Modeling Youth Civic Engagement in a
New World of Networked Publics

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Abstract

In an increasingly *networked public,* the Internet and social media provide rich opportunities for reconnecting youth with their civic life. In a questionnaire study of 578 14-20 year old youth, we explore the relationship between Internet technology experiences, civic efficacy, community identification, and civic engagement in their everyday lives. Contrary to prevailing stereotypes of digital youth, we found that most rely on email and text messaging to communicate with others in their local communities about civic issues. Further, those more experienced with technologies in the public sphere (such as blogs, wikis, and Twitter) had higher levels of civic engagement. Teens who strongly identified with their local community and who had higher levels of civic efficacy were especially likely to be civically engaged. These results highlight the importance of encouraging youth to emotionally connect to their local communities, and to do so online in the public sphere rather than through more personal communication channels.

Introduction

Historically youth have lower civic engagement than adults – those civic and political activities motivated by a desire for social change (Bennett et al. 2009). The participatory culture of the Internet affords new opportunities for connecting youth with civic life, by enabling them to express their personal voice. Given the prominence of social media applications such as Facebook (Hampton et al. 2011, Lenhart et al. 2010), government and non-profit agencies are increasingly seeking to motivate teens toward community activism through social media tools. In order to design better technologies and programs to reach youth, we need a deeper understanding of the communication and information ecosystem through which they currently become civically engaged. In the following paper we first frame the problem by reviewing related theory and research examining the relationship between technology usage and civic engagement in the changing landscape of digitally-enabled social networking. We then describe a questionnaire study that explores the relative importance of technology access, different types of technology experiences, civic efficacy, and identification with local communities in fostering civic engagement for youth.

Theoretical Background and Related Work

Rethinking Collective Action and Civic Engagement

In the past decade, as Internet communication technologies have become integrated with everyday life, the evolving ways that people are networked and mobilized has challenged early theories of collective action (Bimber 2005). Collective action theory (Olson 1965) was first developed to explain how collections of people work together to achieve common social goods. The theory rests largely on the argument that formal organizations are central to finding, motivating, and coordinating groups of people to achieve collective goals. However as our communication landscape is increasingly dominated by *networked publics* (Ito 2008), our notions of how we mobilize people toward civic engagement are adapting to accommodate new social and technological developments that enable more engaged, peer-to-peer, bottoms-up interactions outside of formal organizations. As the cost of participation and coordination through new communication technologies becomes increasingly low, the dependency on formal organizations to orchestrate collective action is also reduced (Bimber 2005).

In recent years, the transformative nature of these networked publics in facilitating emergent social movements such as the Arab Spring or Occupy Wallstreet

has been the object of much interest to researchers in the socio-technical space (e.g., Bennett and Segerberg 2012, Zeynep and Wilson 2012). In this new world of low effort, networked communication, a variety of organizational structures (informal, networked, and individual, in addition to formal) are now capable of achieving the key tasks of collective action: identifying people with common interests, communicating with them as a group, and coordinating their efforts (Bimber 2005).

Enabling Democratized, Participatory Citizenship
Past research has shown positive correlations between online and offline civic behaviors (Smith et al. 2009, Nam 2010, See Kim et al. 2007 for review, Zeynep and Wilson, 2012). As noted by Bennett et al. (2009), this Internet-enabled, participatory model of citizenship affords disenfranchised groups opportunities to have a voice and achieve social change in their own lives. Youth in particular have been the object of some attention, because they consistently show more political apathy than their adult counterparts (Carpini 2000). As noted by Thackeray and Hunter (2010), arming youth with the skills for civic advocacy is of particular value.

> Providing opportunities for youth to successfully participate in social change, giving them a voice, and be involved in civic affairs may develop a generation of youth who carry these skills into adulthood. Armed with advocacy skills and empowered by previous successful experience, these youth may become adults who are involved in larger policy-based decisions…(*p*. 578).

While youth generally have higher political apathy, they have also been shown to be more involved in online civic activities than adults (Kim et al. 2007). This raises the question, how then might we best leverage new social technologies to reach youth and foster effective civic engagement? In order to address this problem, we need a deeper understanding of *why* an increasingly networked public enables people to engage in civic activities.

Personal Social Networks and Mobile Phones
As argued by Thakeray and Hunter (2010), it may be the case it is better reach youth where they spend most of their time online (Lenhart et al. 2010) – in social networking sites. Hampton et al. (2010) found a positive relationship between Facebook usage and the likelihood of attending a politically motivated meeting. Zeynep and Wilson (2012) similarly found in a study of Arab Spring that Facebook was a source for motivating activists to attend protests. There are many examples of Facebook groups or pages representing social movements engaged in political discourse (Mascara and Goggins 2011, Robertson et al. 2009, Robertson et al. 2012), with followers reporting

these pages played an important role in motivating them toward civic activities. Thakeray and Hunter (2010) also argued cell phones should be of primary consideration in designing for reaching youth for advocacy purposes. Youth are increasingly accessing each other and the Internet through mobile devices (Lenhart et al. 2010) . Zeynep and Wilson (2012) found voice phone calls, text messaging, and Twitter and were also significant communication mediums used to motivate people to attend protests.

Alternatively, social networking sites and mobile phones may not be the most appropriate channels for connecting youth to their public, civic spheres. On the one hand, Facebook is arguably a networked public, where people engage with strangers through friends of friends, groups, and pages (Boyd 2010). On the other hand, Facebook users know most of their Facebook friends personally (93%, according to Hampton et al. 2011), and the discourse of social networking sites tends to be focused on lightweight, personal social interactions (Farnham and Churchill 2011). Perhaps only the more significant social movements reach people through Facebook, and thus it is not the best tool for coordinating more every day, local civic engagement activities with relative strangers.

Public Networks and Personal Media Sharing
Bimber (2005), in reconceptualizing collective action in terms of a more contemporary media environment, notes that an important condition for collective action is the transition from expressing personal interests in a private domain to making them observable in a public one. An important feature of new communication technologies is the ease of this private-to-public boundary-crossing. Blogs in particular, he notes, are "a vivid example of the diminished boundaries between private and public (p. 381)". In support of Bimber's argument, adult bloggers report blogging helps them become engaged with civic issues (Kavanaugh et al. 2006). Blogging tools specifically designed to encourage citizen journalism amongst youth have also been shown to foster civic engagement (Farnham et al. 2012). Bennett and Segerberg (2012) similarly argue for the importance of personalized content sharing and storytelling in fostering what they term *connective* action. Through careful study of several recent social movements, they observed impressive levels of communication with publics characterized by personal images and storytelling spread virally via social networks and Twitter. They note with younger generations:

> These sweeping changes have produced a shift in social and political orientations among younger generations in the nations we now term the post-industrial democracies. These individualized orientations result in engagement with politics as an expression of personal hopes, lifestyles, and grievances. (p. 743).

Thus, rather than engaging in collective action by joining formal groups or ideological self-categorizations, people are engaging more fluidly through inclusive, large-scale personal storytelling, where political content is spread virally through the network and the personalization of ideas. In these *personal action frames,* acts of personalization and sharing become expressions of civic engagement in and of themselves. Importantly, as argued by Benkler (2006), these acts of personal sharing are self-motivating, where taking public action arises primarily as an act of personal expression to achieve recognition, self-validation, or connection with a close other.

Group-based Communication vs. Networks

The underlying architecture of any communication technology has affordances that impact social outcomes, such as affordances in networks for amplifying and spreading information (Boyd 2010). However one drawback of these network-based forms of civic engagement is they are potentially more likely to become chaotic and unproductive, compared to the more traditional, organized forms of engagement coordinated by more intentional group behavior (Bennett and Segerberg 2012). The communication tools that best map onto these more complex and intentional coordination tasks include email, moderated mailing lists, and community web sites, because they afford more siloed, bounded, group-based conversations. We may find that while people more easily engage through personal expression in networks and blogs, these activities do not translate into the civic behaviors that require such complex coordination. As noted by Kim et al. (2007), youth are more likely to engage in civic activities such as attend public meetings and sign petitions when they are members of local, organized groups.

Psycho-social Factors

Aside from the communication ecology through which youth become civically engaged, socio-psychological factors also play an important role. That is, when seeking to design social systems to foster civic engagement, we must examine the motivational factors that drive civic engagement behaviors. In a comprehensive review of over 182 studies of collective action, Van Zomeren et al. (2008) illustrated the important role social identity, a sense of injustice, and self-efficacy play in driving collective action behaviors. In brief, when people perceive an injustice experienced by a group with whom they have a sense of social identity, and they have the perceived efficacy or confidence to address the issue, then they are likely to engage in civic behaviors. Social identity is traditionally defined as the self-concept derived from membership with a group and the emotional significance attached to that group (the sense of attachment, commitment, and connection). In their meta-analysis, Van Zomeren et al. (2008) found identification and self-efficacy both had a causal impact on collective action, and

identification further influenced self-efficacy itself as people sought agency with their groups. Furthermore, Lenzi et al. (2013) found that social connectedness with a local community impacted youth civic engagement.

We expect in our study that identity and self-efficacy may also play a moderating role between *technology experiences* and collective action. Prior work (Farnham et al. 2012) found with a small number of users that a person's identification with a local community interacted with their technology usage levels in predicting civic engagement. Carroll et al. (2005) found that collective efficacy correlated with social uses of the Internet, which then correlated with community belonging. McCarthy et al. (2009) found that a place-based community network could positively impact attachment to the place. In other words, as people develop an attachment to a community and develop a feeling of civic efficacy, we expect they are especially likely to use communication tools to achieve collective action goals.

Research Questions

In sum, there are a number of communication technologies that may be leveraged to foster youth civic engagement, and several psycho-social factors to consider as moderating variables. However, in reviewing related theory and research, we find competing arguments for which technologies would be most effective. In our current study, we seek to answer the following questions:

A. Given the diversity of communication technologies available, which genres (personal networks, technologies in the public sphere, media sharing tools, group coordination tools) have the strongest impact on civic engagement behaviors for youth?

B. What is the relative impact of community identification and civic efficacy in the use of these communication technologies?

In exploring the use of social media to foster civic engagement in youth, we focus in particular on local communities, because research has shown that engagement with local community groups provide effective opportunities to socialize youth to become politically active as adults (Farnham et al. 2012, Kavanaugh et al. 2006, Kim et al. 2007). We further expected that youth were likely to have an existing feeling of connection with their local communities (Lenzi et al. 2013).

Questionnaire Study

We used a questionnaire study to develop a model of the relationships between technology experience, civic efficacy, identification with one's local community, and civic engagement. We distributed a brief, 15 minute questionnaire to youth aged 14 – 20 from May 3rd to June

14th, 2012. In order to recruit participants with diverse socio-economic status and technology access, the questionnaire was distributed locally through an advertisement in the City of Seattle community technology mailing list, a local teen blogging site, and through classes hosted by the YMCA in local inner city high schools. In order to reach a broader population, the questionnaire was further distributed nationally using a database of potential study participants in the United States recruited from an online web site hosted for this purpose. Participants were incented to complete the questionnaire with a sweepstakes submission for a gift card or software prize. It should be noted that while we sought for a more diverse pool of respondents using these recruiting methods, the respondents through the web site were biased to be more tech-savvy and male than the local participants, as described in the participants section below. That said, we did recruit sufficient diversity in our sample to gain insights into the impact demographic variables play on technology experiences and civic engagement levels.

Questionnaire

The questionnaire first asked demographic questions, and then about Internet technology access, usage, and level of experience.

Internet access. Participants' level of Internet access was measured by asking them to what extent they could regularly access to the Internet through a laptop, desktop, cell phone, tablet, ipod, or similar device with wi-fi, either because they owned the device or they had regular access to it. An overall measure was developed by aggregating across these questions such that people with their own devices were scored as having higher levels of access than those who borrowed devices or did not use devices at all.

Internet usage. Level of Internet usage was measured by asking how many hours per day participants' estimated spending using the Internet (across any device).

Internet technology experience. Participants were asked to rate their levels of experience using a Likert scale across a broad range of Internet technologies, (where 1 = no experience and 7 = extremely experienced). Items were included to reflect common means for personal and public social interactions, Internet content consumption, media sharing, and networked vs. group-based coordination. An overall measure of technology experience was generated by averaging across these items.

After completing questions about their technology access, usage, and experience, participants completed questions asking about their civic self-efficacy, identification with local community, and civic engagement.

Civic self-efficacy. Civic self-efficacy, or the belief that one can make a difference civically, was measured using items from the California Civic Index (Kahne et al. 2005),

including *'I believe I can make a difference in my community'* and *'by working with others in the community I can help make things better'*.

Identification with local community. We measured identification with local community, or the feeling of belonging, connection and loyalty to a local community, using items from the psychological sense of community scale (Wilkinson 2007). We asked respondents to think about their local community, such as those people in their neighborhood, their schools, or their local social groups, and to consider that community when answering these questions. Items included *'I feel like I belong in my local community', I feel loyal to the people in my local community', 'I really care about the fate of my local community'*, which reflect both the identification and attachment dimensions of this construct (Van Zomeren et al. 2008).

Civic engagement. Civic engagement, or those civic and political activities motivated by a desire for social change (Smith et al. 2009), was measured using items from the Civic Engagement Questionnaire (Keeter et al. 2002), a standard measure asking how often respondents had engaged in various civic activities such as *'Spending time participating in any community service or volunteer activity'*, *'taking part in a protest, march, or demonstration'*, and *'playing a leadership role at school (such as student government or leadership in a club).'* Internet-related items were not included in this measure to disambiguate it from measures of technology usage.

Finally, we further ask participants if they wanted to communicate with members of their local community about issues they cared about, how would they go about doing so?

Participants

586 participants completed the questionnaire. The online questionnaire was structured such that pages were saved as they were completed, and only those who completed at least two-thirds of the questionnaire were included in the analysis. An additional 8 were excluded for showing no variability in two key measures, indicating they were completing the questionnaire without reading individual items. Out of the remaining 578 participants, 19% were female, and 78% male, with an average age of 17 (ranging from 14 to 20). 60.4 % were Caucasian, 10.2% African American, 7.8% Asian, 9.9% Hispanic or Latin American, .7% Native Hawaiian or Other Pacific Islander, .7% American Indian or Alaskan Native, and 8.7% Mixed. 92% were in school, with 68% in high school and 18% in college. 4.5% were employed full-time and 27% part-time. We did find some demographic differences across our local (N = 126) and national (N = 451) samples. We had a higher proportion of males in the national sample

(88% vs. 43%), they were on average older (17.3 vs. 15.9 years of age), and more likely to be Caucasians (65% vs. 45%) than Asian (5% vs. 17%) or African Americans (9% vs. 14%). Consequently these demographic variables and the source of the sample (local vs. national) were included as controls in our analyses.

Results

For the results of this study, we first provide an overview of our respondent's existing communication technology practices, and then examine the relationship between technology experience and civic engagement.

Internet Access and Experience

Participants overall reported high levels of Internet experience, with 24% self-described as intermediate, 48% advanced, and 27% expert. They accessed the Internet an estimated 6.7 hours a day, 98% from home, 73% at school, 14% from Internet cafes, and 17% from community centers like the library or YMCA. 73% reported accessing the Internet from their own laptop, and 55% from their own desktop. 93% owned their own cell phone, out of which 70% were smartphones.

We asked participants to rate the importance of various social technologies in communicating and sharing with others, and found that text messaging was rated the highest, followed by email and social networking sites. See Figure 1. The higher importance of email than social networking was surprising given related research finding social networks were most frequently used for communicating with friends for youth (Hampton et al. 2011). However, note this question asks for importance, not frequency, and did not specify friends only.

Age had a small, significant correlation with ratings of email and text messaging, with older participants rating email (r = .20, p < .001) and text messaging (r = .17 p < .001) as more important. There was no correlation between age and importance of social networking sites. When asked which social technologies they used the most, 57% said Facebook, 14% Youtube, 12% and email. Thus while email was rated as more important, participants spend more time in Facebook.

We asked participants to indicate their level of experience with a wide variety of technologies, and found that youth rated themselves as most highly experienced in web search, watching videos, text messaging, and email. They were much less experienced with using a mailing list, or writing or commenting on blogs, Twitter, or wikis. See Figure 2.
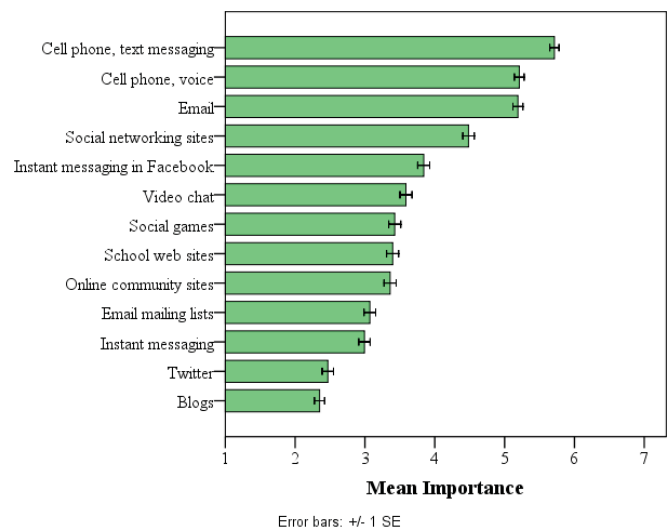

Figure 1. Mean importance of various social technologies for communicating and sharing with others (where 1 = not at all and 7 = extremely so).

We next asked participants what technologies they would use to communicate with members of their local community about civic issues, and similarly found email was mostly highly rated (M = 5.2, SD = 1.80), followed by cell phone voice (M = 4.8, SD = 1.94) and text messaging (M = 4.7, SD = 2.10). See Figure 3. Across these responses, we begin to develop the picture that for important communication and sharing with others, and for communicating with their local community issues, youth are not using personal social networks as much as we might have anticipated. Rather, they use channels such as email or the cell phone to communicate around important issues with others in their communities.

Civic Engagement and Sense of Community

On average, we found that our participants had somewhat low levels of civic engagement (M = 3.1, SD = 1.54, where 1 = not at all, and 7 = extremely so), moderate levels of civic self-efficacy (M = 4.2, SD = 1.7) and moderate levels of identification with local community (M = 4.3, SD = 1.64). Computing an overall technology experience score by averaging across our technology experience items, we found technology experience significantly correlated with measures of psychological sense of community and civic engagement. See Table 1. Technology access (the degree to which they had regular access to the Internet through a laptop, desktop, or other device) had a small impact, and hours spent online had no impact.
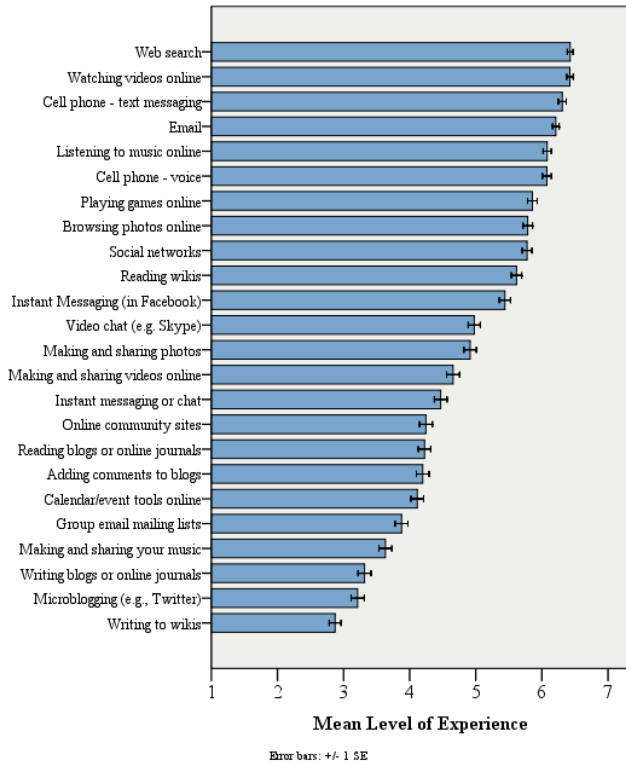
Figure 2. Level of experience with various Internet technologies (where 1 = no experience, and 7 = extremely experienced)
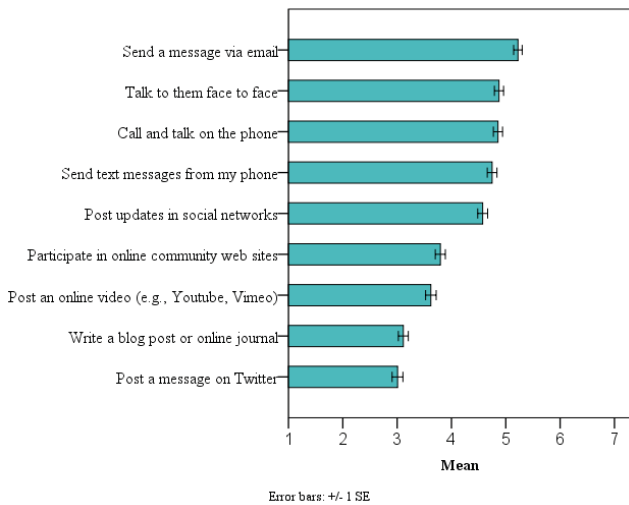

Figure 3. Extent to which participants would use various technologies to communicate with members of their local community about issues that they care about (where 1 = not at all, and 7 = extremely so)

To further understand how communication technology experiences correlated with civic engagement, we first performed a principle components factor analysis on types of technology experience. A factor analysis allows us to detect significant, orthogonal dimensions that underlie patterns of use across these technologies. Four factors emerged, as seen in Table 2. The first factor we characterize as *public networks* social media experiences, such as with blogs, wikis, and Twitter. The second factor we characterize as *personal networks* social media experiences, such as with social networking sites and text messaging. It is important to note that these are two orthogonal patterns of usage (using Varimax rotation). The third factor is characterized as sharing personal media experiences, such as creating music or videos. Surprisingly, the use of group mailing lists loads fairly significantly onto this factor, suggesting mailing lists may be commonly used for sharing. Finally, the fourth factor we characterize as entertainment, loading most highly onto playing games and watching videos. Again, surprisingly email loads fairly highly onto this factor, suggesting youth may be substantially using email for entertainment purposes. See Table 2.

Measure	2. Internet Usage	3. Tech Exper	4. Civic Efficacy	5. Local Ident	6. Civic Engagement
1. Internet Access	**.18**	**.29**	**.15**	**.16**	**.16**
2. Internet Usage		**.24**	.01	-.04	-.02
3. Overall Tech Experience			**.43**	**.39**	**.45**
4. Civic Self-efficacy				**.77**	**.63**
5. Identification with local of Community					**.60**

Table 1. Pearson correlations between Internet access, technology experience, identification with community, and civic engagement. Bolded items are significant at p < .005.

Having isolated the factors underlying patterns of use in technology experience, we then performed a step-wise regression analysis to assess the unique impact of these four factors on civic engagement. Step-wise regressions allow us to test the relative impact of the variables in each step, controlling for items entered in previous steps. Demographic variables and Internet access were entered as control variables on the first step, psychosocial measures on the second step, and our four types of Internet experience on the third step. To examine the potentially moderating role of self-efficacy and community identification, we entered the interaction cross-product term between these and Internet experiences on the fourth and fifths steps. As can be seen in the first step in Table 3, our local participants had lower civic engagement than

our national participants, women had slightly higher levels of civic engagement than men, older youth had slightly lower levels, and more educated youth had higher levels.

	Factor			
	8.6	**2.2**	**1.4**	**1.2**
Eigenvalue	38%	10%	6%	5%
% Variance				
Type of Internet Experience	**Public Networks**	**Personal Networks**	**Media Sharing**	**Entertain ment**
Reading blogs or online journals	.82	.22	.13	.09
Adding comments to blogs or online journals	.81	.21	.16	.13
Writing blogs or online journals	.79	.15	.29	-.08
Online community sites or discussion boards	.67	.00	.13	.40
Writing to wikis	.60	.00	.38	.14
Microblogging (e.g., Twitter)	.60	.23	.41	-.03
Instant messaging or chat	.40	.18	.39	.38
Social Networks	.14	.75	.28	.02
Instant Messaging (in Facebook)	.14	.73	.25	.07
Cell phone - text	.07	.72	-.10	.28
Cell phone - voice	.14	.64	-.04	.24
Video chat (e.g. Skype)	.24	.52	.37	.13
Browsing photos online	.21	.49	.32	.42
Making and sharing music you created online	.18	.00	.80	.14
Making and sharing videos online	.27	.29	.66	.15
Group email mailing lists	.32	.03	.63	.25
Making and sharing your own photos online	.34	.43	.58	.12
Calendar/event tools online	.40	.30	.41	.19
Playing games online	.04	.02	.10	.78
Email (e.g., Gmail, Hotmail, school email)	.14	.21	.19	.63
Watch videos online	.15	.45	.03	.55
Listening to music online (e.g. Pandora)	.00	.31	.28	.52
Reading wikis (e.g, Wikipedia)	.44	.27	.08	.45

Table 2. Factor analysis of types of technology experience using principal components analysis with Varimax rotation. Four factors emerged: public networks, personal networks, sharing personal media, and entertainment.

As a control for race we coded people as belonging to a minority or not, but did not find it significantly impacted civic engagement. People who had more access to the Internet had a significantly higher level of civic engagement, though their level of usage did not. Our psycho-social variables had the most substantial impact, accounting for 35% of the variance.

Predictor	ΔR^2	Beta	t	Sig <
Step 1: Control Variables	.10		5.20	.000
Source		-.23	-3.82	.000
Gender		.12	2.05	.05
Age		-.14	-2.28	.03
Minority		.09	1.70	*ns*
Education		.18	3.20	.002
Internet Usage		-.07	-1.34	ns
Internet Access		.16	2.95	.003
Step 2: Psycho-social Factors	.35		104.23	.000
Identification		.27	3.78	.000
Civic Self- Efficacy		.37	5.42	.000
Step 3: Internet Experience	.07		11.59	.000
Public networks		.23	5.43	.000
Personal networks		-.03	-.81	ns
Sharing media		.17	3.88	.000
Entertainment		.04	.81	ns
Step 4: Self-efficacy (SE) X Internet Experience	.03		4.49	.001
SE X Public networks		.30	2.91	.004
SE X Personal networks		-.25	-2.66	.008
SE X Sharing		.04	0.40	*ns*
SE X Entertainment		.14	1.4	*ns*
Step 5: Identification X Internet Experience	.00		.74	ns

Table 3. Step-wise regression analysis predicting civic engagement from psycho-social factors, types of Internet experience, and their interactions. Total $R^2 = .54$

Overall Internet experience accounted for 7% of the variance. In particular, experience with *public networks* and personal media sharing significantly impacted civic engagement, whereas experience with personal social networks and entertainment experiences did not. We also found significant interaction effects, showing that our psychosocial factors do moderate the relationship between technology experience and civic engagement.

In particular, we found that youth with higher self-efficacy were especially likely to be civically engaged if they also had higher levels of public social media experience, as illustrated in Figure 4. (Note that civic efficacy and community identification were highly correlated ($r = .77$, $p < .001$), and showed similar interact

effects depending on which was entered first in the regression.) Conversely, we found that youth with *lower* levels of personal networks experience were more likely to be civically engaged if they also had high self-efficacy.
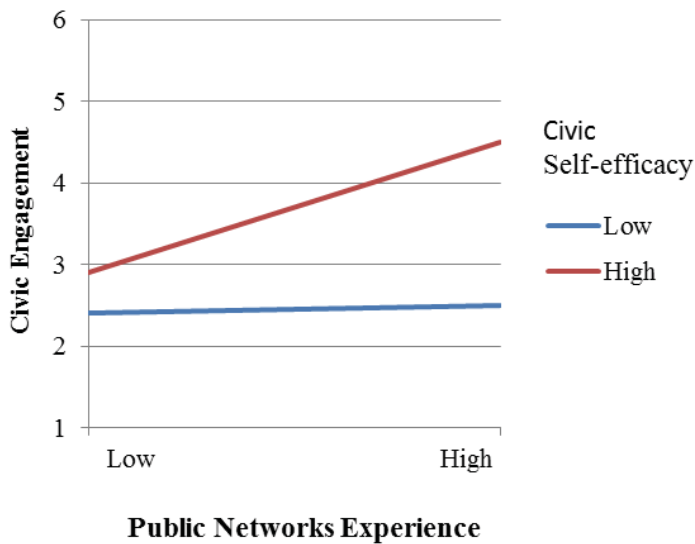

Figure 4. Youth with higher self-efficacy are especially likely to be civically engaged if they also have high levels of public social media experience. (Lines were plotted with lows and highs at 10% and 90% percentiles, respectively.)
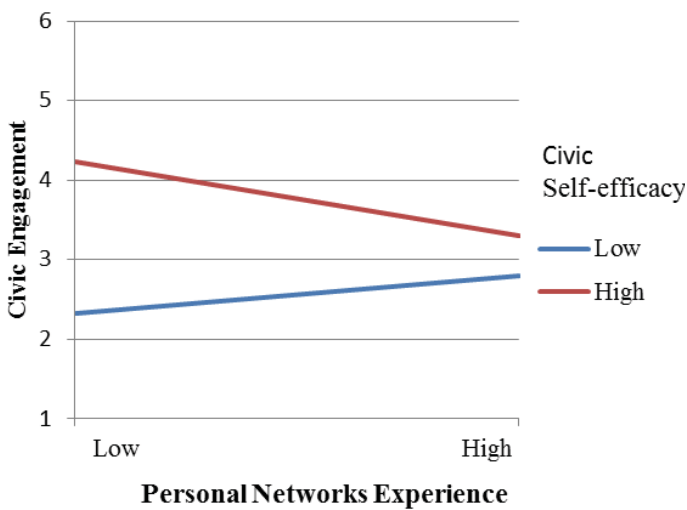

Figure 5. Youth with low levels of experience with personal networks and high levels of civic self-efficacy had higher levels of civic engagement. (Lines were plotted with lows and highs at 10% and 90% percentiles, respectively.)

These results suggest that people with high self-efficacy may be spending less time interacting with their friends in personal social networking sites, and more time using social media to interact with people in the public sphere.

Finally, to provide better overview of the emerging model of how these variables relate, more closely examine the moderating effect of the psychosocial factors, and test the fit of the emerging model for predicting civic engagement, we performed a structural equation model using the maximum likelihood method with Amos software, which allows us to estimate means and intercepts for missing data. See Figure 6 for significant paths in the model, with standardized path estimates. Model fit indices indicate a good fit between the model and the observed data: the comparative fit index (CFI) = .97, and the RMSEA = .04.. We expected our psycho-social measures to moderate the relationship between technology experience and civic engagement, and found through an examination of indirect effects that self-efficacy had a significant indirect effect (.10, p<.05) through public networks experience. That is, public networks experience corresponded with civic engagement only for those with high levels of civic self-efficacy. In addition, community identity had an indirect effect (.30, p < .005) through self-efficacy. This is consistent with Van Zomeren et al.'s (2008), findings, showing that identification influenced civic-efficacy. They argued when people identify with a group, they are motivated towards civic efficacy to help achieve a sense of agency, especially if it is an otherwise disadvantaged group.

Conclusions and Discussion

We performed a questionnaire study to explore the relationships between various kinds of technology experiences, civic self-efficacy, identity, and real world civic engagement. We found that while youth report spending the most of their time in Facebook, they rate email and text messaging as more important for sharing and communicating with others, and for communicating with people in their local communities about civic issues. Those youth more experienced with social media in the public sphere (such as blogs, wikis, and Twitter) and with sharing personal media had higher levels of real world civic engagement. Further, those technology experiences associated with more complex coordination (calendars, mailing lists) were also correlated with civic engagement.

Youth with a stronger feeling of identification or belonging with their local community were more likely to be civically engaged, and were especially likely to engage in civic engagement behaviors if they were both high in self-efficacy and experienced with public social media. These results highlight the importance of encouraging youth to engage in civic discourse in the public sphere, through technologies such as blogs, Twitter, and wikis.

Experience with the more personal, private social technologies such as social networking sites or text
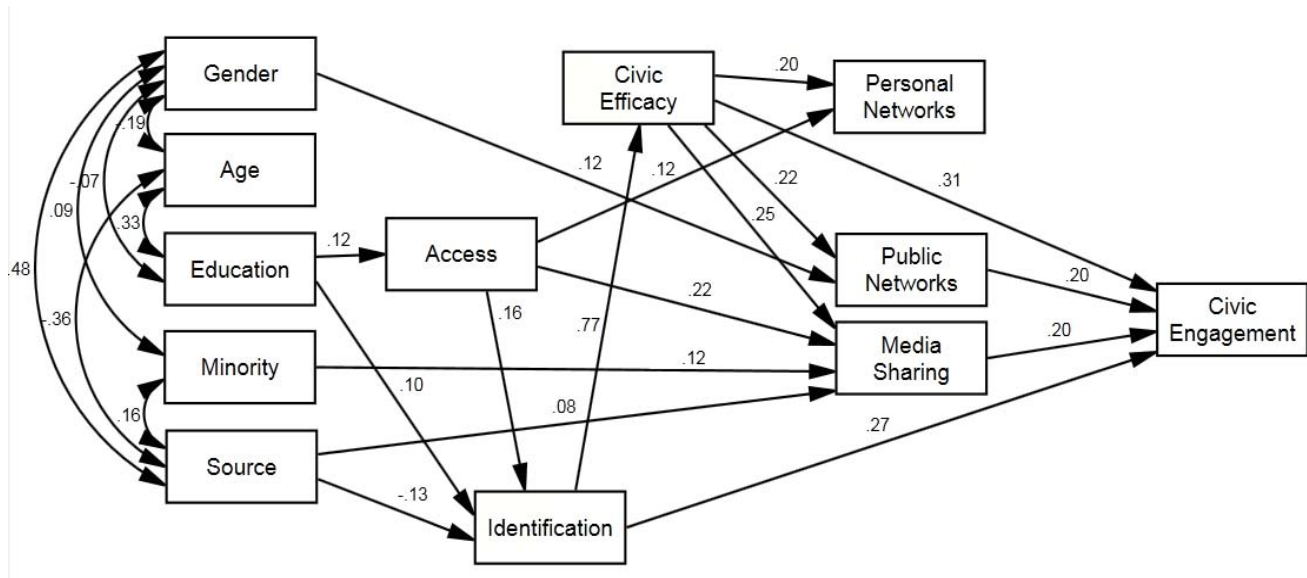
Figure 6. *Structural equation model showing significant standardized coefficients between variables. Civic engagement directly correlates with public networks experience, media sharing experience, civic self-efficacy, and community identification. It is indirectly affected by technology access through media sharing experience and civic-efficacy through public networks experience.*

messaging had no relationship with civic engagement. We found that if youth did need to correspond with members of their local community, they reported doing so through other means, such as cell phone and email. These results suggest Facebook is for the most part is *not* experienced as a networked public. Rather, when youth seek to become civically engaged with their local communities they use other communication channels such as email, and those who are most civically engaged are using more public technologies to participate in civic discourse. We believe this may be because either youth do not want to connect with relative strangers around serious issues in personal networks, *or* they are just less likely to find other members of their local communities in social networks -- however further research is required to address this question.

Our study results are notably consistent with Bimber's (2005) argument that transitioning from private sharing to public sharing is a central aspect of collective action in a networked world. Similarly, the correspondence between media sharing and civic engagement supports Bennett and Segerberg's theory of *connective actio*n (2012), stating that personalization and storytelling through digital media is an act of civic engagement in itself, and likely to lead to coordinated action with others. In the new world of networked publics, youth must cross that line to sharing in the public sphere to become civically engaged.

An examination of the model in Figure 6 suggests a number of interventions in designing technologies and programs to foster civic engagement. The first intervention is that of providing access, since participants who reported having their own devices with regular access to the Internet showed higher levels of community identification and media sharing experiences. The second intervention is helping youth develop a sense of attachment to their local communities, and the associated confidence and civic efficacy. Next we must consider aiding youth in developing experiences with certain technologies, to join the public discourse, engage with personal storytelling via rich media sharing, and participate in more complex coordination. Finally youth need to be encouraged to leave the safe bounds of their own personal networks, to find their public voice and connect to their fellow citizens.

Study Limitations

Given our recruiting methods our national sample is biased toward tech-savvy males and may not be representative of the average youth in the United States. That said, we included these demographic variables and recruitment source as control variables in our analyses, and did not find that gender, age, or race meaningfully impacted results. We further recognize that this work is correlational by nature, which raising red flags when seeking to infer causation. In this case, technology experience may either mobilize civic engagement behaviors, or it may simply reinforce those who are already civic offline to be civic online as well. Nam (2010) found evidence for both directions of causality, where Internet usage both mapped onto existing offline civic behaviors, *and* mobilized inactive people to become more active. We for the most part framed this study with civic engagement as our dependent variable, in part justified by Zomeren et al.'s (2008) thorough meta-analysis over 182 studies, finding

support for the causal direction from self-efficacy and identification to collective actions. In addition, given our emphasis on *civic engagement behaviors,* it is conceptually logical to expect communication practices will impact civic behaviors, such as going to a rally. However we expect in a complex world the relationship is causal in both directions.

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