Facebook celebrated its tenth birthday with over one billion active users worldwide (Sedghi, 2014). Facebook and YouTube are among the top three websites worldwide with Twitter and LinkedIn creeping up in tenth and twelfth positions (Alexa, 2014). Social networking sites are undeniably popular. Many scholars have examined the implications of social networking sites on civic and political engagement. For the most part, they have found reasons to be optimistic about a positive relationship. However, questions remain about whether the relationship is causal, as opposed to correlational; the mechanisms through which social networking sites affect engagement; and finally, whether the relationship extends beyond a specific campaign. This study will address these questions. This research is important for understanding whether social media can affect participation inequalities that exist between younger and older citizens (Blais & Loewen, 2011; Blais, Gidengil, Nevitte & Nadeau, 2004; Census Bureau, 2009; Elections Canada, 2012; File, 2013).

In 2010-11, approximately 95% of young adults used the Internet (Statistics Canada, 2011; Zickuhr & Smith, 2012). Of these young users, 90% use social networking sites (Brenner & Smith, 2013; Statistics Canada, 2011). These high rates are also evident in Sweden, Germany,
Portugal, Slovenia, and Poland (Eurostat, 2010). Given youth’s greater use of social networking sites, the effects of these sites are expected to be larger, than they are for older citizens.

Most of the studies of social media and political engagement are cross-sectional, which are weak for assessing causal effects. These studies consistently recommend that further research should employ a longitudinal design (Bode, 2012; Gil de Zúñiga, Jung, & Valenzuela, 2012; Pasek, more, & Romer, 2009; Tang & Lee, 2013; Valenzuela, Park, & Kee, 2009). A longitudinal design would help assess whether those who are more engaged self-select into the use of social networking sites or whether social networking sites usage causes them to be more engaged (Bode, 2012; Gil de Zúñiga et al., 2012; Pasek et al., 2009; Tang & Lee, 2013; Valenzuela et al., 2009; Xenos, Vromen, & Loader, 2014).

Currently, there are a handful of studies using longitudinal data to examine the effects of social media on engagement (Bode, Vraga, Borah, & Shah, 2014; Dimitrova, Shehata, Stromback, & Nord, 2011; Holt, Shehata, Stromback, Ljundberg, 2013, 2013; Towner, 2013). This study differs from other longitudinal studies because of its improved approach to estimating mediated effects, i.e., use of simultaneous equation modeling, and its focus on civic awareness as a mediator. Furthermore, this study differs from other longitudinal study in its examination of social media effects on engagement outside a specific political campaign.

Much of the existing research is campaign-focused and researchers acknowledge that the effects could be campaign-specific (Bode, 2012; Bode et al., 2014; Dimitrova et al., 2011; Gil de Zúñiga, Copeland, & Bimber, 2013; Hargittai & Shaw, 2013; Holt et al., 2013; Vitak et al., 2011; Towner, 2013). Campaign periods may be atypical as periods of high political interest and engagement. Furthermore, the measures of social media and engagement focus on campaign activities such as talking about the campaign or candidates (offline or through social media),
attending a political rally, working for a political party, or making a donation online or offline (Bode, 2012; Bode et al., 2014; Dimitrova et al., 2011; Gil de Zúñiga et al., 2012; Holt et al., 2013; Towner, 2013). These measures may not be appropriate for studying youth’s political engagement. Studies show that youth opt to be involved in political consumerism (boycotts and buycotts), demonstrations or marches, signing petitions, and other non-traditional methods of engagement (Bennett, 2008; Dalton, 2008; Stolle, Hooghe, & Micheletti, 2005; Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006).

Vitak et al. (2011) encourages future studies to examine non-election periods, which would provide a “richer picture of how political participation and SNS are related” (Vitak et al., 2011: 113). As such, this research is unique because it is not focused on a specific campaign, but rather politics inherent in everyday life. To illuminate the connection of social media use to politics, I supplement the longitudinal survey data with in-depth qualitative interviews with a diverse group of 30 youth. The qualitative data provides stories to personify the experiences of youth using social media for civic and political purposes.

Literature Review

Existing research tends to focus on a particular social networking site, especially Facebook (e.g., Conroy, Feezell, & Guerrero, 2012; Tang & Lee, 2013; Vitak et al., 2011). This approach is becoming less relevant as 46% of Internet users use multiple social networking sites (Duggan & Smith, 2013). Furthermore, dividing the different social networking sites into specific experiences (e.g., Towner, 2013) seems arbitrary, because one of the most popular sites linked to in Facebook is YouTube. Baumgartner and Morris (2010) report a high correlation between Facebook use and YouTube use. Given the seamless use of Facebook and YouTube, it
is difficult to distinguish the use of specific tools. As such, this research looks at youth’s use of social networking sites, collectively, for interacting with peers about political issues and making connections to civic and political organizations.

**Interaction about Political Issues Through Social Media:** Prior to social networking sites, Internet users relied on emails, blogs and chatrooms to discuss political issues (Bakker & de Vreese, 2011; de Waal & Schoenbach, 2008; Gil de Zúñiga, Veenstra, Vraga, & Shah, 2010; Quintelier & Vissers, 2008; Shah, Cho, Eveland, & Kwak, 2005). Cohen and colleagues argue that the new media environment is distinctive, because users are content creators, as opposed to merely consumers (Cohen, Kahne, Bowyer, Middaugh, & Rogowski, 2012). Users are not restricted to discussing stories on the news media’s agenda. Instead, users can define what they see as a political issue, then provide information and commentary. Blogs were the predecessor to this type of use, but even in the height of blogging, writing blogs was not a common activity. Only 12% of Americans blog; 33% of Americans read other’s blogs (Smith, 2008). Even among teenagers, blogging has dropped dramatically (Lenhart, Purcell, Smith, & Zickuhr, 2010). Facebook, Twitter, and other social networking sites require less effort to post an issue and engage others in a discussion, compared to blogs (Vitak et al., 2011). Social network users do not struggle, as bloggers do, to get users to view their postings.

Furthermore, users can track their friends’ activities through their News Feed to find out what their friends think about various political issues (Conroy et al., 2012; Valenzuela et al., 2009; Vitak et al., 2011). Social networking is distinctive, because it involves the “consumption and/or production of shared materials, and commenting on or simply “liking” other people’s postings” (Tang & Lee, 2013: 764). Social networking sites offer many opportunities for those who are not politically interested to be exposed to political content through their friends’ News
Feeds (Dimitrova et al., 2011; Tang & Lee, 2013; Xenos et al., 2014). For this reason, researchers need to investigate the different ways that users can engage with political content on a social networking sites, rather than measuring exposure (Bode, 2012). This usage could involve posting content, reposting or retweeting content, or liking or “favoriting” content.

Creating Connections Through Social Media: Putnam’s (2000) concerns about the decline in civic life center on declining memberships in civic organizations, such as the Parent-Teacher Association. Membership in civic organizations is strongly linked to civic and political engagement (Putnam, 2000; Verba, Schlozman, & Brady, 1995). The Internet offers new ways for citizens to connect with these civic groups, including visiting their website, joining their listserv, joining a Facebook group, or liking or following them on social networking sites.

In particular, Facebook Group application facilitates the formation of communities with common interests (Conroy et al., 2012). This application can create an online connection to organizations that citizens are connected to offline. Alternatively, this application can initiate a connection to a new organization online. Once a person joins a group, they will have access to regular information about this group through the News Feeds function. These groups can share information about issues faced by the organization, its members, or its clientele, or information about events, such as fundraising events, annual general meetings, and volunteer opportunities. Alternatively, these groups could coordinate political activities, such as letter-writing campaigns or petitions. Conroy et al. (2012) conducted a study of 30 political groups on Facebook. They found that the most popular posts are providing links to other material, posting photos, and posting discussion topics, whereas event information was relatively unpopular (Conroy et al., 2012). While the research focused on Facebook, similar social connections can be made using Twitter, LinkedIn, and other social media sites.
Preliminary research suggests that Facebook groups can increase civic and political engagement. For example, Valenzuela et al. (2009) found that among students, being a member of a student group on Facebook increased civic and political engagement. Other types of groups were correlated with either civic or political engagement, but not both types of engagement (Valenzuela et al., 2009). Looking exclusively at political engagement, Conroy et al. (2012) found a significant correlation between the number of Facebook groups that students are connected to and political engagement.

Another way to create these social connections is through liking, following, or friending politicians and elected officials (Bode et al., 2014; Dimitrova et al., 2011, Holt et al., 2013; Rainier, Smith, Scholzman, Brady, & Verba, 2012) as well as other political actors, such as activists (Tang & Lee, 2013). Social networking site connections are correlated with exposure to online political information, but each measure seems to have its own unique effects on political engagement (Bode et al., 2014; Tang & Lee, 2013). Indeed, researchers found that the strongest unique direct effect of social networking sites on engagement can be observed between social networking connections and engagement (Bode et al., 2014; Tang and Lee, 2013).

**Mediated Effects of Social Networking on Engagement:** Understanding the mechanisms through which social media affects engagement is critical for theory development and for understanding the nature of the effects. One of the problems with existing research on social media and engagement is a focus on direct causal links at the expense of examining mechanisms through which social media affects engagement. Single equation formulas are used to assess the direct link between social media and engagement, with no measurement of the mechanisms through which social media and engagement are linked (e.g., Xenos et al., 2014).
When studies do measure mediators, they use a series of single equation modeling inferring causal pathways among the variables. For example, looking at political knowledge, the premise is that digital media, and social media specifically, could increase political engagement by increasing political knowledge (Baumgartner & Morris, 2010; Conroy et al., 2012). However, studies have assessed this impact using a series of single equation formulas (one predicting knowledge; one predicting engagement, controlling for knowledge), rather than examining mediated effects (Baumgartner & Morris, 2010). Other studies attempt to examine mediated effects through path analysis, but these studies have little grounds on which to establish the causal ordering of the variables (Tang & Lee, 2013; Gil de Zúñiga et al., 2012, 2013). Ideally, mediated effects are examined with three-wave longitudinal design (Boulianne, 2011). In the absence of this type of data, the next best approach would be to use simultaneous equation modeling, which concurrent estimates the direct and indirect effects of independent variable on the dependent variable.

Few studies attempt to study the impact of media use on civic awareness or knowledge. Many studies claim to assess this type of knowledge, but the measures are about knowledge of political institutions and politicians, instead of what is happening in the world (McLeod et al., 1996, 1999; Milner, 2002; Pasek et al., 2006). This distinction is important when discussing the impacts of this awareness on engagement in civic and political life. While knowledge of political institutions and politicians affects voting (Smets & Van Ham, 2013), many issues cannot be addressed by casting a ballot. Many forms of engagement look beyond the state. Petitions, marches or demonstrations, as well as boycotts may target the injustices caused by multinational corporations, such as exploitive labour practices and environmental degradation. As such, this study seeks to examine a citizens’ awareness of a broad range of issues facing the world.
Drawing on the large body of research on traditional media use, political knowledge, and engagement (see Delli Carpini & Keeter, 1996; McLeod et al., 1996, 1999; Milner, 2002), the proposed study hypothesizes that social media use will increase civic awareness, which in turn, increases engagement in a broad range of political activities. Online media is expected to work in the same way as traditional media, but research is far from conclusive. De Waal & Schoenbach (2008) asked survey participants to list issues affecting the Netherlands and the world, then they coded the survey responses into political and non-political issues as well as counted the number of issues mentioned. They found mixed results about the effects of traditional and online news on civic awareness (de Waal & Schoenbach, 2008). Pasek, Kenski, Romer, & Jamieson (2006) examine “political awareness” in terms of factual knowledge about political candidates and institutions. They found strong correlations between political awareness and media use, particularly online media, in their survey of youth (Pasek et al., 2006). However, in both cases, the researchers did not examine how awareness subsequently affects engagement in civic and political life.

The theory is that using social media to interact about issues and to form connections with organizations will build your awareness about what’s happening in the world. The more you know about the world around you, the more likely you will find something that interests you enough to become engaged in the political process.

This research looks at how social media is used by youth and how this usage affects civic awareness and engagement in political life. Specifically, the research questions are:

RQ1) How do youth use social media?

RQ2) To what extent does social media use affect youth’s civic awareness?

RQ3) To what extent do these effects translate into increased political engagement?
Methods

The study employs two data sources. The first data source is qualitative interviews with youth from Edmonton, Alberta (Canada). Youth were contacted through various community agencies serving the youth population. The intent was to recruit a diversity of youth, particularly around social media and engagement in civic and political life. These 30 interviews were conducted from March to June 2012. The qualitative interviews provide stories with which to understand how social media is used. The qualitative data is relevant for the first question about how youth use social media.

The second data source is a two-wave longitudinal survey of a random sample of students enrolled at a university in Edmonton, Alberta (Canada). This data is relevant for understanding frequencies of engaging in different activities using social media as well as the extent to which social media affects civic awareness and subsequent engagement in political life. The first-wave of the survey was completed in 2010, 2011 or 2013 (n=875). The response rates to the first wave surveys varied with the first two surveys at 60% and the last one at 20%. All participants were re-surveyed (January to March 2014). The response rate to the second wave of the survey was 60%. The biggest challenge in re-surveying this group is that 37% were no longer students at this institution, whereas the respondent pool includes only 20% former students (Table 1). Former students proved difficult to contact. To account for any potential differences between current and former students, student status is accounted for in the multivariate model.

The longitudinal survey began as a student survey, following much of the research in this field (Bode, 2012; Conroy et al., 2012; Hargittai & Shaw, 2013; Towner, 2013; Valenzuela et al., 2009; Vitak et al., 2009). As these studies argue, students are interesting case studies of social networking use, because the origins of Facebook is on a college campus and because of the
saturation of use in the student body (see discussion in Pasek et al., 2009). In making the leap from a student sample to conclusions about youth, it is important to note that students, compared to other youth, tend to come from more privileged socioeconomic backgrounds, have greater access to the Internet, have greater flexibility in their schedule, and have more cognitive resources facilitating engagement in civic and political life (Valenzuela et al., 2009).

While some may see the student origins of this survey as a limitation, I see it as a strategic choice. Surveying youth in general or the general population has serious trade-offs, which include extremely low frequency of social media use. For example, using a composite scale of social media use, Dimitrova et al. (2011) create a variable with a range of 0-24 with an average of .8 for a random sample of the Swedish population. Holt et al. (2013) have a range of 0-19 on their social media scale and an average of 1.08 for Swedish youth. Likewise, Bode et al. (2014) studied a random sample of American teenagers. One of their measures of social media use had a 20-point range, but an average of 1.27. The other measure of social media use had a 24-point range, but an average of 1.34 (Bode et al., 2014). They acknowledged the infrequent use of social media among their sample (Bode et al., 2014). These series of studies are notable, because they all used a longitudinal design. They offer the strongest evidence of a causal effect on political engagement. However, given the skewed distribution of social media usage, they seem to be documenting the effects of social media for a very small group. From this perspective, students (and former students) are interesting case studies in the effects of social media, because of their intense use of this media.

In terms of the respondent profile, this sample is older than other student samples (see Bode, 2012; Hargittai & Shaw, 2013; Valenzuela et al., 2009; Vitak et al., 2011). Age is an important variable as Valenzuela et al. (2009) found age differences among students in whether
or not one uses Facebook. My sample is more equitably distributed in terms of gender compared to some other studies (Valenzuela et al., 2009; Vitak et al., 2011). Most importantly, the sex distribution matches the Registrar’s records for the student body and matches large-scale students surveys, such as the National Survey of Student Engagement (2013). In terms of parental education, the sample is more diverse than probably expected. Approximately 30% of respondents reported that their father did not have any college training (a similar percentage reported their mothers did not have any college training). As such, almost one third of the sample is first generation college students.

Table 1 provides an intensive examination of how the sample compares to other student or youth surveys in this field of research. In general, these studies confirm that students are more engaged in politics, than youth in general (Blais & Loewen, 2011). In addition, the student surveys produced highly divergent estimates of the levels of political engagement for their respective student bodies. My estimate falls within the range of estimates.

Methods

The survey data includes 30 questions about social media use, seven questions about civic awareness, and 20 questions about political engagement. However, for this paper, I will focus on the subset of questions that map on to the theoretical framework described in the literature review. Borrowing from Rainie et al. (2012), the first question series asks about the use of social networking sites to: post links to an issue for others to read; repost content related to an issue that was originally posted by someone else; “like” or promote material related to issues that others have posted; and post your own thoughts or comments on an issue. The questions tap into interaction on social media about political, social, economic, and environmental issues. An
additive scale was created from the dummy versions of these variables. The Cronbach’s alpha is .788. The values range from 0 to 4 and the average is 2.32 (SD = 1.52).

The next question series was developed based on discoveries during the qualitative interviews. The scale asks about liking or friending: a community organization, such as charity or non-profit organization that raises funds or provides services to the needy; political party; a political group that is not affiliated with a party, such as an environmental organization or a human rights organization; and elected officials, candidates for office or other political figures. The question series taps into social connections created through social media. An additive scale was created from the dummy versions of these variables. The Cronbach’s alpha is .662. The values range from 0 to 4 and the average is 1.16 (SD = 1.16).

Finally, civic awareness was assessed following the precedence on the study of political interest (Verba et al., 1995). Participants were asked to rate their civic awareness at the city, provincial, and national level. The question asked, “To what degree would you say that you are aware of current events in your community; province; and country?” The additive scale has a Cronbach’s alpha of .835. The values range between 3 to 15 and the variable is normally distributed with a peak at the mean. The average is 8.17 (SD = 2.49).

This paper focuses on five measures of engagement: voting, participating in boycotts, participating in protests, signing petitions, and contacting public officials. The additive scale has a Cronbach’s alpha of .502. The values range from 0 to 5 and the distribution has a slight positive skew. The average is 1.73 (SD = 1.23).

For the final multivariate analysis, I examine the relationship among social media uses (2 variables), civic awareness, and political engagement examining direct and indirect effects. A correlation matrix was produced to estimate the relationship among the four key variables,
controlling for a variety of demographic variables and for other political dispositions. The demographic controls are age (4 groups), gender, father’s education, mother’s education, and whether they are a current student (Table 1). As for political dispositions, I control for prior levels of political engagement and political interest, following the example of two key longitudinal studies in this area (Holt et al., 2013; Towner, 2013). In addition, I include a measure of digital political messaging. Participants were asked if they received a digital message about a political issue in the last 30 days, through email, text, Facebook, or other social media. This question was asked during wave 1. These statistical controls are important for moving towards more causal, rather than correlational, explanations of the relationship between social media and engagement (Holt et al., 2013).

SPSS was used to create a partial correlation matrix of the four key variables, controlling for demographic variables and prior political disposition. The correlation matrix was then imported into Lisrel for analysis. This analysis approach involves estimating multiple simultaneous equations among social media uses, civic awareness, and political engagement. Maximum likelihood estimation is used for estimating the coefficients in the model.

Findings

The first research question is about how social media is being used by youth. Since the survey data can only speak to educated youth in Edmonton, I present comparison statistics from international studies of youth and students. In addition, I offer qualitative data from interviews with a diverse group of youth. The blurring of existing literature and new findings is a common practice in qualitative research, but relatively uncommon in quantitative studies. Since the first
research question uses both qualitative and quantitative data, I follow the practice of qualitative studies, which involves presenting original findings alongside existing research.

Respondents reported a high frequency of interactive social media use around political issues (Table 2). They are not merely consuming content, but rather they are responding to content by liking or promoting the material that relates to issues that their friends have posted. Overall, these educated youth, as a subgroup of youth, were more likely to use social media in this way compared to young people in general (see Table 2). The higher frequencies could be related to changes in social media use over time, methodological or cross-national. Rainie et al. (2012) collected data in the summer 2012, whereas this survey collected data in January to May 2014 (18 months difference). Rainie et al. (2012) asked each question in relation to “political content”, whereas the introduction to this question encouraged participants to think about all political, social, economic, or environmental issues, then respond to this question in relation to these broad set of issues. The broader definition could encourage participants to think about issues that may not be on the current public agenda, but are issues nonetheless, such as gender inequality. I do not believe that the differences are due to cross-national variations, because the rate of social networking use and other statistics about Internet use are comparable for the two countries (Brenner & Smith, 2013; Statistics Canada, 2011; Zickuhr, 2010; Zickuhr & Smith, 2012).

While scholars are enthusiastic about political discussion that could occur on Facebook, Twitter, and other social media, the youth that we interviewed were less enthusiastic. Some youth reported being exposed to political content on social media and explained that they did not like this material. Indeed, across the 30 interviews, it was difficult to find any respondent who enjoyed the political content that their friends were exchanging on Facebook.
Quote 1: {Interviewer: What do you think of Facebook?} Sometimes it is great. Sometimes it is not so great. Some people they tend to update stuff that you don’t really want to know about. It allows you to post articles that you have read or videos. Sometimes you don’t want to see all those things and it is all over your News Feed.

Quote 2: A friend of mine the other day, she is very successful, works at the U of A, has her own successful blog, and she was like “oh I have 900 some odd followers” and you know. I even, when she retweets some of my posts, I’m like “that reached like 900 people! That’s amazing!”

Quote 3: So many people put up so many stupid things on Facebook…she even posts different views that I don’t agree with…So I was like I have to unfriend you and I actually have to block you because I know you will try add me again and I will feel really bad if I don’t add you again. So yeah just a lot of people post a lot of dumb things on Facebook I don’t really need to know about. Or I’ll post something that will eventually turn into this big debate. I don’t really think Facebook is supposed to be an arena of debate, where people are supposed to contest their views or argue with each other. So that kind of frustrates me.

The next series of questions is intended to identify the extent to which participants are connected to civic and political groups. Unlike others who focus on politics and elections (Table 3), this survey engaged a much broader definition of political issues and a wider variety of political actors, like Tang and Lee (2013). As such, I asked about connections to community organizations and social movement organizations. The inclusion of social movement connections is critical when looking at political engagement measures that include non-traditional modes of participation, such as petitions, boycotts, as well as marches and demonstrations. These types of activities are popular forms of engagement for social movement organizations and community groups.

In terms of political candidate or political parties, the frequency of connecting was much lower than other groups and organizations. Vitak et al. (2011) reported that 9% of their college students reported becoming a fan of a political candidate. In contrast, 51% of their college
students reported seeing other users engage in this behaviour. Their data was collected in the height of the 2008 presidential election. A cross-sectional survey of youth suggests that the frequency of liking elected officials and candidates is approximately 25% (Rainie et al., 2012). The low frequency observed in this survey likely relates to collecting data outside a specific campaign. As such, political candidates are not actively seeking connections, nor are citizens looking for these connections.

In the qualitative interviews, many youth described their social connections to community organizations and social movement organizations. While youth talked at length about their connections to various organizations through social media, they also talked a lot about organizations that did not yet have an active Facebook page or Twitter profile. The following is merely a sampling of their extensive commentaries on their social connections to organizations and political candidates.

*Quote 4:* {Are any of your friends on Facebook organizations or do you have any organizations added as friends on Facebook?} Yeah, most of the organizations are on Twitter though, like a lot of environment organizations and government organizations, or government, like politicians, I follow them… {What sort of organizations are you following on Twitter?} I couldn't tell you what they're called like they're all different environment ones and new technologies, and like green technologies and that, but I don't know what they're actually called. {What made you decide to friend or like those organizations?} Organizations that I actually, like, been a part of, or heard someone speak about, or like that's all, like. I won't like things because everyone else is doing it. I'll like it for a reason, and I only like – the only things I'll like on Facebook are um, groups that I think are making a difference.

*Quote 5:* {You know how organizations can have a page and you can “like” it or become their friends?} Yes. {Can you think of which organizations…?} The Edmonton Pride Center would be one. The Outlaw group would be one. Just trying to think of The APERK group. So it is a lot of like, university, I guess, organizations. {What made you decide to “friend” or “like” those organizations?} Usually my friends would be part of them, so they will be, like, send me something, “Hey, like this! I’m part of this organization.” So I’ll instantly “like” it and I’ll read into it. Sometimes I will get involved in it, sometimes I won’t.
Quote 6: How many political figures, just in the last provincial campaign, what are you doing Tweeting? Like, what are you doing? Are you insane? And that is what I think, because this person is supposed to be a leader, in... I don’t understand how you can be so rational, accumulate the experience and level of influence, only through talent and hard work, and all these things, and understand accountability and all this stuff and suddenly just throw it away in some, you know, totally inappropriate comment, that you have no idea who is the audience. To me, that is almost an insane act.

Quote 7: {Are some of your friends or your likes or whatever you follow, are some of them organizations? Any of them?} Some of them yes. {Do you know how many organizations approximately?} There are about 20. {Now, which organizations?} So things like PETA, or Music for Change or peace groups, political groups stuff like that. {Now what made you decided to friend or like those organizations?} Things that I support and think they deserve to have support.

The second research question is about the extent to which social media use affects youth’s civic awareness. Table 4 presents the bivariate and partial correlation matrix for all variables. For all measures of social media use, there is a significant bivariate correlation with civic awareness (Table 4, bottom numbers in the diagonal $p \leq .001$). In other words, participants who use social media more for these types of purposes are more civically aware, than participants who use social media less often for these purposes. Controlling for covariates, these correlations shrink, but are still substantive ($122 p = .061$ and $151, p = .020$; see Table 4, top numbers in the diagonal).

As for the relationship between social media and political engagement, there are several correlations worth noting. First, the effect of prior political engagement on social connections through social media is comparable to the effect of social connections on current political engagement ($382$ and $.403, p < .001$). In other words, there seems to be a strong reciprocal relationship between social connections and engagement. For interaction about political issues, the effect is larger from social media to current political engagement, compared to prior engagement to interaction about political issues ($285$ versus $.200, p < .001$). These findings suggest that those who use social media for these purposes, self-selected to some degree, based
on prior levels of political engagement. However, social media has a slightly larger effect on transforming youth into politically engaged citizens, rather than reinforcing pre-existing political engagement.

In the simultaneous equation model, the effects of social media use on political engagement are significant, after controlling for prior levels of engagement, political interest, prior digital messaging on political issues, and demographic variables (Figure 1). The strongest effect is making connections through social media and political engagement. Making connections through social media changes level of political engagement. These connections to political and civic organizations increase levels of political engagement at wave 2, compared to wave 1. Not only do social connections have a significant direct effect on engagement, they also have a significant indirect effect on engagement through civic awareness (Table 5). In other words, as youth increase social connections to political and civic organizations, they become more aware of the issues affecting their community, province, and nation. Social connections increase civic awareness, which translates into increased political engagement, controlling for prior levels of political engagement (Table 5).

Interaction about political issues does not have a significant effect on civic awareness after controlling for prior receipt of a digital message, prior levels of engagement, political interest and demographic variables. Instead, interaction about political issues has a direct effect on engagement, controlling for other variables. As such, civic awareness does not seem to be an appropriate mechanism for understanding this form of social media’s effects on engagement.

**Discussion**
Plenty of research has documented a positive correlation among measures of social media use and political engagement. This study moves the literature forward by making greater causal claims. These causal claims are derived from longitudinal data. The effects of social media use on political engagement are estimated, controlling for prior levels of engagement, prior political interest, past receipt of a digital political message as well as demographic variables. Unlike other longitudinal studies of youth (Bode et al., 2014; Dimitrova et al., 2011; Holt et al., 2013; Towner, 2013), this study used an improved approach to estimating the mediated effects of social media on engagement, examined civic awareness as a mediator, and explored social media effects on the politics of everyday life, rather than focusing on a specific political campaign. This approach advances theory and understanding of how and why social media affects engagement.

That said, some of these studies have better sample designs in that they use a cross-section of youth (Bode et al., 2014; Holt et al., 2013). The trade-off for these studies is their study accounts for the behaviour of a very small group of youth who use social media for civic and political purposes. In contrast, this study uses a youth sample with a large degree of variation on the independent and dependent variables. With this data, I can better assess the effects of social media on engagement.

Studying the 2012 Presidential Election, Towner (2013) found that after prior political engagement was accounted for in the model, none of the social media variables had a statistically significant effect on engagement. My study, which was also done with college students, suggests otherwise. Controlling for prior political engagement diminishes the effect of social media on current engagement, but the effect remains statistically significant. Her findings may be explained by focusing on social media use for the campaign and political
activities that are tied to the campaign. In contrast, others have included these items as well as other forms of engagement, then found a significant effect of social media use on changes in political engagement (Holt et al., 2013). Alternatively, Towner’s (2013) null effects may be explained by the three month timespan and the minimal changes in social media use within this three month period (see Table 1, pg. 532). Holt et al. (2013) collected data with a random sample of Swedish youth over a five month period and found significant effects of social media on changes in political engagement after controlling for prior levels of engagement and political interest.

The value of my study over Holt et al. (2013) is that I examine different elements of social media use and the differing effects on engagement. Holt et al. (2013) combines commenting or discussing politics on the Internet, reading and writing blogs, as well as following/friending politicians. My study suggests that each of these items will have differing effects on engagement. Like others (Bode et al., 2014; Tang & Lee, 2013), I found that the largest direct effect of social media on engagement relates to the formation of social connections. Other studies have buried this measure in composite scales and thus have not identified the potential of social media in terms of building social connections that can translate into political engagement (see Conroy et al., 2011; Holt et al., 2013; Towner, 2013). Blurring these measures impedes developing a precise theory of how social media affects engagement.

As a further advantage, this study examined the mechanisms through which social media affects engagement using simultaneous equation modeling. Creating social connections through social media use has a direct effect on engagement, but also an indirect effect by increasing levels of civic awareness. This finding helps advance theory about why social
media affects engagement. By connecting to community organizations, social movement
organizations, politicians, and political parties, social media users develop a greater awareness
of the world around them, which in turn, affects political engagement.

Can social media ameliorate participation differences based on age? After controlling
for prior levels of political engagement, political interest and prior receipt of digital messages
on politics, social media use remains a significant predictor of changes in political
engagement among youth. The findings suggest that social media can stimulate political
engagement among a broader set of youth. The effects of social media are not confined to
those who are already political interested and engaged.

Furthermore, one of the popular theories of why youth are less engaged, compared to
older citizens, is that they lack relevant knowledge (Kaid, McKinney, & Tedesco, 1997;
Milner, 2010; Zukin et al., 2006). Most studies document low levels of knowledge with
factual tests of knowledge about institutions and politicians (e.g., Milner, 2010). While this
type of knowledge is highly correlated with voting (see Smets & Van Ham, 2013), this is not
the only knowledge that is relevant to political engagement. If political engagement is broadly
conceived to include boycotts, petitions, as well as marches and demonstrations, knowledge
needs to be broadly construed to include the types of issues addressed through such modes of
participation. Civic awareness addresses this broader knowledge base. In this study, social
media was found to correlate with civic awareness and political engagement. As such, social
media can contribute towards building the knowledge required to engage in civic and political
life. If lack of knowledge is preventing youth from engaging in civic and political life, then
social media could help ameliorate this knowledge gap, reducing participation inequities
between young and old. The study of civic awareness is, relative to political knowledge,
relatively underdeveloped. Further studies should explore additional ways to measure civic awareness as well as explore how changes in levels of civic awareness map on to changes in civic engagement, such as volunteering for or donating to social causes.

Endnotes:
1 The focus on infrequent and inappropriate political behaviours has consequences for the distribution of the political engagement variable in studies of youth. In a survey of students, Tang and Lee (2013) construct a political engagement measure with range of 0-7 and the average is 1.16. Likewise, Bode et al.’s (2014) measure of engagement among youth has a 20-point range, but an average of 1.37. With such skewed distribution, a core assumption of ordinary least squares is violated, raising questions about the accuracy of their findings.
2 Because I control for prior levels of engagement, the interpretation of the coefficients is about how social media affects changes in political engagement. This is an autoregressive model, because wave 1 and wave 2 measures are identical and I control for wave 1 political participation in the model. I do not have an autoregressive model for the social media variables, because I use different measures of social media use at wave 1 (one measure) as wave 2 (various measures) (see page 105 of Dimitrova et al. (2011) for a similar discussion with regard to political knowledge in a longitudinal design).
3 Other researchers do not isolate the different activities into specific questions and instead ask a single survey question about posting comments, links, and status updates with political content (Hargittai and Shaw, 2013; Towner, 2013; Vitak et al., 2014). They reported percentages ranging from 20% to 24% for their surveys of students (Hargittai and Shaw, 2013; Towner, 2013; Vitak et al., 2013). These studies were conducted in 2008 (cf: 2014); as such, the greater frequencies in my sample could be due to the evolution of social media use over time.
4 Unlike Towner (2013), I do not use a lagged version of the social media variable. Instead, I use a different social media use variable measured at wave 1 as a statistical control. This measure is significantly correlated with the measures of social media presented in this study (see Table 4). However, it is possible that the different results are related to this measurement. However, given the difference between Towner’s findings compared to other longitudinal studies, I would opt for an explanation of differences in relation to the measurement approach.
References


Table 1: Respondent Profile

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Respondents</th>
<th>Other surveys of youth/students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>62%</td>
<td>64% females according to Registrar’s records in 2013</td>
</tr>
<tr>
<td>Age</td>
<td>25.05 (7.09)</td>
<td>25 years according to Registrar’s records in 2013</td>
</tr>
<tr>
<td>Current Student</td>
<td>81%</td>
<td></td>
</tr>
<tr>
<td>Father’s education (HS, some, degree)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Mother’s education (HS, some, degree)</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Civic awareness scale</td>
<td>8.17 (2.49)</td>
<td></td>
</tr>
</tbody>
</table>

**Political Engagement**

<table>
<thead>
<tr>
<th>Voting</th>
<th>58%</th>
<th>45-49% of 18 to 25 year olds in Cohen et al. (2012); 62% of students in Hargittai &amp; Shaw (2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signing a petition</td>
<td>53%</td>
<td>16% of 15 to 25 year olds in Cohen et al. (2012); 31% of students in Vitak et al. (2009); 36% of Swedish 18-33 year olds in Holt et al. (2013); 56% of political science students in Conroy et al. (2012); 65% of students in Hargittai &amp; Shaw (2013)</td>
</tr>
<tr>
<td>Boycotting</td>
<td>46%</td>
<td>9% of 15 to 25 year olds in Cohen et al. (2012); 11% of political science students in Conroy et al. (2012); 65-71% of Canadian students in Stolle et al. (2005)</td>
</tr>
<tr>
<td>Participating in a march or demonstration</td>
<td>8%</td>
<td>6% of 15 to 25 year olds in Cohen et al. (2012); 7% of Swedish 18-33 year olds in Holt et al. (2013)</td>
</tr>
<tr>
<td>Contacting a public official</td>
<td>13%</td>
<td>6% of Swedish 18-33 year olds in Holt et al. (2013)</td>
</tr>
<tr>
<td>Wave 2 political engagement (0-5)</td>
<td>1.72 (1.23)</td>
<td></td>
</tr>
</tbody>
</table>

**Political Dispositions**

| Wave 1 political engagement (0-5)                  | 1.28 (1.20) |                                                                                               |
| Wave 1 political interest (0-4)                    | 1.37 (.94)  | 2.7 to 2.9 for 16 to 21 year olds in Kahne et al. (2011)                                        |
| Wave 1 received digital message about politics     | 40%         | 12-27% of teenagers in Lee, Shah, & McLeod (2013)                                              |
Table 2: Interaction about political issues through social media

<table>
<thead>
<tr>
<th>Activity</th>
<th>Respondents</th>
<th>Percentage for 18-29 year olds, as reported by Rainie et al., 2012 n=323</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post links to an issue for others to read</td>
<td>56%</td>
<td>33%</td>
</tr>
<tr>
<td>Repost content related to an issue that was originally posted by someone else</td>
<td>63%</td>
<td>36%</td>
</tr>
<tr>
<td>“Like” or promote material related to issues that others have posted</td>
<td>80%</td>
<td>44%</td>
</tr>
<tr>
<td>Post your own thoughts or comments on an issue</td>
<td>51%</td>
<td>42%</td>
</tr>
<tr>
<td>Average</td>
<td>2.32 (1.52)</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Making Connections through Social Media

<table>
<thead>
<tr>
<th>Activity</th>
<th>Respondents</th>
<th>Other surveys of youth/students</th>
</tr>
</thead>
<tbody>
<tr>
<td>a community organization, such as charity or non-profit organization that raises funds or provides services to the needy</td>
<td>66%</td>
<td>38% of Hong Kong students have friended a social movement activist on Facebook in Tang &amp; Lee (2013)</td>
</tr>
<tr>
<td>a political party</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>a political group that is not affiliated with a party, such as an environmental organization or a human rights organization</td>
<td>31%</td>
<td>8% of Swedish 18-33 year olds in Holt et al. (2013); 9% of their college students reported becoming a fan of a political candidate in Conroy et al. (2011); 25% of 18-29 year olds follow candidates as reported by Rainie et al. (2012); 26% of Hong Kong students have friended a political representative on Facebook in Tang &amp; Lee (2013); 25-40% of students followed or became a fan of a political candidate on a SNS as reported in Towner (2013); 28% of 15 to 25 year olds in Cohen et al. (2012)</td>
</tr>
<tr>
<td>elected officials, candidates for office or other political figures</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>1.16 (1.16)</td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Zero order and partial correlation matrix

<table>
<thead>
<tr>
<th>Political engagement</th>
<th>Correlation</th>
<th>1.000</th>
<th>0.195</th>
<th>0.181</th>
<th>0.215</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.003</td>
<td>0.005</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Civic awareness wave 2</td>
<td>Correlation</td>
<td>0.279</td>
<td>1.000</td>
<td>0.122</td>
<td>0.151</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.000</td>
<td>0.061</td>
<td>0.020</td>
<td></td>
</tr>
<tr>
<td>Interaction about issues at wave 2</td>
<td>Correlation</td>
<td>0.285</td>
<td>0.155</td>
<td>1.000</td>
<td>0.402</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Connections through social media at wave 2</td>
<td>Correlation</td>
<td>0.403</td>
<td>0.220</td>
<td>0.449</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Female=1</td>
<td>Correlation</td>
<td>-0.009</td>
<td>-0.171</td>
<td>0.083</td>
<td>-0.005</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.849</td>
<td>0.000</td>
<td>0.070</td>
<td>0.910</td>
</tr>
<tr>
<td>Age group (4 groups)</td>
<td>Correlation</td>
<td>0.103</td>
<td>0.118</td>
<td>0.035</td>
<td>-0.044</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.027</td>
<td>0.014</td>
<td>0.443</td>
<td>0.364</td>
</tr>
<tr>
<td>Current student</td>
<td>Correlation</td>
<td>-0.026</td>
<td>0.039</td>
<td>0.016</td>
<td>-0.056</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.586</td>
<td>0.417</td>
<td>0.729</td>
<td>0.244</td>
</tr>
<tr>
<td>Political engagement wave 1</td>
<td>Correlation</td>
<td>0.602</td>
<td>0.209</td>
<td>0.200</td>
<td>0.382</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Political interest wave 1</td>
<td>Correlation</td>
<td>0.255</td>
<td>0.296</td>
<td>0.134</td>
<td>0.234</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.000</td>
<td>0.000</td>
<td>0.004</td>
<td>0.000</td>
</tr>
<tr>
<td>Digital media use for political messaging at wave 1</td>
<td>Correlation</td>
<td>0.351</td>
<td>0.104</td>
<td>0.189</td>
<td>0.223</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.000</td>
<td>0.084</td>
<td>0.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Father's level of education</td>
<td>Correlation</td>
<td>0.107</td>
<td>0.046</td>
<td>0.065</td>
<td>0.064</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.041</td>
<td>0.399</td>
<td>0.212</td>
<td>0.250</td>
</tr>
<tr>
<td>Mother's level of education</td>
<td>Correlation</td>
<td>0.059</td>
<td>0.057</td>
<td>0.079</td>
<td>0.053</td>
</tr>
<tr>
<td></td>
<td><em>p value</em></td>
<td>0.255</td>
<td>0.289</td>
<td>0.127</td>
<td>0.329</td>
</tr>
</tbody>
</table>
**Figure 1: Social Media, Civic Awareness and Political Engagement, Controlling for Demographic and Wave 1 Political Dispositions (standardized estimates)**

![Diagram showing the relationship between interaction about issues, civic awareness, and political engagement.]

**Table 5: Direct and Indirect Effects on Political Engagement (see Figure 1)**

<table>
<thead>
<tr>
<th></th>
<th>Direct Effects</th>
<th>Indirect Effects</th>
<th>Total Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction about political issues through social media</td>
<td>.101 p = .042</td>
<td>.012 p = .183</td>
<td>.113 p &lt; .024</td>
</tr>
<tr>
<td>Making connections through social media</td>
<td>.150 p &lt; .003</td>
<td>.020 p = .049</td>
<td>.170 p &lt; .001</td>
</tr>
</tbody>
</table>

---

1. The focus on infrequent and inappropriate political behaviours has consequences for the distribution of the political engagement variable, which confounds the effect of political interest with the interest of other political activities. This implies that conclusions drawn from such studies are potentially biased towards infrequent and inappropriate political activities. As a result, the distribution of the political engagement variable becomes skewed towards lower values, with the mean being less than the median (cf. Donato, 2013).

2. Because I control for prior levels of political engagement, the interpretation of the coefficients is about how social media usage influences political engagement in addition to the existing level of engagement. This method allows for a more accurate assessment of the impact of social media on political engagement (cf. 2013), as it takes into account the pre-existing level of engagement.

3. Other researchers do not isolate the different activities into specific questions and instead ask a single survey question to measure multiple activities. For instance, they ask about usage of different communication channels (cf. 2013). As such, the greater frequencies in my sample could be due to the evolution of social media use over time, with younger individuals being more likely to engage in social media activities.

4. Unlike Towner (2013), I do not use a lagged version of the social media variable. Instead, I use a different social media measure to control for potential temporal effects. By doing so, I can more accurately assess the contemporaneous effect of social media on political engagement. Additionally, I am comparing my findings with other longitudinal studies, and it is possible that the differences in results could be due to the measurement approach used in each study.