Online News, Civic Awareness, and Engagement in Civic and Political Life

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Abstract The Internet has transformed access to the news with most citizens in western democracies having access at their fingertips. This study examines how youth consume news online highlighting news consumption through social networking sites and other online sources. This study uses two-wave longitudinal survey data of young people to examine how online news affects civic awareness and engagement in civic and political life. The findings suggest that online news will have minimal direct effect on civic and political engagement. Instead, the effects of online news are indirect. Online news increases civic awareness, which indirectly affects engagement. The indirect effects of online news are more pronounced for voting and boycotting, compared to signing petitions. Online news may be able to address participation inequalities between younger and older citizens by building civic awareness among youth and indirectly, affecting participation in civic and political life.

Keywords

Social networking sites, civic participation, political engagement, youth, online news

Introduction

The Internet has transformed the consumption of news. For the majority of citizens in western democracies, the news can be readily accessed through a single push of a button on a handheld device (Drake, 2014; Eurostat, 2014; Statistics Canada, 2014). In a meta-analysis, Boulianne (2009) finds that online news has the strongest effect on engagement, compared to other uses of the Internet. The study is a unique contribution to the literature because it focuses

on youth, explores news consumed through social networking sites, and examines mediators in the relationship between online news and engagement using longitudinal data. This study uses a two-wave study of youth to examine how civic awareness mediates the effects of different news sources online (social networking sites and other online news sources) on different types of engagement (signing petitions, boycotting, and voting). The two-wave study moves research beyond correlation analysis into causal analysis because longitudinal data can help establish the temporal ordering of key variables (Frees, 2004) and thus, are appropriate for assessing mediated effects. The examination of mediated effects helps advance the theory of how online news may transform engagement in civic and political life. Furthermore, the study was conducted outside a specific election campaign providing a glimpse in how social media affects civic and political engagement in everyday life.

News on social networking sites

Social networking sites are a critical mechanism for gathering information or news from family, friends, or traditional news media organizations (Dimitrova et al 2014; Gil de Zúñiga et al 2013; Holt et al 2013; Pasek et al 2009; Towner, 2013). Approximately half of Facebook users follow traditional news sources through Facebook, but more importantly, 78% of Facebook users report being exposed to the news incidentally through social network ties (De Silver, 2014). Social networking sites have eased the process of news sharing amongst network members. Now, a user has only to click on "retweet" or "like", then all members of one's social network will have access to the news story. This news exposure may have a stronger effect on users, because this news is filtered through trusted family and friends (Bode, 2012). Social networking sites can facilitate the sharing of news from those who are well-informed to those who are less

informed through incidental learning (Dimitrova et al 2014; Tang and Lee, 2013; Xenos et al 2014). Cohen et al (2012) find that 45% of 15 to 25 years olds reported getting their news from family and friends through Facebook or Twitter at least once during the past week. As such, social networking sites may be particularly important for informing young people.

A variety of studies have examined the use of social networking sites to consume news (Baumgartner and Morris, 2010; Bode, 2012; Chan and Guo, 2013; Kim et al 2013; Martin, 2013; Tang and Lee, 2013; Valenzuela et al 2012; Valenzuela, 2013; Zhang et al 2013). Often, these types of uses are combined with other uses of social networking sites, making it difficult to isolate the effects of news consumption through social networking sites (Boulianne, 2015). Gil de Zúñiga and colleagues isolate the use of social networking sites to keep informed and follow current events; they find positive and significant relationships with civic and political engagement (Gil de Zúñiga et al 2012). However, all of these studies are based on cross-sectional surveys, which are weak for assessing causality. In particular, cross-sectional studies cannot assess whether news consumption is causing engagement or engagement is leading to news consumption (Boulianne, 2011). The distinction is important because the causal direction helps explain whether social networking sites will reinforce mobilization amongst those who are already engaged or whether social networking sites will mobilize a new set of participants into civic and political life, such as youth.

A handful of studies have collected longitudinal data (Bode et al 2014; Dimitrova et al 2014; Ekström et al 2014; Gil de Zúñiga et al 2014; Holt et al 2013; Towner, 2013). In a meta-analysis on social media and engagement, Boulianne (2015) reports that 57% of estimates from longitudinal studies are positive, but few estimates are statistically significant. These findings raise doubts about a substantial effect of social media on engagement. However, the findings

may be partially explained by measurement issues. These longitudinal studies do not examine the nuances of social media in terms of news consumption. Instead, the studies bundle news or informational uses of social media with other types of social media use, such as liking or friending politicians (Bode et al 2014; Dimitrova et al 2014; Holt et al 2013). Gil de Zúñiga et al (2014) and Towner (2013) focus on news or informational uses of social media using longitudinal data. Both find positive effects, but whether the effect is significant depends on the type of social media and how the effects are modeled. This paper seeks to explain these different findings by focusing on the mechanisms through which online news consumed through social networking sites affects 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 assess mediators, they use a series of single equation models inferring, but not testing, causal pathways among the variables. For example, looking at political knowledge, the premise is that social media could increase political engagement by increasing political knowledge (Baumgartner and Morris, 2010; Conroy et al 2012; Dimitrova et al 2014; Martin, 2013; Pasek et al 2009). 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 and Morris, 2010; Dimitrova et al 2014; Martin, 2013). Using this approach often leads to finding that the mediator, political

knowledge, does not have a significant effect on engagement (e.g Bode, 2012; Dimitrova et al 2014; Martin, 2013).

Other studies attempt to examine mediated effects through path analysis of cross-sectional data, but these studies have little grounds on which to establish the causal ordering of the variables (Tang and Lee, 2013; Gil de Zúñiga et al 2012, 2013). The value of longitudinal data is in establishing the temporal order of variables, meeting a core criterion for causality (Frees, 2004). This study will use simultaneous equation modeling of two-wave panel data, which concurrently estimates the direct and indirect effects of the independent variable on the dependent variable. This analysis will illustrate how civic awareness mediates the effects of online news on civic and political life.

Civic Awareness

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 narrowly focused on knowledge of political institutions and politicians (McLeod et al 1996, 1999; Milner, 2002; Pasek et al 2006), instead of a broader assessment about what is happening in the world. This distinction is important when discussing the impact of this awareness on engagement in civic and political life. Knowledge of political institutions and politicians affect voting (Smets and Van Ham, 2013), but many issues cannot be addressed by casting a ballot, making this type of knowledge less relevant. Many forms of engagement look beyond the state. Petitions, boycotts and other protest-type behavior may target the injustices caused by multinational corporations, such as exploitive labour practices or environmental degradation. These forms of engagement

require knowledge that is more broadly construed. As such, this study seeks to examine a

citizen's 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 and Keeter, 1996; McLeod et al 1996, 1999; Milner, 2002), this

study hypothesizes that online news will increase civic awareness, which in turn, increases

engagement in civic and political life. Online media is expected to work in the same way as

traditional media, but the research is far from conclusive. De Waal and Schoenbach (2008) asked

survey participants to list issues affecting the Netherlands and the world. They coded the survey

responses into political and non-political issues as well as counted the number of issues

mentioned (de Waal and Schoenbach, 2008). They found mixed results about the effects of

traditional and online news on awareness (de Waal and Schoenbach, 2008). Pasek et al (2006)

examine "political awareness" in terms of factual knowledge of 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 political life.

Engagement

Using social media and other news sources could build a citizen's awareness about what is

happening in the world. The more a citizen knows about the world, the more likely the citizen

will find something that interests them enough to become engaged in the political process. In this

context, engagement must be broadly constructed to encompass varied responses to issues facing

the world. In other words, engagement cannot be narrowly defined in terms of campaign

participation. Instead, engagement may take the form of non-institutionalized activities, such as

signing petitions or boycotting, which are more appropriate for some issues of social injustice.

Studies typically divide forms of engagement into civic and political activities. Political

activities are those that intend to influence government action (Verba et al 1995). For example,

Chan (2014) examines voting and other campaign activities separate from donating, signing

online petitions, and other "civic" activities. This pattern is replicated in many studies in this

field (see meta-analyses Boulianne, 2009, 2015). However, this separation may not be

sufficiently nuanced. Gil de Zúñiga, Copeland, and Bimber (2013) find that the effect of Internet

use on engagement was stronger for political consumerism (boycotting and buycotting), than on

an index of engagement which includes attending political rallies, contacting public officials,

posting political signs, and participating in demonstrations. In another study, Bimber et al (2014)

find that the effects of online information are consistently significant for political talk, whereas

the effects for voting, working for a political party, and donating depend on the election year

(also see Bimber and Copeland, 2013).

Much of the existing research on social media and engagement is campaign-focused

(Boulianne, 2015). Researchers acknowledge that the effects could be campaign-specific (Bode,

2012; Bode et al 2014; Dimitrova et al 2014; Gil de Zúñiga et al 2013; Hargittai and 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 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 2014; Gil de Zúñiga et al 2012; Holt et al

2013; Towner, 2013). These measures may not be appropriate for studying youth's 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 et al 2005; Zukin et al 2006). Stolle et al (2005) found that 72% of Canadian students engaged in buying some products over other products for ethical or political concerns and 65% of students engaged in boycotting. In terms of petitions, studies of American students estimate that between 56% and 65% of students have signed petitions in the past year (Conroy et al 2012; Hargittai and Shaw, 2013). As such, this research is unique because it is not focused on a specific campaign, but rather politics inherent in everyday life. Using this broad definition of engagement, this research examines how different news consumption methods (social networking sites and other online news sources) affect youth's civic awareness and whether these effects translate into increased engagement in civic and political life.

Methods

To investigate how online news affects civic awareness and engagement, this study uses a two-wave longitudinal study of young people. The first wave of the web survey was collected while students were enrolled at MacEwan University (Edmonton, Alberta, Canada). Students were contacted in 2010, 2011 or 2013 (n=875). The response rate to the first wave surveys varied between 20% and 60% (see Boulianne, 2013; Boulianne and Bailey, 2014). In January 2014, this group was re-surveyed. Approximately 60% of participants completed the second wave survey (n=495). If participants' addresses were recently updated in the Registrar's Office, then participants were sent a $5 bill as a token of appreciation. This bill was distributed as part of a pre-notification letter, which was sent to all participants.

In terms of the respondent profile, this sample is older, on average, than other student samples (see Bode, 2012; Hargittai and Shaw, 2013; Valenzuela et al 2009; Vitak et al 2011), because it includes current and former students. However, almost half of respondents are between the ages of 19 and 22 years. During the first wave of the survey, the sex and age distribution matched the Registrar's records for the student body (see Boulianne, 2013; Boulianne and Bailey, 2014). In terms of parental education, the sample is more diverse than expected. Approximately 30% of respondents reported that their father did not have any college training. This diversity is to be expected as the institution is transitioning away from being a community college (see Boulianne and Bailey, 2014 for a further discussion).

Measures

I use the American National Election Studies questions about online news use. Participants were instructed to think about their news consumption in terms of current events, community life, public affairs, as well as local, national, and international news. They were instructed to exclude news consumption about sports and weather. They were asked, "During a typical week, how many days do you use the news on the Internet?" This question was asked during Wave 1. Descriptive statistics are reported in Table 1.

[insert Table 1 here]

The next series of questions is borrowed from Gil de Zúñiga et al (2012). The questions are about the frequency of using social networking sites to: to stay informed about current events and public affairs; to stay informed about the local community; to get news about current events from mainstream news media; and to get news about current events through friends (Gil de Zúñiga et al 2012: 324). Instead of a 10-point response scale on each of the four questions, I used

a five-point response scale to enable the labelling of each response option. The additive scale has a Cronbach's alpha of .866. This alpha is identical to Gil de Zúñiga et al (2012) alpha of .87 (page 324). The question series was asked at Wave 2.

Civic awareness is assessed using two approaches. One approach measures respondents' awareness of 10 top news stories of 2013. Participants were asked to identify whether or not they were aware of the following news stories: municipal elections, Edmonton downtown arena deal, closing of Edmonton's City Centre airport, investigation into the deaths of children in provincial care, election of a new Pope, Obamacare and the US government shutdown, death of South African leader Nelson Mandela, Typhoon Haiyan in the Philippines, Snowden's release of classified files, and the Bangladesh factory collapse. The news stories were generated using a review of broadcast and print news media's top news stories for 2013. The problem with this measure is that it could be challenged for relevancy, as is often the debate with political knowledge measures (see Mondak, 1995). To address this issue, I supplement this measure with a subjective assessment of civic awareness (Mondak, 1995).

Participants were asked to rate their civic awareness at the provincial and global level. The questions were "To what degree would you say that you are aware of current events in your province/globally?" The two measurement approaches were combined into a composite index; the Cronbach's alpha is equal to .608. This combined measure can withstand criticisms about which news stories are most relevant and criticisms that subjective assessments are inherently unreliable (Mondak, 1995).

Political engagement is assessed using a three-item index of engagement and highlighting specific activities: voting, participating in boycotts, and signing petitions. These three activities were chosen from a larger set of political activities. These three activities were chosen because of

their popularity among the youth sampled. Participants were asked whether or not they engaged in each of these activities in the past 12 months. These questions were asked in Wave 1 and in Wave 2. The Cronbach's alpha for Wave 1 is .413 and Wave 2 is .404.

Analysis

For the multivariate analysis, I examine the relationships among online news sources (social networking sites and other online news sources), civic awareness, and engagement (as a combined measure of three items, then as three individual items) examining direct and indirect effects. The model controls for engagement at Wave 1, age, gender, father's education, and employment status. Student status and year of participation in wave 1 of the study were also considered as possible predictors, but these variables did not correlate with any key variables in any of the models tested. These two variables were dropped from analysis.

The model was estimated using AMOS 22, which permits an analysis of categorical dependent variables, using the Markov Chain Monte Carlo method (MCMC). The estimates are produced using a Bayesian approach. This approach does not assume a normal distribution of the estimates, but rather estimates the parameters of the model using draws from the posterior distribution (Muthen and Asparouhov, 2012). With this approach, parameter estimates are variable and can change with further draws on the posterior distribution (Byrne, 2010; Muthen and Asparouhov, 2012). The coefficients reported are means from the posterior distribution (Byrne, 2010) and can be viewed as a snapshot at a particular point in the iteration process. The coefficients are taken from a converged model. In AMOS, the coefficients have credibility intervals reported at the 95% and 99% intervals. The coefficients are deemed credible at these levels as long as the upper and lower boundaries do not include the value of zero (Muthen and

Asparouhov, 2012). These intervals are denoted with one asterisk for the 95% level and two

asterisks for the 99% level. AMOS does not report p-values. For a discussion of the value of the

Bayesian structural equation modeling approach, see Muthen and Asparouhov (2012).

Findings

Figure 1 illustrates the model entered into AMOS for estimation. If there is no arrow

connecting the variables, there is an assumed lack of relationship. If there is an arrow, but the

arrow is hyphenated, the relationship is not statistically significant. All other arrows depict a

significant relationship. Table 2 lists the standardized coefficients for this model. There are 23

estimated relationships among the different variables.

[insert Figure 1 here]

[insert Table 2 here]

In this model, age and gender do not affect the use of news on social networking sites,

but do affect the use of other online news sources. Female youth are less likely to consume

news online, compared to male youth (-.249**). Younger youth are less likely to consume

news online, compared to older youth (.154**). Age and gender also affect civic awareness.

Female youth score lower on civic awareness, compared to males (-.226**). Younger youth

score lower on civic awareness, compared to older youth (.097*). Age affects levels of

engagement during wave 1 (.113*), but not at wave 2 (-.008). Gender affects levels of

engagement at wave 2 (.130*), but not at wave 1 (-.121).

Prior levels of engagement do not predict consumption of online news through social

networking sites (.008) or other online sources (.091). These two sources of online news do

not have a direct effect on engagement at wave 2 (.006, .064). These two sources of online

news do affect civic awareness. Through civic awareness, these two online news sources indirectly affect levels of engagement at wave 2. News consumed through social networking sites affect civic awareness (.159**), which indirectly leads to engagement (.040**). Other online news sources affect civic awareness (.217**), which indirectly leads to engagement at wave 2 (.054**). The magnitude of the indirect effect differs by type of engagement activity.

In all models of specific political activities, news consumed through social networking sites and other online news sources have a strong and significant relationship with civic awareness, but there are no direct effects of these online news sources on engagement. In two of the three models, there are significant indirect effects of these online news sources on engagement at wave 2 (Table 3). The strongest indirect effects are observed for voting (Figure 2). These strong indirect effects are, in part, attributable to the strong relationship between civic awareness and voting (.317**). This strong relationship allows for significant pathways from online news sources to civic awareness then to voting at wave 2, controlling for voting at wave 1 (Table 3). Consuming news through social networking sites has an indirect effect on voting through civic awareness (.049**). Consuming other sources of online news also has an indirect effect on voting through civic awareness (.070**).

[insert Table 3 here]

[insert Figure 2 here]

The pattern of significant and non-significant effects is identical for Figure 1 (three-item engagement measure) as Figure 2 (focusing on voting). However, there are some differences in the magnitude of the coefficients. The relationship between voting at wave 1 and civic awareness at wave 2 is .364** (results not shown), whereas this relationship is weaker for the three-item engagement measure at wave 1 and civic awareness (.182**). As

mentioned, the relationship between engagement at wave 2 and civic awareness is also stronger for voting, than for the three-item engagement measure. In sum, civic awareness plays a central role in modeling prior and current voting behavior.

As illustrated in Figure 3, the effect of civic awareness on engagement is smaller in magnitude for boycotting (.191**), compared to voting (.317**). However, the relationship is strong enough to produce significant mediated effects of online news sources on engagement through civic awareness (Table 3). Consuming news through social networking sites has an indirect effect on boycotting through civic awareness (.029*). Consuming other sources of online news also has an indirect on boycotting through civic awareness (.042**). There are no direct effects of social networking sites and other sources of online news on boycotting at wave 2. Overall, the findings demonstrate that the model for boycotting is quite similar to the model for voting.

[insert Figure 3 here]

In general, focusing on boycotting (Figure 3) produces a similar pattern of significant and non-significant effects as illustrated in Figure 1 (three-item engagement measure). However, there are some differences. For boycotting, employment status has a significant effect (.193*) on boycotting at wave 1 (results not shown), whereas for the three-item engagement measure, employment status did not have a significant effect on wave 1 engagement. Gender does not predict boycotting at wave 2 (.093), whereas gender did affect the three-item engagement measure at wave 2 (.130*). Aside from these minor differences, the model for boycotting is quite similar to the model for the three-item engagement measure.

In the case of signing petitions, there are also no direct effects of online news (social networking sites and other online news sources) on engagement at wave 2 (Figure 4). Unlike

voting and boycotting, civic awareness does not have a significant effect on signing petitions at wave 2 (.107). There are positive indirect effects of online news on engagement through civic awareness (Table 3). However, for petitions, this indirect effect fails to reach statistical significance.

[insert Figure 4 here]

Furthermore, signing petitions at wave 1 does not affect civic awareness at wave 2 (.059). As such, civic awareness does not have an explanatory role in explaining the signing of petitions among youth. Signing petitions is different from voting and boycotting in another respect. Signing petitions at wave 1 is significantly related to (.142*) consuming other sources of news online at wave 1 (results not shown), whereas for the three-item engagement measure, this relationship is not significant (.091). Also, father's education predicts (.176*) signing petitions at wave 1 (results not shown), whereas father's education was not a significant predictor of the three-item engagement measure. In sum, the findings demonstrate that the model for signing petitions is slightly different than voting or boycotting.

Discussion

Prior studies have examined the effects of online news, including news through consumed through social networking sites, on engagement (Bimber et al 2014; Bimber and Copeland, 2013; Bode et al 2014; Chan, 2014; Dimitrova et al 2014; Gil de Zúñiga et al 2013, 2014; Martin, 2013; Towner, 2013). These studies tend to focus on multi-item measures of civic and political engagement, whereas the magnitude of the effect of online news on engagement may depend on the specific activity (Bimber et al 2014; Bimber and Copeland, 2013). The process of multi-item indexing has also been applied to research on social media

effects (Boulianne, 2015). Studies that examine specific activities find differences in the magnitude of the effect of social media (Baumgartner and Morris 2010; Hargittai and Shaw, 2013; Valenzuela, 2013). Hargittai and Shaw (2013) found significant relationships for signing petitions, but no effects on voting in the 2008 presidential election based on a study of American students. Baumgartner and Morris (2010) also surveyed American students. Their study was conducted in 2007 and they found that social media did not have significant effects on signing a petition or boycotting. Valenzuela (2013) also did not find a significant relationship between petitioning authorities and social media among a sample of Chileans. All of these studies were cross-sectional and can only assess correlation, not causation. This study offers longitudinal data to affirm that social media effects depend on the type of civic or political activity.

In this study, signing petitions was distinct from boycotting and voting as an activity. The model provided multiple tests of how online news affects engagement, as well as multiple tests of how engagement affects consumption of online news. Only one of the tests produced a significant coefficient. Signing petitions at wave 1 relates to consuming other sources of online news at wave 1. Further research should examine whether online news reinforces a pattern of signing petitions or whether online news encourages signing petitions. This research needs to look at specific political activities, rather than bundling these activities into multi-item measures. Existing research tends to aggregate signing petitions with boycotting and voting, blurring the distinctiveness of this political activity (Boulianne, 2009, 2015). Further research should also consider different mediators in the relationship between online news and signing petitions, since civic awareness was not affected by signing petitions at wave 1, nor did civic awareness affect signing petitions at wave 2. Furthermore, such research

should attend to parental influences on engagement. Father's education predicts whether youth had signed a petition. However, it is unclear why this is the case: can the results be explained by socioeconomic background or is the correlation indicative of a socialization effect where signing petitions is regarded as an acceptable form of political engagement in educated households?

Overall, the findings affirm that online news, consumed through social media or other sources, has an indirect and significant effect on engagement. Are the findings generalizable? A popular way to establish the generalizability of a study is to compare the demographic composition of the sample with Census data (e.g Gil de Zúñiga et al (2012)). This approach offers some assurance of representativeness, but this approach cannot rule out bias related to the variables under study. Instead, the correlations amongst key variables could be scrutinized for their similarity to other studies. In a meta-analysis, Boulianne (2009) reports that the average standardized effect size of informational uses of the Internet on engagement is .13 (page 201). In this study, use of other online news sources has a bivariate correlation with the three-item engagement measure of .136 and a partial correlation of .107.

In terms of social media news, the survey questions were based on work by Gil de Zúñiga et al (2012). Their study was based on a cross-sectional survey of an online panel of Americans who were selected to match Census characteristics. Their estimated relationship between social media news and political engagement was .136 controlling for a variety of confounding variables (Gil de Zúñiga et al 2012: 328). This estimate is similar to the bivariate correlation with the three-item engagement measure (.123) and a partial correlation of .118. While the Gil de Zúñiga study is based on a more diverse sample, the correlation was matched

in this youth sample. The similarity in the estimates provides some assurance of both the reliability and validity of the findings. I would argue that the effects are generalizable.

Of 36 studies examining social media and engagement, only half of all estimates are statistically significant (Boulianne, 2015). For longitudinal studies specifically, only a quarter of the estimates are statistically significant (Boulianne, 2015). Longitudinal studies on social networking sites and engagement rarely find a significant effect (Bode et al 2014; Gil de Zúñiga et al 2014; Dimitrova et al 2014; Ekström et al 2014; Holt et al 2013; Towner, 2013). However, focusing on direct effects would mislead researchers into a conclusion of null effects. Instead, this study reveals the significant indirect effects of social media on engagement. This study is unique in assessing the mechanisms through which social networking sites could influence engagement in civic and political life. Social networking sites, as well as other sources of online news, have a large and significant effect on civic awareness. By increasing civic awareness, social networking sites produce a significant indirect effect on engagement. Rather than conclude null effects, studies should explore the significant mediated effects of social media on engagement.

Will online news affect participation inequalities between youth and older generations? One of the popular theories of why youth are less engaged, compared to older citizens, is that they lack relevant knowledge (Kaid et al 2007; Milner, 2010; Zukin et al 2006). Most studies document low levels of knowledge with fact-based tests of knowledge about institutions and politicians (e.g Milner, 2010). While this type of knowledge is highly correlated with voting (see Smets and Van Ham, 2013), this is not the only knowledge that is relevant to engagement in civic and political life. If engagement is broadly conceived to include boycotts, petitions and other protest-type behavior, knowledge needs to be broadly

construed to include awareness of the types of issues addressed through such modes of participation. Civic awareness addresses this broader knowledge base. In this study, social networking sites and other online news sources were found to correlate with civic awareness and indirectly, engagement. As such, these news sources 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 these online news sources could help ameliorate this knowledge gap, reducing participation inequities between youth and older citizens.

Further research should examine the differential effects of online news sources on engagement for different groups of youth. For example, this study reveals strong gender-differences in the use of online news, but these gender differences disappear when exploring news consumption on social networking sites. Can social networking sites help ameliorate gender differences among youth in civic awareness? This analysis should also consider dividing female and male youth into different age categories to explore the role of online news, civic awareness, and engagement. This study revealed age differences in patterns of online news use, civic awareness and engagement. The sample size does not permit this segmented analysis. However, the data provide some indication of interaction effects involving age, gender, online news, and civic awareness on engagement. As such, further research should examine the nuances for different segments of youth.

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	Average (Standard Deviation)
Key Demographics	
Female	61.62%
Age (converted into four age groups for analysis)	47.5% 19-22 years
Father's education (high school or less, some college, college degree)	30% high school or less
Employed	69.82%
Independent variables	
Other sources of online news, 7-point scale, Wave 1	2.88 (2.64)
News through social networking sites index, Wave 2	11.00 (3.99)
To stay informed about current events and public affairs, 5-point scale	3.14 (1.22)
To stay informed about the local community, 5-point scale	2.74 (1.15)
To get news about current events from mainstream news media, 5-point scale	2.96 (1.26)
To get news about current events through friends, 5-point scale	3.25 (1.20)
Engagement measures, scale 0 to 3, Wave 1	1.41 (0.95)
Voted at least once in the past	80.61%
Signed a petition in the last 12 months	34.75%
Boycotted in the last 12 months	33.05%
Dependent variables	
Civic awareness, scale 0 to 20, Wave 2	12.87 (3.20)
Self-assessed awareness of provincial issues, 5-point scale	3.04 (0.91)
Self-assessed awareness of global issues, 5-point scale	3.12 (1.06)
Awareness of 10 different news stories	7.58 (2.21)
Engagement measures, scale 0 to 3, Wave 2	1.56 (1.01)
Voted in the past 12 months	58.33%
Signed a petition in the past 12 months	52.67%
Boycotted in the past 12 months	46.39%

Table 1: Descriptive Statistics for Key Variables

	Dependent Variables						
	News on social networking sites	Online news	Engagement wave 1	Civic awareness		Engagement wave 2	
	Direct effects	Direct effects	Direct effects	Direct effects	Indirect effects	Direct effects	Indirect effects
News on social networking sites	--	--	--	.159**	--	.064	.040**
Online news	--	--	--	.217**	--	.006	.054**
Civic awareness	--	--	--	--	--	.248**	--
Engagement wave 1	.008	.091	--	.182**	.021	.487**	.050**
Females=1	-.049	-.249**	-.121	-.226**	-.085**	.130*	-.142**
Age groups	-.062	.154**	.113*	.097*	.046**	-.008	.088**
Father's education	--	--	.068	--	.014	.059	.036
Employed=1	--	--	.128	--	.026	.088	.069

Note: * 95% credibility interval; ** 99% credibility interval.

Table 2: Standardized Direct and Indirect Effects on Three-item Engagement Measure

	Direct Effects	Indirect Effects
Vote. Figure 3		
News on social networking sites	.015	.049**
Other sources of online news	.020	.070**
Boycott. Figure 4		
News on social networking sites	-.047	.029*
Other sources of online news	-.007	.042**
Petition. Figure 5		
News on social networking sites	.086	.016
Other sources of online news	-.017	.024

Note: * 95% credibility interval; ** 99% credibility interval.

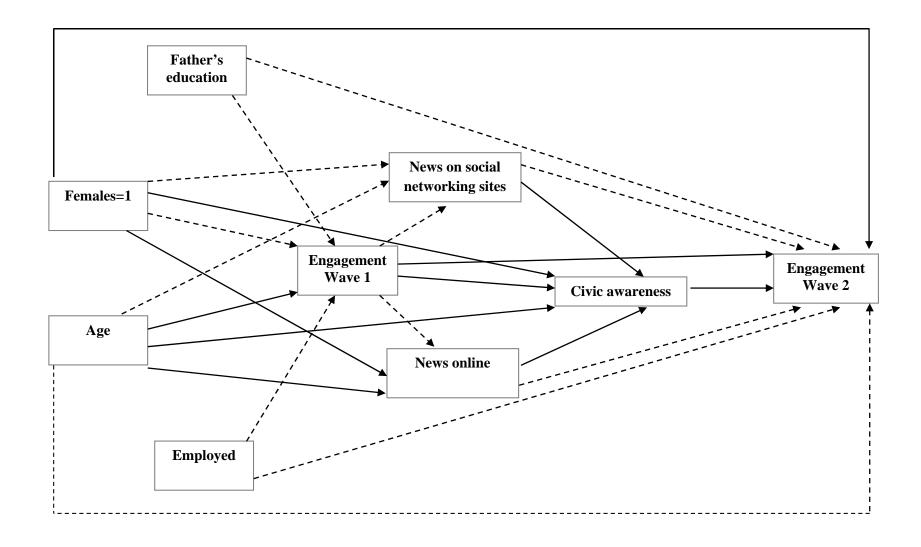Table 3: Standardized Direct and Indirect of News Sources on Specific Activities

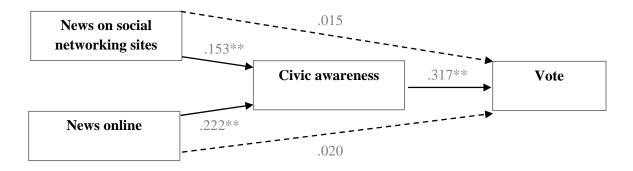Figure 1: Structural Model for Three-item Engagement Measure

Figure 2: The model above controlling for voting at wave 1, gender, age, father's education, and employment status
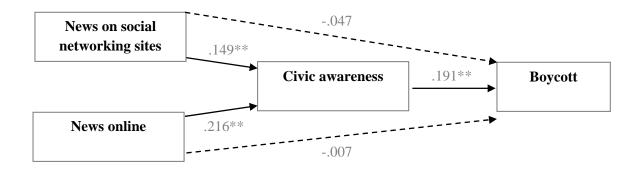

Figure 3: The model above controlling for boycotting at wave 1, gender, age, father's education, and employment status
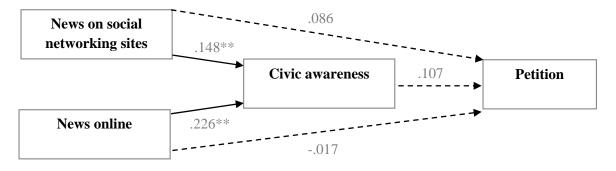

Figure 4: The model above controlling for signing petitions at wave 1, gender, age, father's education, and employment status