in online social network research which helps eliminate the bias and reliability issues found in surveys and self-reports (Subrahmanyam et al., 2001).

SAMPLE: The online social network data collected for the analysis represents all Canadian high school students (N=864,990) in 2,073 regional school networks on Facebook.com as of July 2007. Demographic data has been gathered from the 2001 and 2006 Census from Statistics Canada, which counts every man, woman and child living in Canada. Additional Internet Use data is obtained from the 2005 Canadian Internet Use Survey, which represents a selected sample of Canadians across provinces (excluding territories) 18 years or older (N=30,466).

PROCEDURE: A computer program was developed to systematically capture the number of active students subscribed to each regional high school network on Facebook.com. The output of this profile capture is then

correlated to publicly available information from Statistics Canada. Dependent variables for Facebook participation was defined as both: a) actual number of students in each province and b) the proportion of known teens in the province with profiles. Province-wide independent variables are: a) Population age 14-19, b) Number of schools on Facebook, c) population density, d) proportion of English speakers, and e) proportion of homes connected to the Internet. This information is summarized in Table 1.

A second analysis was performed on students from 254 public high schools in British Columbia (N=131,750) against demographic data provided by the Ministry of Education, but no significant correlations were found between participation in Facebook.com and proportion of ESL students and non-English home speakers.

RESULTS: A statistically significant correlation was found between percentage of teens on Facebook and proportion of English speakers in the province ($r = .65$, $p < .05$). A significant correlation was also found between percentage of teens on Facebook and population density ($r = .58$, $p < .05$) suggesting that urban, densely populated provinces have higher rates of Facebook adoption than rural, sparsely populated provinces. No significant difference was established between the proportion of homes with Internet access and proportion of teens on Facebook.

IMPLICATIONS: The current study suggests that online social network Facebook.com has become a major cultural phenomena used by at least forty percent of Canadian high school students- in fact, more high school students are on Facebook than those registered in college and university networks. Yet, Facebook use is not universal across Canada – higher participation can be found in urban English-speaking regions. It is possible that non-English speakers use other social networks - such as Netlog.com for French speakers - that better suit their language abilities (boyd, in press). The reasons and consequences of this digital divide suggest a rich and yet unexplored avenue for research. Such findings highlight the need to further investigate ways in which structural factors offline engage online participation and technology adoption.

Methodologically, the profile capture technology described herein allows for robust, low-cost snapshots of online social network use. This technology can be used to supplement existing methods in developmental research to provide more robust data (Ellison, Steinfield & Lampe, 2007). Possible future uses of this technology might include studying the change of adolescent social networks during school transitions, social outcomes based on usage and differences in network composition across age groups.

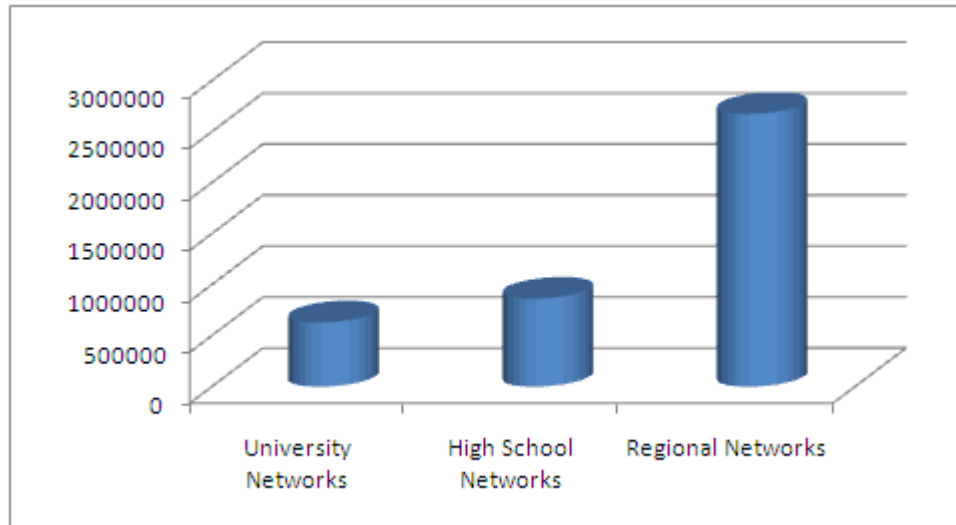


FIGURE 1: Canadian Facebook.com users. There are more students in high school networks (864,990) than in university networks (628,411).

TABLE 1**Facebook Usage and Provincial Characteristics**

Province	Number of Adolescents on Facebook	Number of High Schools on Facebook	Population Ages 14-18	Percentage of Population on Facebook	Population Density (per Sq. Km)	Percentage of English Speakers	Homes With Internet
Alberta	77,804	209	231,352	33.63%	5.1	82.02%	59.71%
British Columbia	134,328	288	265,292	50.63%	4.4	74.25%	62.43%
Manitoba	41,104	147	83,530	49.21%	2.1	76.09%	54.97%
New Brunswick	19,789	53	46,320	42.72%	10.2	65.44%	48.06%
Newfoundland and Labrador	13,690	74	31,780	43.08%	1.4	98.49%	47.60%
Northwest Territories	575	4	3,582	16.05%	0	78.36%	n/a
Nova Scotia	26,618	78	58,842	45.24%	17.3	93.24	54.22%
Nunavut	241	4	3,210	7.51%	0	27.71	n/a
Ontario	489,343	841	825,780	59.26%	13.4	71.95	64.19%
Prince Edward Island	5,950	14	9,657	61.61%	23.9	94.20	50.81%
Quebec	40,411	250	476,630	8.48%	5.6	8.81	49.62%
Saskatchewan	14,100	102	72,015	19.58%	1.6	85.90	56.66%
Yukon	1,037	9	2,212	46.88%	0.1	87.38	n/a
Canada Total:	864,990	2073	2,110,202	40.99%	3.5	59.70%'	54.82%