



Contents lists available at SciVerse ScienceDirect

## Computers &amp; Education

journal homepage: [www.elsevier.com/locate/compedu](http://www.elsevier.com/locate/compedu)

## The role of social media in shaping first-generation high school students' college aspirations: A social capital lens

Donghee Yvette Wohn<sup>a,\*</sup>, Nicole B. Ellison<sup>b</sup>, M. Laeeq Khan<sup>a</sup>, Ryan Fewins-Bliss<sup>a</sup>, Rebecca Gray<sup>a</sup>

<sup>a</sup>Michigan State University, Department of Telecommunication, Information Studies and Media, 404 Wilson Rd. Rm. 409, East Lansing, MI 48824, USA

<sup>b</sup>University of Michigan, School of Information, 3443 North Quad, 105 S. State St., Ann Arbor, MI 48109, USA

### ARTICLE INFO

#### Article history:

Received 24 October 2012

Received in revised form

30 December 2012

Accepted 7 January 2013

#### Keywords:

Post-secondary education

Secondary education

Computer-mediated communication

Media in education

Cooperative/collaborative learning

### ABSTRACT

Using survey data collected from a sample of high school students in the United States ( $N = 504$ ), this study examined how different types of social capital associated with parents, close friends, and Facebook Friends were related to students' confidence about their knowledge of the college application process and their expectations about succeeding in college. We found that social media use plays a significant role only for first-generation students – students whose parents did not graduate from college. For first-generation students, finding information about college through social media was associated with higher levels of efficacy about college application procedures. Having access via social media to a broader network of people who could actively answer questions and provide informational support was positively related with first-generation students' expectations about their ability to be successful in college, but was not the case for non first-generations.

© 2013 Elsevier Ltd. All rights reserved.

### 1. Introduction

Post-secondary education is associated with financial, social, and psychological benefits for both the individual and the society. Young adults between the ages of 25 and 34 with a college degree earn about 40 percent more than similarly-aged adults who have not completed a degree, and about two-thirds more than those with just a high school diploma (U.S. Census Bureau Current Population Survey, 2010). The benefits of higher education also extend to civic participation and healthier lifestyles (Baum & Ma, 2007) as well as cognitive development and cultural awareness (Astin, 1993). However, although the benefits of post-secondary education are well-documented, there are still many individuals who do not attend college or, if they do attend, do not stay long enough to complete a degree (Complete College America, 2011).

There are many factors that influence college access (applying for, being accepted at, and attending college) and persistence (successfully adjusting to and finishing college) patterns. In addition to financial reasons, these include lack of informational resources (e.g., knowledge of grants and student loans), lack of interest, inability to adjust to the college environment, and poor academic preparation that forecloses educational opportunities (Choy, 2001; Snyder, Shorey, Cheavens, Pulvers, Adams, & Wiklund, 2002).

The availability of informational resources, such as relevant deadlines for the application or financial aid process, is especially more challenging for first-generation students – individuals whose parents did not complete a college (or the equivalent) degree (Choy, 2001). Past research has found that first-generation students do not receive the same levels or kinds of support from their parents around college access processes in comparison with non first-generation students (Hertel, 2002; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; York-Anderson & Bowman, 1991). This makes intuitive sense, as parents who had not experienced a particular task would be less able to help others achieve it.

This article employs a social capital framework to explore how access to different types of resources available through students' personal social connections are related to their confidence about their knowledge of college application processes and their expectation that they will eventually succeed in college. We focus on the role of social media in this process, specifically exploring how different types of social capital were related to different kinds of support from parents, close friends, and Facebook Friends among our survey participants, a diverse set of U.S. high school students. Although prior research has explored the relationship between social capital and college access (e.g., Coleman,

\* Corresponding author. Tel.: +1 516 355 1848; fax: +1 517 355 1292.

E-mail addresses: [yvettewohn@gmail.com](mailto:yvettewohn@gmail.com) (D.Y. Wohn), [enicole@umich.edu](mailto:enicole@umich.edu) (N.B. Ellison), [laeeqk@gmail.com](mailto:laeeqk@gmail.com) (M.L. Khan), [fewinsry@msu.edu](mailto:fewinsry@msu.edu) (R. Fewins-Bliss), [rebecca.a.gray@gmail.com](mailto:rebecca.a.gray@gmail.com) (R. Gray).

1988; Perna & Titus, 2005), most of those studies focus on only one or two dimensions of social capital, such as socioeconomic status (i.e., family income) or parental involvement. Moreover, the majority of research on social capital and college access look solely at social capital accrued through parents and education institutions and do not consider social capital that can be accrued by personal networks that are not connected to parents or school, such as those available via social media.

Here, we adopt a comprehensive approach by examining multiple dimensions of social capital, both in terms of the *type* of resource being sought and *from whom* it is received. In addition to considering parental resources, we include measures of social capital via close friends and contacts through social media (e.g., Facebook Friends) and compare first-generation students with non first-generation students. Although research is just starting to explore the role of social media in college access processes, tools such as Facebook are widely used by young people (Lenhart, Purcell, Smith, & Zickuhr, 2010), and may have implications for accessing informational and social support resources (e.g., Ellison, Steinfield, & Lampe, 2007). Thus the relationship between social media practices and college aspirations is an important piece of the college access puzzle to study.

## 2. College application efficacy and expectation of college success

One challenge of conducting research on college access issues is the long period of time between when relevant data are collected from K-12 students and when researchers know the college graduation status of these subjects – at least four years and often more. Given that we cannot measure the college graduation status of our participants, we used two variables known to be predictors of success as our dependent variables. These two constructs represent dimensions of high school students' confidence regarding knowledge of college application processes and their expectations about success in their future college-going activities. We chose these two constructs because according to social cognitive theory, a broad theory of human behavior, self-efficacy (confidence about one's knowledge) and outcome expectations are important factors that drive behavior (Bandura, 1977; 1986). Since we could not assess the actual extent to which our participants did complete college, we explored how underlying social capital factors contribute to efficacy and expectations about success.

The first variable, *college application efficacy*, reflects students' confidence about knowing how to apply to college. Information and skills that would help students successfully navigate the complex college admissions and financial aid processes are important factors that contribute to how “ready” a student is for college (Conley, 2008). Conley (2008) points out that college knowledge is “distributed inequitably in society and the lack of it frustrates and discourages many students who are the first in their families to attend college” (p. 10). For many, these skills are critical for succeeding at college. For instance, lack of understanding regarding complex application procedures may include missing deadlines, foreclosing potential financial aid resources. College application efficacy is not an objective measure of students' actual knowledge, because it is the student's own evaluation. However, in the social cognitive perspective, knowing the individual's level of confidence explains why people experience different outcomes when they have similar skill sets (Bandura, 1977; 1986).

Secondly, we examine *expectations of college success*, which refers to students' expectations about how well they think they will be able to adjust to, attend, and graduate from college. This projection of how well students believe they will do in college is important because the process of thinking about and associating positive emotions with a goal can lead to positive outcomes (Snyder et al., 2002). For example, Snyder et al. (2002) found that college students who positively predicted their own success at the beginning of college were more likely to have better subsequent academic performance. Within social cognitive theory, expected outcomes are important determinants of behavior; these expectations are either formed through direct experience or by vicariously learning through other people (Bandura, 1986).

## 3. A social capital perspective on college aspirations

### 3.1. Defining social capital

Much of the research aimed at understanding why some students are better at knowing about, applying for, enrolling in, and graduating from college utilizes social capital as a theoretical framework. As described by Lin (1999, 2001), Putnam (2000), and Bourdieu (1986), among others, social capital refers to the extent to which individuals are able to access and mobilize resources in their social network. These resources can be tangible resources, such as financial aid or information, or more psychological in nature, such as emotional support. Although the concept originated in the sociology discipline, it is a diffuse concept used in multiple academic domains. As a theoretical framework, social capital encompasses access to different types of resources within one's network and thus may provide a useful perspective on academic success and how to encourage it. In this section, we define social capital and review some of the literature in the education domain, specifically focusing on studies that address college access and success.

The concept of social capital was introduced by Bourdieu (1986) and Coleman (1988) as a form of capital that is distinct from others such as human capital and tangible (or physical) capital. Physical capital is material that creates a tangible product while human capital is the access to people with certain skills and knowledge (Coleman, 1988). Although social capital can facilitate productive activity (as does human capital and physical capital), it is inherently different in that it resides in the *connections* between people and the *potential* for individuals to access resources embedded in their network of social ties, as opposed to the resources directly held by those individuals (as with financial capital).

Lin (1999, 2001), in his structured definition, outlined three critical components of social capital: the resources embedded in a social structure, the accessibility of these resources, and the ability to utilize or mobilize these resources. For example, if one knows people who have access to a desired contact, but one is unable to communicate with these individuals to request an introduction, only the first of the three criteria is fulfilled (and thus social capital is not present). Alternatively, if one knows someone who has valuable information and is able to request, obtain, and utilize this information successfully, all three components of the definition are met.

Putnam (2000) articulated two different types of social capital: bridging and bonding. Bridging social capital is associated with interactions with weak ties (acquaintances or “friends of friends”) that are more likely to hold different beliefs and have access to novel information. For example, sociologist Mark Granovetter (1973) found that people were more likely to report hearing about a job opportunity from a weak tie – a phenomenon dubbed the “Strength of Weak Ties.” Individuals with a more heterogeneous and broad range of people in their social network are typically higher in bridging social capital. These weaker, more distant relationships are more likely to provide us

with non-redundant information and access to heterogeneous perspectives and worldviews, qualities expressed in the concept of bridging social capital. However, this is not the case for close ties. In part because we prefer to spend time with those who are similar to us (McPherson, Smith-Lovin, & Cook, 2001), close ties are more likely to hold information redundant with our own. Resources that are typically obtained from close relationships, such as emotional support or large favors (such as financial loans) are associated with bonding social capital. In the context of post-secondary success, bonding social capital can be related to social support, an important predictor of student adjustment and persistence.

### 3.2. Social capital and college aspirations

Social capital is often used to explain educational outcomes because it provides a framework that takes into consideration not only the resources explicitly held by an individual but also those available to the individual via his or her social relationships (Coleman, 1988). This perspective provides a systematic way to analyze and explain the effect of various factors on academic outcomes.

Since social capital speaks to the resources that can be obtained through social connections, understanding the resources available to an individual requires identifying the individual's social connections. Most of the prior work in this area has looked at the effect of different types of social capital as accrued through relationships with family (namely parents) or friends and peers, but few studies have looked at multiple relationships simultaneously. Here, we focus on social capital that can be accrued through three types of relationships – parents, peers, and Facebook Friends – and explicate how relationships with each of these groups relate to high school students' college aspirations.

Although peer and family influences have been the focus of work in this area, very little research within the college access literature work has specifically examined the role of social capital accrued through one's extended network, such as friends of friends or distant relatives, and specifically the role of social media in enabling students to access these resources. In one exception, Greenhow and Robelia (2009) found that low-income teens relied on contacts made more accessible through social network sites, such as friends who had recently left for college, in their college application and planning processes. Work on undergraduate populations suggests Facebook use can support the accrual of both bridging and bonding social capital (Ellison et al., 2007; Ellison, Steinfield, & Lampe, 2011). Because teens are fervent users of social media (Lenhart et al., 2010), in this study we specifically examine the role Facebook Friends play in shaping expectations about college in order to better understand the role of this potential source of social capital for adolescents.

As mentioned above, social capital describes expectations about access to resources embedded within social relationships, with different kinds of relationships associated with provision of different kinds of informational and emotional resources. In the next section, we describe the literature on social capital and college aspirations that are associated with three critical sources of support for adolescents: parents, friends/peers, and social media contacts.

#### 3.2.1. Parental involvement

Two important sources of social capital that have been identified in the education literature are parents/family and close friends. In the context of college-going, parental involvement in the child's education has been shown to have a large influence on the college enrollment process (Cabrera & La Nasa, 2001; Perna, 2000; Perna & Titus, 2005), such that more involvement from parents is associated with a higher desire to attend college as well as actual enrollment. Parental involvement can be conceptualized as a form of social capital because an individual's behavior cannot be completely explained without the environmental context that the individual is situated in (Coleman, 1988; Perna & Titus, 2005). Note that parental involvement is not only about the dyadic relation between student and parent, but also includes the parents' interactions with teachers or other parents (Dika & Singh, 2002; Israel, Beaulieu, & Hartless, 2001; McNeal, 1999; Perna & Titus, 2005). When parents have high levels of involvement with teachers and other parents, they are likely to be better informed about their children's schooling experience, future ambitions, course selections, and hobbies, which gives them more opportunities to assist their children and provide financial and social support (Schneider & Stevenson, 1999).

#### 3.2.2. Peer norms

Peer interaction is also important and has "far-reaching effects on nearly all areas of student learning and development" (Astin, 1993, p. 3). Peers spend increasing amounts of time together in high school, and classrooms are social places (Ryan, 2000). Peer interaction, viewed as a socialization process, has been shown to lead to motivation, engagement, information exchange, role modeling, and reinforcement of peer norms and values (Ryan, 2000). Although adolescents face both negative and positive peer pressure from multiple sources, a study of high school students showed that peer pressure had the potential to impact academic achievement (Brown, Lohr, & McClenahan, 1986). These group dynamics can be an asset if most of one's peers aspire to enroll in college, as students from high schools in which most of their friends report that they will attend college are more likely to enroll in college themselves (Perna & Titus, 2005).

The influence of close friends is markedly stronger for students from disadvantaged educational backgrounds. In an analysis of national longitudinal data tracking students' educational achievement, Sokatch (2006) found that friends' plans were the best predictor of 4-year college enrollment among students who were low-income, African-American or Hispanic, and from an urban high school. Even after taking into account socioeconomic and academic ability factors, students who reported that their friends were going to college and wanted them to go to college were ten times more likely to attend a four-year college (Sokatch, 2006). Holland (2010) also found that peers were influential in college planning and preparation for Black students.

#### 3.2.3. Informational resources via social media

Although the influence of family and close friends on college aspirations is well documented, the influence of extended networks is less so. Yet with the burgeoning use of social media among youth and consistent findings showing a relationship between social media usage and social capital, it could be that social media tools have the ability to intensify latent connections that could be useful in animating high school students' college aspirations, facilitating the transfer of information about college, and ultimately enhancing expectations of future college success.

A growing body of research explores the potential for social network sites such as Facebook to support the development of social capital among college undergraduate and adult users (Ellison et al., 2007, 2011; Steinfield, Ellison, & Lampe, 2008). As Ellison et al. (2007) write,

“Facebook might make it easier to convert latent ties into weak ties, in that the site provides personal information about others, makes visible one’s connections to a wide range of individuals, and enables students to identify those who might be useful in some capacity (such as the math major in a required calculus class), thus providing the motivation to activate a latent tie.” The social and technical affordances of Facebook lower the transaction costs for maintaining a larger network of weak ties, which have the potential for providing informational resources (see Granovetter, 1983). Given these affordances, it may be that social media tools such as Facebook have the potential to shift low-income young users’ perceptions about the possibility of attending college and their feelings of self-efficacy in this endeavor by increasing perceptions about their access to social support. Greenhow and Burton (2011) found that low-income high school students perceived social network sites as an environment in which it was easier to share their emotions with both close friends and weaker contacts. Students believed their support networks were actually stronger after prolonged SNS membership, citing various channels for communication and frequent personal profile updating as helping them feel closer to, and maintain an awareness of, their close and extended friends; they felt regular online social networking “encouraged openness, sharing, and getting to know more ‘sides’ of a person” (Greenhow & Burton, 2011, p. 239).

However, there are relatively fewer studies that assess the extent to which high school students feel that social media enable them to access informational support from their social network. We are thus interested in how latent resources available through social media contribute to college aspirations. For instance, connecting with someone who is currently attending or has already graduated college could facilitate the exchange of useful college-related informational resources, such as enabling a high school student to ask questions about college.

In addition to the potential resources that can be obtained through people via social media, it is also important to know how much the student actually uses those resources. This refers to the concept of resource mobilization, one of the three components of social capital as outlined by Lin (2001). We are thus interested in the extent to which high school students use the people that they know through social media to actively seek out informational resources.

### 3.2.4. Social support

Malecki and Demaray (2003) define social support as “an individual’s perception of general support or specific supportive behaviors (available or acted upon) from people in their social network, which enhances their functioning or may buffer them from adverse outcomes” (p. 232). Numerous studies identify a positive relationship between social support and academic achievement (e.g., Croninger & Lee, 2001; Legault, Green-Demers, & Pelletier, 2006; Malecki & Demaray, 2003). Social support can also prove vital for the overall well-being of students and when coping with college transition issues, because those who have a sense of belonging within the institution and experience overall well-being have a better chance of graduating with a degree (Baum & Payea, 2004; Tinto, 1993). Many studies on social support, however, focus only on relationships with parents, teachers, and peers, and do not consider mediated and potentially weaker connections such as Facebook Friends. Thus we do not know whether there is a relationship between students’ perceived instrumental and emotional support from these different sources, including Facebook Friends, and how they relate to their college aspirations, which is what this study addresses.

## 4. Research questions

In the above sections, we described three sources of social capital: parents, close friends, and contacts on social media (e.g., Facebook Friends) and the unique resources that those sources can provide. As reviewed above, there has been much literature looking at different aspects of social capital and factors related to college aspirations. However, one of the biggest limitations of the extant literature is that most of the studies only looked at one or two aspects of social capital. Although each aspect of social capital may be related to college aspirations, it is important to look at all of the factors together in order to discover the relative value of each component.

We are thus interested in looking at how different facets of social capital are related to college aspirations among high school students. As outlined in Table 1, there are demographic factors, such as race and socioeconomic status, that have been used extensively in the past as proxies of social capital. These factors are fairly fixed and difficult – if not impossible – to change. Then, there are structural factors (Coleman, 1988), which refer to environmental factors that surround the individual. They do not have a direct relationship with the individual, but can influence them. These factors are not as fixed as demographic factors but are still out of the control of the individual. Examples would include number of siblings that have attended or are currently attending college, the level of parents’ involvement in the community, and how much importance peers place on doing well in school. Next, there is social capital that is directly related with the individual through their immediate network. This can include instrumental support and emotional support through strong ties such as through family and

**Table 1**  
Types and sources of social capital.

Demographic	Gender Race SES (eligibility for free lunch)
Structural	Siblings in college Extended family in college Parents’ involvement in community Peer norms
Immediate Network (Parents & Close Friends)	Instrumental support from parents Emotional support from parents Instrumental support from friends Emotional support from friends
Extended Network (via Social Media)	Instrumental support from Facebook Friends Emotional support from Facebook Friends Facebook Friends as a college resource Social media information mobilization

close friends. Finally, there is social capital directly related with the individual through extended networks. In this study, we focused on social media as a means of connecting to that extended network.

Our main research questions examine the added contribution of each type of social capital in explaining college application efficacy and expectation of college success. In our analyses, we created four different models, looking at the added value of each type of social capital. The final model includes all four types of social capital, in which we can see which social capital factors positively contribute to college aspirations even after accounting for the other factors.

RQ1. What types of social capital are associated with college application efficacy?

RQ2. What types of social capital are associated with expectations of college success?

#### 4.1. College aspiration and first-generation students

Although we have general questions about the association between social capital and two different types of college aspirations, as articulated above, prior literature suggests major differences between first-generation students and those whose parents both graduated from college. First-generation students are disadvantaged in comparison to non first-generation students as they have less financial and social capital. Although many first-generation students are from low-income families (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996) and are ethnic minorities (Bui, 2002; Choy, 2001), studies have shown that parental education is strongly related to the likelihood of enrolling in post-secondary education, even after taking into account other factors such as income, academic preparation, and peer influence (Choy, 2001). This is because parents who did not go to college are often less involved in their children's curricular choices; for example, first-generation students are less likely to take higher-level mathematics courses (Choy, 2001).

Parents who did not graduate high school or graduated high school but did not go on to college also offer less help to their children in searching for relevant information and putting together appropriate forms for financial aid applications (Choy, 2001). Moreover, parents who did not attend college have little knowledge of the college environment and values of higher education; students who did not learn about this from their parents are more likely to experience a "culture shock" when they attend college (Inman & Mayes, 1999) and can also experience a constant dissonance between their family background and the environment at higher education institutions because they are on the margins of two different cultures (see Thayer, 2000). First-generation students also think they have less social support in general from their families (Thayer, 2000).

However, changing parents' academic status is not an easy thing to do. Therefore it is essential to consider how other more malleable factors may impact certain students' access to critical information and support about gaining entry to college. For first-generation college students, the role played by social media in this regard may be critical. At the same time, the potential resources available via social media may not be enough to assist these students with serious issues such as college-going. It is thus an open question as to what types of social capital are most important to these students and if there is a difference between first-generation and other students regarding what social capital factors contribute to their college aspirations.

RQ3. Are there differences in perceived social capital between first-generation students and non first-generation students?

RQ4a. What types of social capital are associated with college application efficacy for first-generation students?

RQ4b. What types of social capital are associated with college application efficacy for non first-generation students?

RQ5a. What types of social capital are associated with expectations of college success for first-generation students?

RQ5b. What types of social capital are associated with expectations of college success for non first-generation students?

## 5. Method

### 5.1. Participants

The six high schools in which survey data were collected were selected with the support of the Michigan College Access Network, a statewide non-profit organization with a college access mission. Muskegon Opportunity, a local college access network, agreed to cooperate with data collection in Muskegon County. Muskegon is a county on the Western side of Michigan and is a mix of urban and rural communities. According to the 2010 U.S. Census data, 88% of adults 25 years and older graduated from high school or higher, and 16.5% had a bachelor's degree or higher.

All 12 school districts with a comprehensive high school (a high school with all four grades) within Muskegon County were invited to participate in this research. Six districts agreed to participate: Muskegon Public Schools, North Muskegon Public Schools, Orchard View Schools, Holton Public Schools, Montague Public Schools, and Oakridge Public Schools. A pilot survey was fielded at Montague; this data was only used to refine the survey.

In early 2012, students in these six districts were surveyed using the refined instruments. A website was created to describe the data collection to parents, who could choose to opt-out their child if they desired. Printed copies of the surveys and scantrons (bubble sheets) were placed in teachers' mailboxes a day in advance. We chose to use paper surveys as we did not want to self-select for people who were proficient computer users, as they might report higher levels of social media usage and bias our sample. Also, students were already familiar with paper surveys and scantrons as they use similar forms for national tests. Using the scantron, however, created limitations in survey design, as the scantron reader could only read one response per question and there were only five response options (A, B, C, D, E) for each item. All surveys across the schools were fielded within one week.

### 5.2. Measures

First-generation status was a dichotomous variable created from two items about the educational level achieved by participants' mother and father. Only students who had *neither* parent graduate from college were considered first-generation. SES was a one-item measure asking about whether or not they qualified for free lunch at school; this is a federal program through which students from families with incomes at or below 130% of the national poverty level are eligible for free meals. For the period between July 1, 2012 and July 30, 2013, 130%

of the poverty level was \$29,965 for a family of four (USDA, 2012). Compared to the national average of 39%, the percentage of students eligible for free lunch is 77% in Muskegon, 32% in Oakridge, 43% in Orchard View, and 52% in Holton (National Center for Education Statistics, 2012). We also asked students to identify a social class (e.g., working class, middle class, upper middle class) on a five-point scale of subjective social classification (Ostrove & Long, 2007) but could not use this item in analysis due to lack of variance in responses as most students reported themselves as being middle class.

### 5.2.1. College aspirations

College application efficacy (Cronbach's alpha = .75) was a four-item original scale assessing the extent to which participants felt they were prepared to apply for college. Expectations of college success ( $\alpha = .84$ ) was a four-item original scale about one's confidence in being able to successfully attend and graduate from college. Principal Component Analysis Varimax rotation showed that these were two distinct factors explaining 63.74% of total variance. The exact items of these two scales and their factor loadings are shown in Table 2.

### 5.2.2. Social capital

Our study included several measures of social capital. The first measure of social capital assessed the type and source of resources. For this, we adapted the Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliott, 2000). The scales for parental support and close friend support were replications of the original scales, while peer support was adapted by replacing "peer" with "Facebook Friend." This resulted in six scales: instrumental support from parents ( $\alpha = .85$ ), instrumental support from close friends ( $\alpha = .80$ ), instrumental support from Facebook Friends ( $\alpha = .90$ ), emotional support from parents ( $\alpha = .87$ ), emotional support from close friends ( $\alpha = .82$ ), and emotional support from Facebook Friends ( $\alpha = .90$ ). Scale items can be found in Appendix A.

Facebook Friend college resource ( $\alpha = .86$ ) was a four-item original scale about the latent, or potential, resources that Facebook Friends could provide in relation to information or advice about college. These items were constructed based on Lin's concept of "access" to resources (Lin, 2001), which is one of the three components of social capital. Students were asked to rate the following statements on a five-point Likert-type scale ranging from "strongly disagree" to "strongly agree": "I am "Friends" with someone on Facebook who graduated college and faced the same kind of challenges I face," "I am "Friends" with someone on Facebook that could answer questions about college," "I am "Friends" on Facebook with an older relative who graduated college," and "I am "Friends" on a social media site with someone who is currently in college."

Social media information mobilization – the extent to which participants reported being able to mobilize, or utilize resources through people they know in social media – was measured by asking about how much information they actually get from their online social connections. This scale ( $\alpha = .83$ ) included three items: "I learn about college from my friends online," "I learn about college from my friends on Facebook and/or other social media sites," and "I get information about college on Facebook and/or other social media sites."

Parental involvement in the community ( $\alpha = .73$ ) was a three-item original scale addressing Coleman's (1988) concept of social capital within the family, or resources associated with parent involvement. The items were: "My parents are well-connected with other parents," "My parents talk frequently with my teachers," and "My family is part of a local community (for instance, a religious or ethnic group)."

The peer norms scale ( $\alpha = .84$ ) consisted of three items from Sokatch (2006). Participants were asked, "Among friends you hang out with (close friends), how important is it to..." followed by "Get good grades," "Finish high school," and "Continue education past high school." They could rate these statements on a five-point scale from "not important" to "very important."

Students were also asked to rate their self-esteem using the Single-Item Self-Esteem Scale (Robins, Hendin, & Trzesniewski, 2001). Participants indicated the extent to which they agreed to the statement "I have high self-esteem" on a 5 point Likert scale from "strongly disagree" to "strongly agree" (1 = strongly disagree, 5 = strongly agree).

Frequency of Facebook use was one question: "Approximately how often do you visit Facebook?" Students had five answer choices: a) never or less than once a month, b) 1–3 times a month, c) 1–6 times a week, d) once or twice a day, and e) three or more times a day. Total number of Facebook friends was a selection between a) 0 to 50, b) 51 to 100, c) 101 to 300, d) 301 to 500, and 4) more than 500.

## 6. Results

We received a total of 789 completed questionnaires. We removed those that were incomplete by more than 10% from the end and those that were systematically missing data (missing three consecutive items or more). Of the 614 remaining cases, 113 (18.4%) did not report their parents' educational status. Our final sample included 504 students represented by the following schools: Holton ( $N = 76$  [15.1%]), North Muskegon ( $N = 113$  [22.4%]), Oakridge ( $N = 72$  [14.3%]), Muskegon ( $N = 106$  [21.0%]), and Orchard View ( $N = 127$  [27.2%]). There were slightly more males (56.3%) than females. The majority of the sample was White (69.0%). African-Americans accounted for 16.7% of the sample, followed by multiracial students (6.0%), Hispanics (6.5%), and Asians (1.8%). The sample was slightly skewed toward upper-year students:

**Table 2**  
Rotated component matrix of college aspiration dependent measures.

	Factor 1	Factor 2
<b>Expectations of college success</b>		
I am confident that I will "fit in" socially in college.	.826	.117
I'll be able to make friends at college.	.847	.076
I am confident that I am able to successfully graduate from college.	.801	.188
I am confident in my ability to get accepted to college.	.710	.326
<b>College application efficacy</b>		
I know how to apply for financial aid.	.073	.728
I know what I need to include in a college application.	.099	.769
I am prepared to apply to college.	.179	.775
I can keep up-to-date with college application deadlines.	.313	.604

9th grade (20.6%), 10th grade (23.8%), 11th grade (25.8%), and 12th grade (29.8%). Slightly more than half of the participants were first-generation (51.2%); a similar percentage reported qualifying for free lunch (51.4%). A small group of students were unaware of whether or not they received free lunch (8.5%).

### 6.1. Differences between first-generation students and non first-generation students

In general, students' self-reported level of college application efficacy (confidence in their understanding about college application procedures) was close to the midpoint of our scale ( $M = 3.25$ ,  $SD = .84$ ). However, first-generation students and non first-generation students showed statistically significant differences in their level of college application efficacy. First-generation students reported significantly lower college application efficacy than non first-generation students,  $t(496) = 2.32$ ,  $p < .05$ . In general, students had fairly high expectations of succeeding in college ( $M = 4.01$ ,  $SD = .78$ ), but first-generation students reported lower expectations of college success than non first-generation students,  $t(499) = 2.84$ ,  $p < .01$ .

In regards to social capital (RQ3), there were significant differences in perceived parental support between the two groups (see Table 3). First-generation students reported having less instrumental support from their parents than non first-generation students,  $t(501) = 3.83$ ,  $p < .01$ . They also reported having less perceived emotional support from their parents in comparison to non first-generation students,  $t(500) = 3.13$ ,  $p < .001$ . First-generation students also reported lower levels of parental involvement in the community ( $t(500) = 6.14$ ,  $p < .001$ ) and a lower level of peer norms ( $t(501) = 2.37$ ,  $p < .05$ ) than non first-generation students. In other words, the close friends of first-generation students were less interested in doing well in school and regularly attending classes in comparison to friends of non first-generation students.

However, there were no significant differences in terms of instrumental support from close friends ( $t(499) = -.92$ ,  $p = .36$ ) or emotional support from close friends ( $t(501) = .64$ ,  $p = .52$ ) between the two groups. There were also no significant differences between the two groups in terms of perceived instrumental support from Facebook Friends ( $t(497) = -.15$ ,  $p = .13$ ) or perceived emotional support received from Facebook Friends,  $t(498) = -1.17$ ,  $p = .24$ .

More than half (52.9%) of the participants either strongly disagreed or disagreed that they could mobilize resources related to college using social media; only 31.7% either agreed or strongly agreed ( $M = 2.7$ ,  $SD = 1.03$ ). There was no difference between first-generation students and non first-generation students,  $t(501) = -.53$ ,  $p = .60$ .

On the other hand, students reported high levels of the potential college-related resources that Facebook Friends could provide (e.g., knowing someone who attended college and is on Facebook), with 73% either strongly agreeing or agreeing ( $M = 3.76$ ,  $SD = .11$ ). First-generation students reported lower levels of Facebook Friend college resources than non first-generation students,  $t(497) = 2.13$ ,  $p < .05$ . These results showed that first-generation students lack certain types of social capital but not others in comparison with students whose parents have both graduated from college. See Table 3 for means and standard deviations per group.

### 6.2. Explaining college application efficacy for first-generation students

To answer RQ4, we ran separate analyses for first-generation students and non first-generation students because we wanted to see which social capital factors were associated with students' college application efficacy for each of the two groups.

Hierarchical linear regression was employed to see the added variance explained by the addition of social capital factors (RQ4a, Table 4). The first model only contained basic information about the individual, such as grade in school, gender, SES, race, and self-esteem,  $F(6, 217) = 9.76$ ,  $p < .001$ . The second model included all variables in the first model as well as family social capital variables, including number of siblings and extended family (cousins, aunts, uncles) in college,  $F(10, 213) = 8.88$ ,  $p < .001$ . The  $R^2$  change from Model 1 to Model 2 was significant at the  $p < .001$  level. Model 3 ( $F(14, 209) = 6.54$ ,  $p < .001$ ) added parent and peer support, but these variables did not significantly improve the model. Finally, Facebook-related social capital measures were included in Model 4, which significantly explained more variance than Model 3 ( $p < .001$ ). Basic Facebook usage variables – frequency of Facebook use and number of Facebook Friends – were added in order

**Table 3**  
Means of social capital between first-generation and non first-generation students.

	First-generation	Non first-generation
Parental involvement in community***	$M = 2.68$ , $SD = .94$ ( $N = 256$ )	$M = 3.20$ , $SD = .96$ ( $N = 246$ )
Peer education norms*	$M = 4.24$ , $SD = .84$ ( $N = 257$ )	$M = 4.42$ , $SD = .76$ ( $N = 246$ )
Parent instrumental support***	$M = 3.69$ , $SD = .92$ ( $N = 257$ )	$M = 3.99$ , $SD = .84$ ( $N = 256$ )
Parent emotional support***	$M = 3.59$ , $SD = 1.04$ ( $N = 257$ )	$M = 3.88$ , $SD = .97$ ( $N = 245$ )
Friend instrumental support	$M = 3.84$ , $SD = .79$ ( $N = 257$ )	$M = 3.77$ , $SD = .82$ ( $N = 244$ )
Friend emotional support	$M = 4.03$ , $SD = .83$ ( $N = 257$ )	$M = 3.79$ , $SD = .85$ ( $N = 246$ )
Facebook Friend instrumental support	$M = 2.65$ , $SD = 1.12$ ( $N = 255$ )	$M = 2.50$ , $SD = 1.10$ ( $N = 244$ )
Facebook Friend emotional support	$M = 2.76$ , $SD = 1.20$ ( $N = 255$ )	$M = 2.64$ , $SD = 1.20$ ( $N = 245$ )
Facebook Friend college resource*	$M = 3.66$ , $SD = 1.08$ ( $N = 256$ )	$M = 3.87$ , $SD = 1.06$ ( $N = 246$ )
Social media information mobilization	$M = 2.73$ , $SD = 1.04$ ( $N = 256$ )	$M = 2.68$ , $SD = 1.02$ ( $N = 243$ )

Means that are significantly different are marked \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

**Table 4**  
Predicting college application efficacy among first-generation students.

	Model 1: demographic	Model 2: structural	Model 3: immediate network	Model 4: extended network
Year in school	.39***	.40***	.41***	.38***
Gender	.10	.10	.09	.06
Free lunch	-.09	-.07	-.07	-.04
Race (Black) <sup>a</sup>	.10	.04	.03	-.01
Race (Other) <sup>a</sup>	-.03	-.02	-.02	-.04
Self-esteem	.14*	.12*	.11	.11
Siblings in college		.21**	.21**	.16**
Extended family in college		-.06	-.06	-.07
Parental involvement		.18**	.17*	.12
Peer norms		.05	.04	-.01
Parent instrumental			.10	.07
Parent emotional			-.08	-.03
Friend instrumental			.04	-.03
Friend emotional			.04	.03
Frequency of FB use				-.11
No. of FB Friends				.02
FB Friend instrumental				.22*
FB Friend emotional				-.23*
FB Friend college resource				.09
Social media information mobilization				.26***
Adjusted R <sup>2</sup>	.19	.26	.26	.35

Coefficients are standardized, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001, FB is short for Facebook.

<sup>a</sup> The reference group for Race is White.

to account for differences among high and low users of the site. The final model explaining college application efficacy for first-generation students explained 41% of variance,  $F(20, 203) = 6.73, p < .001$ , adjusted  $R^2 = .35$ .

In general, students in upper grades showed higher college application efficacy. There was no significant effect of race. The number of siblings attending college for any period of time was a significant predictor such that more siblings attending college increased college application efficacy. Parental involvement in the community was a significant factor in the third model, but when social media variables were added, this variable trended toward, but was not, significant.

In regard to social media use, being able to mobilize information related to college through social media was a positive predictor of application efficacy. Instrumental support received from Facebook Friends was also a positive predictor. Emotional support from Facebook Friends, however, was a negative predictor.

### 6.3. Explaining college application efficacy for non first-generation students

Again, hierarchical linear modeling was used to examine the added explanatory power of different types of social capital (RQ4b, Table 5). The first model contained basic demographic data,  $F(6, 206) = 13.06, p < .001$ . The second model added structural social capital factors,  $F(10, 202) = 5.97, p < .001$ . The  $R^2$  change from Model 1 to Model 2 was significant at the  $p < .001$  level. Model 3 ( $F(14, 198) = 8.81, p < .001$ ) added parent and peer support; these variables did not significantly improve the model. Finally, Facebook-related social capital measures were

**Table 5**  
Predicting college application efficacy among non first-generation students.

	Model 1: demographic	Model 2: structural	Model 3: immediate network	Model 4: extended network
Year in school	.45***	.45***	.45***	.45***
Gender	.02	-.07	-.06	-.06
Free lunch	-.10	-.07	-.05	-.06
Race (Black) <sup>a</sup>	.11	.10	.09	.12
Race (Other) <sup>a</sup>	-.02	.02	.01	-.01
Self-esteem	.19**	.06	.06	.06
Siblings in college		.06	.05	.06
Extended family in college		.02	.02	-.01
Parental involvement		.13*	.10	.08
Peer norms		.30***	.29***	.28***
Parent instrumental			.09	.08
Parent emotional			.01	.02
Friend instrumental			.02	.06
Friend emotional			-.02	-.04
Frequency of FB use				-.12
No. of FB Friends				-.15*
FB Friend instrumental				-.09
FB Friend emotional				.08
FB Friend college resource				.13
Social media information mobilization				.07
Adjusted R <sup>2</sup>	.25	.34	.34	.36

Coefficients are standardized, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001, FB is short for Facebook.

<sup>a</sup> The reference group for Race is White.

added in Model 4, which did not significantly change the adjusted *R* squared (*F* change = 2.05, *p* = .06). The final model explaining college application efficacy for non first-generation students explained 42% of variance,  $F(20, 192) = 6.97, p < .001, \text{adjusted } R^2 = .36$ .

For non first-generation students, year in school was the strongest positive predictor, such that students in upper grades had higher efficacy than those in lower grades. Peer norms was also a significant positive predictor, but number of Facebook Friends was a negative predictor. None of the other variables were statistically significant.

6.4. Explaining expectations of college success for first-generation students

Individual factors and different types of social capital were entered stepwise into a hierarchical linear model (RQ5a, Table 6). The first model contained basic demographic data,  $F(6, 219) = 11.62, p < .001$ . The second model added structural social capital factors,  $F(10, 215) = 11.93, p < .001$ . The  $R^2$  change from Model 1 to Model 2 was significant at the  $p < .001$  level. Model 3 ( $F(14, 211) = 9.56, p < .001$ ) added parent and peer support; these variables significantly improved the model at the  $p < .05$  level. In the final model, Facebook-related social capital measures were added, which significantly changed the adjusted *R* squared at the  $p < .01$  level,  $F(20, 205) = 8.19, p < .001$ . The fourth model predicting expectation of college success for first-generation students explained 45% of the variance (adjusted  $R^2 = .40$ ).

Peer norms – the extent to which participants reported that academic success was important to their close friends – was the strongest positive predictor, followed by Facebook Friend college resource; potential informational support that could be received from Facebook Friends. Frequency of Facebook use, however, was a negative predictor, such that the more frequently the student used Facebook, the more likely they were to have lower levels of perceived success in college. Grade in high school and self-esteem were also significant predictors, such that students who were in a higher grade and had higher self-esteem were more confident about their success in college. Eligibility of free lunch was significantly associated with expectations of college success in the first model, but became insignificant after adding additional social capital factors.

6.5. Explaining expectation of college success for non first-generation students

To examine the social capital factors associated with expectation of college success for non first-generation students, individual factors and different types of social capital were entered stepwise into a hierarchical linear model (RQ5b, Table 7). The first model contained demographic data,  $F(6, 207) = 10.19, p < .001$ . When only looking at demographic data, males were more likely than females to have higher expectations of college success, but this difference disappeared when other social capital variables were added. The second model added structural social capital factors,  $F(10, 203) = 14.09, p < .001$ . The  $R^2$  change from Model 1 to Model 2 was significant at the  $p < .001$  level. Model 3 ( $F(14, 199) = 12.08, p < .001$ ) added parent and peer support; these variables significantly improved the model at the  $p < .01$  level. Finally, Facebook-related social capital measures were added in Model 4, which significantly changed the adjusted *R* squared at the  $p < .001$  level. The final model explaining expectation of college success for first-generation students explained 50% of variance,  $F(20, 193) = 9.54, p < .001, \text{adjusted } R^2 = .45$ .

Peer norms (close friends' perception of how important it is to do well in school academically) was the strongest positive predictor of expectation of college success for non first-generation students, followed by self-esteem and emotional support received from close Friends. Students who received free lunch were less likely to see themselves as being successful in college, but this effect became insignificant once emotional and instrumental support from parents and close friends was added to the model. The number of extended family – cousins, aunts, or uncles – who attended college for any period of time was also a significant predictor. Frequency of Facebook use was a negative predictor – the more frequently students used Facebook, the lower their expectations were for how well they would do in college. None of the other social media variables were significantly associated with expectation of college success.

**Table 6**  
Predicting expectations of college success among first-generation students.

	Model 1: demographic	Model 2: structural	Model 3: immediate network	Model 4: extended network
Grade	.18**	.13*	.15*	.14*
Gender	.10	.06	.03	.01
Free lunch	-.14*	-.10	-.08	-.06
Race (Black) <sup>a</sup>	.01	-.03	-.03	-.07
Race (Other) <sup>a</sup>	.01	-.03	-.02	-.02
Self-esteem	.42***	.40***	.38***	.36***
Siblings in college		-.05	-.04	-.08
Extended family in college		.07	.08	.04
Parental involvement		.08	.06	.06
Peer norms		.31***	.28***	.27***
Parent instrumental			.12	.08
Parent emotional			-.08	-.06
Friend instrumental			.05	.07
Friend emotional			.12	.10
Frequency of FB use				-.18**
No. of FB Friends				.11
FB Friend instrumental				-.10
FB Friend emotional				.01
FB Friend college resource				.20**
Social media information mobilization				.05
Adjusted <i>R</i> <sup>2</sup>	.22	.33	.35	.40

Coefficients are standardized, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001, FB is short for Facebook.

<sup>a</sup> The reference group for Race is White.

**Table 7**  
Predicting expectations of college success among non first-generation students.

	Model 1: demographic	Model 2: structural	Model 3: immediate network	Model 4: extended network
Grade	-.03	-.02	-.04	-.04
Gender	.15*	.04	-.01	-.01
Free lunch	-.13*	-.13	-.10	-.10
Race (Black) <sup>a</sup>	-.02	-.10	-.01	-.02
Race (Other) <sup>a</sup>	-.01	-.13	.00	.01
Self-esteem	.45***	.31***	.24***	.22***
Siblings in college		.01	.02	.02
Extended family in college		.13*	.12	.11
Parental involvement		.06	.02	.00
Peer norms		.42***	.37***	.36***
Parent instrumental			.03	.03
Parent emotional			.05	.04
Friend instrumental			-.02	.00
Friend emotional			.23**	.22**
Frequency of FB use				-.20**
No. of FB Friends				.12
FB Friend instrumental				.03
FB Friend emotional				-.09
FB Friend college resource				.08
Social media information mobilization				.03
Adjusted R <sup>2</sup>	.21	.38	.42	.45

Coefficients are standardized, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , FB is short for Facebook.

<sup>a</sup> The reference group for Race is White.

## 7. Discussion

### 7.1. Explaining college application efficacy

The results of these regression analyses reveal meaningful routes by which both first-generation and non first-generation students obtain confidence about the college application process. For first-generation students, confidence in the application process was associated with instrumental support from Facebook Friends and information obtained from social media. For non first-generation students, support garnered through social media was not instrumental to confidence in one's application efficacy. This may speak to the fact that non first-generation students had informational resources in their immediate network, whereas first-generation students needed to access these resources through extended networks via social media.

Grade in school was significantly predictive of college application efficacy for both first-generation and non first-generation students. The differing levels of application efficacy suggest that students generally become more confident as they get older, regardless of their first-generation status. This was not surprising given that teachers and other support staff typically increase the amount of time they spend talking about applications as students move into higher grades, and students become more aware about college application processes as the deadlines draw near. It raises some concern, however, that students in lower grades are less confident than seniors about their knowledge of what is required to apply for college, especially since many factors that are required for college application (e.g., taking certain classes) need to be done before the senior year.

For both first-generation and non first-generation students, another significant predictor of application efficacy was having siblings in college. This suggests that even if parents did not go to college, knowing someone proximate who went through a similar process greatly increases knowledge, perhaps through vicarious learning as well as explicit knowledge transfer, which is consistent with the social cognitive model (Bandura, 1986). This could also suggest that if students were exposed to the application process through "big brother" or "big sister" programs while they are still in high school, these sibling proxy programs could pair adolescents with older "siblings" who might serve as an informational resource so they would be more knowledgeable and confident about applications. For both groups, parents' efforts to connect and become involved with the greater community was important, but after taking into consideration the effect of social media, the benefit of parents' involvement was less pronounced. This suggests that students whose parents are not so involved in engaging with other parents could still be able to garner some of the extended network effect themselves through social media.

Important differences between first-generation and non first-generation students were the role of instrumental and emotional support received from Facebook Friends, the mobilization of information from social media, peer norms, and the number of Facebook Friends. For non first-generation students, peer norms facilitated higher application efficacy. For first-generation students, peer norms did not have a positive effect, perhaps because students are friends with people who are similar to them (McPherson et al., 2001). This may also be why social media was so important for first-generation students. Although first-generation students reported lower levels of college resources via Facebook (e.g., being "Friends" with someone on Facebook who graduated college), that factor still significantly predicted application efficacy. That means that even though first-generation students do not have as many social media resources as non first-generation students, social media still played an important role in increasing application efficacy. Similarly, being able to get instrumental support and seek out information on social media was also associated with higher application efficacy, but only for first-generation students, exemplifying the importance of resources gained through diverse connections for these students who lack information about the college application process in their immediate family.

### 7.2. Explaining expectations of college success

Consistent with prior literature (e.g., Sokatch, 2006), for all students, self-esteem and peer norms were strong predictors of perceived college success. For non first-generation students, close friends played a large role in terms of how successful they thought they were going

to be in college. More emotional support from close friends increased their expectation of college success. Interestingly, higher frequency of Facebook use decreased expectations of college success for non first-generation students. This may be because the measure of Facebook use we employed only measured time on site, but did not assess the specific activities students were doing on the site. Further research should explore the relationship between college success expectations and Facebook use; past research has found that Facebook is a collection of different features (Smock, Lampe, Ellison, & Wohn, 2011) used in vastly different ways and for both positive and negative academic activities (Lampe, Wohn, Vitak, Ellison, & Wash, 2011).

For first-generation students, social media played a bigger role in predicting expectations of college success. Having Facebook Friends who were currently in, or graduated from college raised participants' expectations of success. These connections to others on Facebook may serve as positive examples of people from similar backgrounds – racially, socioeconomically, and otherwise – who successfully graduated from college, thus instilling confidence in high school students that they, too, can be successful in college. At the very least, seeing others successfully undergo the college experience may serve to demystify it, transforming it into a more realistic goal. Frequency of Facebook use, however, was again a negative predictor, suggesting that certain types of activities on Facebook are not as beneficial. This is consistent with prior research showing that using Facebook for informational purposes increases academic engagement while using Facebook for social purposes decreases academic engagement (Junco, Heiberger, & Loken, 2011).

First-generation students significantly lacked parental support in multiple ways: parents of these students were less involved with the community, less involved with teachers and other parents, and provided less instrumental and emotional support. This parental support was general and not college-specific. This could explain why social media played such a strong role for first-generation students; in other words, the extended network was compensating for the lack of parental support.

The analyses for both expectations of college success and for application efficacy suggest an instrumental role of social media support and connections for first-generation students and of peer norms for non first-generation students. These non first-generation students, who presumably are surrounded by many other non first-generation students, will likely be among those in their high schools to graduate and attend college, and the salience of certain attitudes within their social networks alone boosts confidence in expectations of their own future success and application efficacy. For first-generation students, there does not seem to be evidence within their immediate social networks that they can conquer these challenges, yet the ability to witness others' success at a distance – via social media – reinforces the notion that they, too, can reach these higher education goals.

### 7.3. Implications

The positive effects some aspects of Facebook use have for first-generation students raises questions about the efficacy of banning the site from high schools, as is the case in many districts. Designing applications that capitalize on these findings (by, for instance, suggesting connecting between high school students and mentors or older peers who have successfully navigated college) risk alienating students who do not wish to mix social use with academic use. For example, telling students that the technology can be used for pro-social or academic purposes may compromise use of the site altogether, if students perceive its use to be orchestrated by administrators and not a site for authentic communication among peers. At the same time, high school students may not envision Facebook as a place to seek college-related resources. Highlighting this capacity may open up possibilities for high school students by shifting norms – for instance, making it acceptable to contact current college students with questions about college.

Given both the complexity of the college application process and the demonstrated relationship between social media support and application efficacy for first-generation students, practitioners may want to consider the benefits of offering procedural application help through social media and directing students – particularly first-generation students – toward these portals. There could be many opportunities to use social media such as Facebook to complement the many programs that currently try to link college mentors with high school students. If such programs were to utilize Facebook for such purposes, we would suggest that they focus on applications that can maximize the visibility of people who are associated with college (either are currently attending, have attended, or are working in a college environment) as high school students may not realize how many people can actually provide them with advice and instrumental support. Being able to easily identify potential role models through existing connections via Facebook may even prove to be more useful than randomly connecting students with college mentors. The ability to connect with people outside of the homophilous nature of one's immediate community may be extremely important for first-generation students to break free of the constraints imposed by the lack of informational resources available through their immediate families.

Limitations to this study include the fact that we used a non-random sample of high school students and thus cannot generalize to other populations. Because we used cross-sectional data, we are unable to make claims about the directionality of the relationships we describe. Also, the coefficients in the regressions for first-generation and non first-generation should not be compared across models; effect sizes of the beta values should be interpreted only within each model. We were limited to a set of closed-ended responses in our survey instrument; future work should employ qualitative and longitudinal methods to better understand the dynamics we identify. Finally, we were only able to examine students' expectations of success rather than their actual success. Future research should also examine actual college-going behavior, not only aspirations, in order to identify predictors of actually applying to, attending, and successfully graduating from college.

## 8. Conclusion

In summary, although race, SES, and parental education were shown in prior research to be factors associated with post-secondary educational aspirations and achievement, our analyses suggest that even when such factors are considered, other social capital factors are important components of the college access puzzle. Parents, close friends, and the broader, extended social network made accessible via social media all play different roles in relation to students' college aspirations. We see that the type of support students need to gain knowledge about the process (i.e., knowing how to apply for college) are different from those needed to have confidence that they will succeed in the long run (i.e., be able to successfully attend and graduate from college).

The most significant contribution of this work is the explicit focus on the informational resources available via social media and their role in the process of applying for, planning to attend, and feeling confident about succeeding at college. Importantly, and perhaps not

surprisingly, social media does not play a major role for non first-generation students but does for first-generation students. This may be due to the fact that first-generation students are less likely to have these instrumental and informational resources available in their immediate household, as they do not have parents who have experienced successfully graduating from college. Having access to a broader network of people via social media who provide informational support was important in knowing how to apply for college; this was especially true for first-generation students. For expectations of college success, knowing people in their social media network who attended or graduated from college who could potentially answer questions was important in boosting their confidence that they would be successful. These results show that a combination of different types of resources- both information and social support – are necessary in preparing a high school student for college.

Social capital can be a useful framework for understanding how one's family, community, and peer interactions can affect academic outcomes, including expectations of college success. In regards to potential interventions, the distinction between human/physical capital and social capital is important because changes in human capital (education of parents) or physical capital (income) are challenging to enact. Interventions based on shifting access to social resources, as explicated by the social capital literature, might be less difficult. Social media tools may play a critical role in the college access process in surfacing existing resources in ones network, effectively providing more access to a wider range of people for purposes of sharing information about the college process.

## Acknowledgments

The authors wish to thank the staff, faculty, and students of the Muskegon schools and Muskegon Opportunity for their help with data collection. We would also like to thank our anonymous reviewers. This research was supported by the Bill and Melinda Gates Foundation.

## Appendix A

Parental support: instrumental ( $\alpha = .85$ )

- My parents/guardians make suggestions when I don't know what to do.
- My parents/guardians give me good advice.
- My parents/guardians help me solve problems by giving me information.

Parental support: emotional ( $\alpha = .87$ )

- My parents/guardians listen to me when I need to talk.
- My parents/guardians understand my feelings.
- My parents/guardians show they are proud of me.

Friend support: instrumental ( $\alpha = .80$ )

- My friends give me ideas when I don't know what to do.
- My friends give me good advice.
- My friends explain things that I don't understand.

Friend support: emotional ( $\alpha = .82$ )

- My friends listen to me when I need to talk.
- My friends stick up for me if others are treating me badly.
- My friends understand my feelings.

Facebook friend support: instrumental ( $\alpha = .90$ )

- My Facebook Friends give me ideas when I don't know what to do.
- My Facebook Friends give me information so I can learn new things.
- My Facebook Friends help explain things that I don't understand.

Facebook friend support: emotional ( $\alpha = .90$ )

- My Facebook Friends listen to me when I need to talk.
- My Facebook Friends stick up for me if others are treating me badly.
- My Facebook Friends understand my feelings.

## References

- Astin, A. W. (1993). What matters in college? *Liberal Education*, 79, 4–16.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Baum, S., & Ma, J. (2007). *Education pays: The benefits of higher education for individuals and society*. New York, NY: The College Board.
- Baum, S., & Payea, K. (2004). *Education pays: The benefits of higher education for individuals and society*. New York, NY: The College Board.
- Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood, NY.
- Brown, B. B., Lohr, M. J., & McClenahan, E. L. (1986). Early adolescents' perceptions of peer pressure. *The Journal of Early Adolescence*, 6, 139–154.
- Bui, K. V. T. (2002). First-generation college students at a four-year university: background characteristics, reasons for pursuing higher education, and first-year experience. *College Student Journal*, 36(1), 3–11.
- Cabrera, A. F., & La Nasa, S. M. (2001). On the path to college: three critical tasks facing America's disadvantaged. *Research in Higher Education*, 42(2), 119–149.
- Census Bureau Current Population Survey (CPS). (2010). *Annual Social and Economic (ASEC) Supplement*. Washington, D.C.: Retrieved from [http://www.census.gov/hhes/www/cpstables/032010/perinc/new04\\_001.htm](http://www.census.gov/hhes/www/cpstables/032010/perinc/new04_001.htm).
- Choy, S. P. (2001). *Students whose parents did not go to college: Postsecondary access, persistence, and attainment (NCES 2001-126)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, Retrieved from [http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?\\_nfpb=true&\\_ERICExtSearch\\_SearchValue\\_0=ED460660&ERICExtSearch\\_SearchType\\_0=no&accno=ED460660](http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED460660&ERICExtSearch_SearchType_0=no&accno=ED460660).
- Coleman, J. S. (1988). The creation and destruction of social capital: implications for the law. *Notre Dame Journal of Law, Ethics, & Public Policy*, 3, 375–404.
- Complete College America. (2011). *Time is the enemy*. Washington, D.C.: Complete College America, Retrieved from [http://www.completecollege.org/resources\\_and\\_reports/time\\_is\\_the\\_enemy/](http://www.completecollege.org/resources_and_reports/time_is_the_enemy/).
- Conley, D. (2008). Rethinking college readiness. *New Directions for Higher Education*, 2008(144), 3–13.

- Croninger, R. G., & Lee, V. E. (2001). Social capital and dropping out of high school: benefits to at-risk students of teachers' support and guidance. *Teachers College Record*, 103(4), 548–581.
- Dika, S. L., & Singh, K. (2002). Applications of social capital in educational literature: a critical synthesis. *Review of Educational Research*, 72(1), 31–60. <http://dx.doi.org/10.3102/00346543072001031>.
- 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), 1143–1168. <http://dx.doi.org/10.1111/j.1083-6101.2007.00367.x>.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection Strategies: social capital implications of Facebook-enabled communication practices. *New Media & Society*, 13, 873–892. <http://dx.doi.org/10.1177/1461444810385389>.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1480. <http://dx.doi.org/10.1086/225469>.
- Granovetter, M. S. (1983). The strength of weak ties: a network theory revisited. *Sociological Theory*, 1, 201–233.
- Greenhow, C., & Burton, L. (2011). Help from my "Friends": social capital in the social network sites of low-income high school students. *Journal of Educational Computing Research*, 45, 223–245.
- Greenhow, C., & Robelia, B. (2009). Old communication, new literacies: social network sites as social learning resources. *Journal of Computer-Mediated Communication*, 14, 1130–1161.
- Hertel, J. B. (2002). College student generational status: similarities, differences, and factors in college adjustment. *The Psychological Record*, 52(1), 3–18.
- Holland, N. E. (2010). Postsecondary education preparation of traditionally underrepresented college students: a social capital perspective. *Journal of Diversity in Higher Education*, 3(2), 111–125.
- Inman, E. W., & Mayes, L. D. (1999). The importance of being first: unique characteristics of first-generation community college students. *Community College Review*, 26(4), 3–22.
- Israel, G. D., Beaulieu, L. J., & Hartless, G. (2001). The influence of family and community social capital on educational achievement. *Rural Sociology*, 66(1), 43–68. <http://dx.doi.org/10.1111/j.1549-0831.2001.tb00054.x>.
- Junco, R., Heiberger, G., & Loken, E. (2011). The effect of Twitter on college student engagement and grades. *Journal of Computer Assisted Learning*, 27(2), 119–132.
- Lampe, C., Wohn, D. Y., Vitak, J., Ellison, N., & Wash, R. (2011). Student use of Facebook for organizing collaborative classroom activities. *International Journal of Computer-Supported Collaborative Learning*, 6, 329–347.
- Legault, L., Green-Demers, I., & Pelletier, L. (2006). Why do high school students lack motivation in the classroom? Toward an understanding of academic amotivation and the role of social support. *Journal of Educational Psychology*, 98(3), 567–582.
- Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). *Social media and young adults*. Pew Internet, Retrieved from. <http://pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx>.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22, 28–51.
- Lin, N. (2001). Building a network theory of social capital. In N. Lin, K. Cook, & R. Burt (Eds.), *Social capital theory and research* (pp. 3–30). New Brunswick, NJ: Transaction Publishers.
- Malecki, C. K., & Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. *School Psychology Quarterly*, 18(3), 231–252.
- Malecki, C. K., Demaray, M. K., & Elliott, S. N. (2000). *The child and adolescent social support scale*. DeKalb, IL: Northern Illinois University.
- McNeal, R. B., Jr. (1999). Parental involvement as social capital: differential effectiveness on science achievement, truancy, and dropping out. *Social Forces*, 78(1), 117–144.
- McPherson, S.-L., & Cook, J. M. (2001). Birds of a feather: homophily in social networks. *Annual Review of Sociology*, 27, 415–444.
- National Center for Education Statistics. (2012). *Data on U.S. public high schools and private high schools*. Retrieved from. [High-Schools.com](http://High-Schools.com).
- Ostrove, J., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education*, 30(4), 363–389.
- Perna, L. W. (2000). Difference in the decision to attend college among African Americans, Hispanics, and Whites. *Journal of Higher Education*, 71(2), 117–141.
- Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: an examination of racial/ethnic group differences. *The Journal of Higher Education*, 76(5), 485–518.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon & Schuster.
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: construction validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin*, 27(2), 151–161.
- Ryan, A. M. (2000). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist*, 35(2), 101–111.
- Schneider, B., & Stevenson, D. (1999). The ambitious generation. *Educational Leadership*, 57(4), 22–25.
- Smock, A. D., Lampe, C., Ellison, N. B., & Wohn, D. Y. (2011). Facebook as a toolkit: a uses and gratification approach to unbundling feature use. *Computers in Human Behavior*, 27(6), 2322–2399.
- Snyder, C. R., Shorey, H. S., Cheavens, J., Pulvers, K. M., Adams, V. H., III, & Wiklund, C. (2002). Hope and academic success in college. *Journal of Educational Psychology*, 94(4), 820–826.
- Sokatch, A. (2006). Peer influences on the college-going decisions of low socioeconomic status urban youth. *Education and Urban Society*, 39(1), 128–146. <http://dx.doi.org/10.1177/0013124506291783>.
- Steinfeld, C., Ellison, N., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: a longitudinal analysis. *Journal of Applied Developmental Psychology*, 29(6), 434–445.
- Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: how American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology*, 102(6), 1178–1197.
- Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: characteristics, experiences, and cognitive development. *Research in Higher Education*, 37(1), 1–22.
- Thayer, P. B. (2000). *Retention of students from first generation and low income backgrounds*, Opportunity Outlook (ERIC ED446633). Report for US Department of Education. Retrieved from. <http://eric.ed.gov/PDFS/ED446633.pdf> U.S.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.
- USDA. (2012). *United States Department of Agriculture Food and Nutrition Service national school lunch program*. Retrieved from. <http://www.fns.usda.gov/cnd/Lunch/AboutLunch/NSLPFactSheet.pdf>.
- York-Anderson, D. C., & Bowman, S. L. (1991). Assessing the college knowledge of first-generation and second-generation college students. *Journal of College Student Development*, 32(2), 116–122.