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**Spill-over effects between Facebook and on/offline political participation?
Evidence from a two-wave panel study**

The broadest definition of political participation refers to all forms of involvement in which citizens express their political opinion and/or try to influence political views and decisions of political decision-makers, other powerholders or people. Within the scientific literature there is a broad consensus on the view that political participation is one of the cornerstones of a well-functioning democracy. One of the perhaps newest forms of political participation are based on the use of on-line communication tools. The political use of websites, email-campaigns, virtual communities, social networking sites can be considered as important new elements in political communication and participation. Previous research has shown that Facebook political activism is growing. There is still no consensus in the scientific literature, however, whether and how these new political communication opportunities affect citizens' broader civic and political engagement. This paper will focus on one specific aspect of this puzzle, i.e. the spill-over effect from various aspects of using social networking sites to other forms of online and offline political participation. More specifically, the paper will explore whether Facebook participation more generally and the extent of its political use evolve into other types of offline and online participation over time (or vice versa). In order to answer our main research question we rely on a two-wave panel survey of undergraduate university students of one major Canadian university. The online survey is especially developed to measure detailed online media consumption and new forms of political participation.

Key words: social networking sites, online and offline political participation, causal effects

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Introduction

The growing importance of the Internet and the increasing popularity of social networking sites generate a lot of scholarly attention. The World Wide Web and social networking sites are rapidly infiltrating all aspects of society, including the political landscape. Various claims have been formulated about the democratic potential of the online medium in general, and social networking sites more specifically. The main argumentation in favor of the Internet's democratic potential is that given the limited cost of Internet communication, and the decentralized and interactive characteristics of the medium, it will lead to a more open and hence more democratic exchange of political information and political participation. The online sphere does not only offer individuals the possibility to engage in traditional forms of political participation, but it also allows individuals to engage in forms of political activity that were previously not available. The political use of social networking sites is one of the fast growing examples of online political participation, especially among the younger generations. A recent study of PEW Internet and American Life Project suggests that in 2011 two-thirds of adult Internet users participate in social networking sites (SNS), such as Facebook, MySpace, LinkedIn. Compared to 2008, the number of SNS users had more than doubled. Moreover, the use of social networking sites is close to reaching its saturation point among the youngest online age-cohorts (Madden and Zickuhr, 2011). Increasingly, SNS sites are also being used to engage in political activity. For instance, in 2008, forty percent of Americans who had a personal profile on a social networking site used these sites to be politically active (Raine and Smith, 2008).

With the growing prevalence of political activities on social networking sites various authors have expressed concern about the political nature and democratic value of these online activities. Critics fear that these online activities lack the political meaning of traditional forms of political engagement (Cammaerts and Van Audenhove, 2005; Papacharissi, 2009). The main critique is that these online activities are too easy, simple, not costly enough, and just address certain concerns with a mouse click thus insinuating the idea that important political problems have been addressed and solved (Gladwell, 2010; Barney, 2010). In this regard, some authors refer to the

terms of 'slacktivism' or 'clicktivism' (Morozov, 2009; Christensen, 2011) which have been particularly applied to Facebook-related activism.

Yet, despite the growing concern of the limited importance of the political use of social networking sites, there has been little research conducted about how it might foster other types of political engagement over time. Previous research on the political use of social networking sites has demonstrated mixed results about the relationship between political Facebook use and other forms of political participation (e.g. Valenzuela et al., 2009; Baumgartner and Morris, 2010; Schlozman et al., 2010; Vitak et al., 2011). The cross-sectional nature of the data used in these previous studies, however, does not allow establishing a causal relationship between the political use of social networking sites and other forms of political engagement. The present study contributes to this work by examining the causal relationship between the political use of social networking sites, more specifically Facebook usage, and other modes of online and offline political participation, employing data from a two-wave panel survey among undergraduate students at a major Canadian university. In other words, the main goal of this research project is to examine whether Facebook political participation evolves into other types of participation over time or whether it remains the simple and easy entrance to political participation without further consequences such that Facebook participants also become active in more general online politics as well as in the offline world? Or is Facebook political participation so satisfying in its convenience that other forms of political participation are increasingly suppressed? A third scenario could be that Facebook political participation does not affect the practice of other political activities at all.

Facebook and the mobilization of political participation

Why is Facebook expected to be different from other communication tools and media, and what makes the study of this medium for political engagement so interesting and significant?

The first distinctive feature of Facebook is its ubiquity in the sense that it affects all levels of society; it even affects individuals who are not using this medium. Especially for younger people, for whom Facebook membership is close to reaching its saturation point, Facebook is an important communication tool to communicate and reflect about everyday practices. For the

majority of its members the use of social networking sites becomes part of their every-day live activities. Recent research by PEW Internet & American Life Project, shows that as of 2011, 69 percent of American on-liners between 18 and 30 use social networking sites on a daily basis. Moreover, it grew out to one of the most popular activities that people do when they are online. Only e-mail and search engines are more frequently used than SNS. Moreover, the study shows that SNS use among Americans is no longer characterized by inequalities based on race, ethnicity, household income, education level, and level of urbanization (Madden and Zickuhr, 2011). In addition, various institutions and organizations are increasingly using social networking sites, such as Facebook, for communication, dissemination of information, mobilization, registration and storage of information. Think for example about the organizations and institutions that affect our daily lives, e.g. education, the job market, politics. Thus social networking sites are potentially new interesting *subpolitical* platforms that require further attention.

Second, Facebook is a communication medium that holds a huge potential for interactivity and interconnectivity. Contrary to the more traditional media such as television, radio and (hardcopy) newspapers, where the dissemination of top-down information is one of the major goals, the Internet, and especially Facebook, allows for different forms of interactivity. On Facebook everyone can be a content creator, disseminator and consumer. The highly interactive nature of Facebook allows for individuals to selectively seek and share information, and communicate with other 'friends' and groups. The social networking aspect of Facebook facilitates communication with not only close others, but also with people from the broader social network. SNS stimulate individuals to keep in touch and to significantly enhance their social network. Social networking sites are especially suited to increase and maintain weak ties, rather than to increase strong ones (Ellison et al., 2007) and even brings people in contact who otherwise would not meet (Shah et al., 2002). This in theory enhances the range of information, topics, and opinions to which people are exposed (Granovetter, 1983). While interactivity and networking, are not new elements of communication, it is the combination of the two that characterizes the distinctiveness of Facebook and similar sites. In sum, for political participation these sites offer new and strengthened ways of political mobilization (Williams, 2006b). A special feature of Facebook and other SNS is the unintended exposure to political mobilization content by

validated (e.g. friendship) sources. Thus, Facebook has the potential to make political information more readily available, particularly for those who do not necessarily seek it¹.

Third, time and place are no longer restrictive factors for effective communication in the online world. Facebook allows individuals to communicate independent from time and place, whether in real-time or under the form of 'delayed' or asymmetrical communication. This specific feature may strengthen connectedness of different social actors all over the world. Castells (2003) noted that the Internet may bridge time and space in a sense that the social time and space dimensions tend to widen in the human social interactions, this is especially true in for social networking sites. These features might not only influence how people engage, but it might also shape the topics and social/political goals people support through facilitated worldwide mobilization and support. Thus Facebook could be seen as a mechanism that creates common interest and fosters imagined communities (see e.g. Poster, 2001; Rheingold, 1993; Turkle, 1995).

Fourth, Facebook holds new potential to foster political engagement by lowering the barriers for political participation. On the one hand, Facebook allows for engagement in new political activities, which were previously not possible. Examples are the SNS's features that allow individuals to create a Facebook group to support a social/political goal and gather support of friends and other Facebook members. This feature gives private citizens the possibility to draw attention to specific causes and seek broader support among other individuals. Facebook also gives members opportunity to engage in less demanding activities, such as 'liking' or 'joining' a social/political Facebook group, 'liking' a political party/ candidate or social/political organization, or sharing one's opinion on a social/political topic on their personal wall or someone's else's wall. These activities are not only new ways to engage in politics, but they are also low-cost activities compared to other more traditional political activities. Once logged in on Facebook it is a small step to join a Facebook group or support an organization or politician, thus potentially recruiting previously uninterested individuals for a new political cause and follow-up political activity. The question is whether Facebook activism remains limited to its medium (and thus results into slacktivism or clicktivism) or whether it has the potential to mobilize other forms of participation.

On the other hand, as the online population increasingly mirrors the offline population, especially among the younger cohorts, Facebook and other SNS sites hold the potential to include new groups into the political process (Best and Krueger, 2005; Krueger, 2006; Di

Gennaro and Dutton, 2006) by lowering the threshold for individuals who were previously less inclined toward traditional participation activities. So both, new ways of being active in politics and a higher mobilization potential characterize the opportunities of SNS sites.

Given the substantial increase in the number of people connected with Facebook and its available tools and possibilities for interpersonal interaction, compared to a decade ago, it becomes increasingly important to understand the causal effects of the political use of Facebook on other forms of political engagement. Below we will discuss previous research that examines the relation between both, Facebook and political engagement, and outline how this article goes beyond existing findings.

Previous findings on the role of social networking sites for political participation

The scholarly research that has been conducted on the political use of social networking sites and its broader implications for political behaviour provides mixed results, but overall tends to support the SNS mobilization potential by demonstrating positive correlations between certain aspects of Facebook use and political engagement. For example, the study of Valenzuela and colleagues (2009) reveals a positive relationship between students' use of the application of Facebook groups and engagement in political activities, but the results provide little evidence to suggest that Facebook intensity facilitates greater political participation. Civic participation, in comparison, was associated with more intensive use of Facebook. The authors emphasize that although the results are positive and significant, the effects are very modest, suggesting that social networking sites are not the new panacea to increase political engagement among the younger generations. We have to note here that the subsequent study did not make a distinction between Internet-based political activities and offline activities, hence the results might not be able to reveal potential spill-over effects between Facebook, and online and offline activities.

In line with the previous study, research of Zhang et al. (2010) show that reliance on social networking sites was positively related to civic participation, but not to political participation. However, the authors also tested only traditional political activities, as such it was not possible to examine potential differential SNS effects on newer activities. They could also make no distinction in the SNS effects on online or offline participation. However, Baumgartner and Morris (2010) employ distinct measures for online and offline political participation among undergraduate students in the context of the 2008 U.S. primary race. The results suggest that

youth who used SNS as a source for political news were more likely to engage in online political activities, but the authors do not find a positive relationship between SNS news use and conventional offline political participation. In other words, the mobilization effect of social networking sites are mainly medium-specific. However, we do not know how political activities on Facebook (beyond news consumption) relate to other forms of (online and/or offline) political participation.

PEW Internet and American Life Project has been the the first to conduct a general population survey that measures all three venues for political participation, i.e. on social networking sites, more general online and offline (Raine and Smith, 2008). The data revealed that the majority of young social networking site users employ the site to engage in the 2008 election campaign. More specifically, 65 percent of the Americans aged between 18 and 29 years with a profile on a social networking site engaged in at least one of the measured political Facebook activities during the presidential campaign. Schlozman and colleagues (2010) use the PEW data to look more in depth at the potential of the Internet and more specific SNS to close traditional participatory inequalities. At first sight, the results provide little evidence for the online sphere to close the participatory gap, as online political activities, such as donating, signing petitions, contacting officials, turned out to be as stratified socio-economically as its offline counterparts. Yet when taking into account political use of SNS, the traditional participation predictors of socio-economic status (SES) are no longer biased towards citizens at the higher end of the SES stratification spectrum. In other words, the results provide evidence for the mobilization potential of SNS to decrease political participation inequalities. The authors, however, warn that “at present, a social networking site like Facebook is more a forum of political talk than for organized political effort and the political groups formed are more about affinity than concerted political action” (Ibid: 501). As such, the authors emphasize that in order to give a more nuanced picture of the democratic potential of social networking sites one should explore the relations between the political use of these sites and other forms of political engagement. It might simply be possible that social networking sites do nothing more than mobilize SNS-related political activism, but not other types of participation.

Vitak and colleagues (2011) make a first attempt to examine whether political activities on social networking sites affect political participation in the broader sense. The study looks at how Facebook users’ political engagement on the networking site itself relates to engagement in other

political activities. The results reveal a strong positive relationship between political activity on Facebook and other forms of political participation during the 2008 U.S election campaign. In addition, the researchers also investigate specific features of Facebook that might influence the political engagement on the site. They find that Facebook users who spend more time on the site, who have a larger friend network, rely more on Facebook, and are exposed to politically active friends networks tend to engage more often in political activities on Facebook, which in turn relates to increased general political participation. Although the researchers include both online and offline political activities, the positive relation between both participation measures stays intact. The researchers suggest that through Facebook participation users cultivate political engagement through their online friends' network and develop civic skills which positively affect political participation elsewhere. However, the authors only looked at cross-sectional relationships. An equally plausible explanation might be that Facebook political participation is undertaken by people who are already politically active through other means. They might have larger friends' networks and are more likely to notice political activities of their friends because of their previous participation patterns. A cross-sectional study cannot rule out these conflicting accounts regarding causality. The present study will contribute to this debate, by examining the effects of Facebook political engagement on other online and offline forms of political participation in a two-wave panel design. Although a three wave panel design would even be more powerful, a two wave design allows us to control for prior political engagement at time 1. Given the literature and the high hopes for the mobilizational power of SNS usage we expect that political Facebook activities have spill-over effects on online and offline political participation. However, previous research expects that the positive causal effects of Facebook political participation should be particularly pronounced on general online political activity, because mobilization is often medium-specific (Best and Krueger, 2005; Vissers et al., 2011). In other words, once people are online we assume that it is a smaller step to travel from one online platform to another, compared to travelling between the "online and offline world". Thus online political activity might also be related to Facebook political activism.

The longitudinal nature of the data will allow us to investigate better whether the positive correlations between Facebook use and online and offline political participation are indeed causal, e.g. withhold the test of including prior political engagement. Since most accounts have been cross-sectional in nature, the jury is still out on this question.

Data and methodology

To test the spill-over effect from various aspects of using social networking sites to other forms of online and offline political participation, and vice versa, survey data were collected at two points in time, with eight months in between. Data were collected from two Web surveys among undergraduate students at a main English speaking university in Canada. Students are a perfect sample for this kind of research because they are Internet-savvy and experienced with online engagement. The initial survey was conducted in April/May 2011. Participants were recruited through an invitation e-mail that was sent to all registered undergraduate students' official university e-mail address (n=14,039). In the invitation e-mail students were asked to fill in the online questionnaire whereby potential participants were informed that not participating in the research project would not affect their grades or academic results. As an incentive to take part in the study, students were informed that completing the online survey would give them a chance to enter a lottery where they could win one of two prizes, i.e. a \$100 gift certificate from a bookstore, computer store or music shop or an iPad. The invitation e-mail allowed students to click through a link that guided them to the online survey, which took approximately 15 minutes to fill-in. In total 1,238 students visited the website of the online survey and started the online questionnaire whereby 1080 students completed the survey. This results in a final response rate of 8 percentⁱⁱ.

March 1, 2012, the second wave of the online survey was administered to the 891 respondents of the first wave who gave their consent to be contacted for participation in the second wave of the project.ⁱⁱⁱ From the 891 respondents, 526 students (59 percent) completed the survey.

Of the total respondents (n=526, i.e. panel sample), 63 percent are women and 37 percent are men, reflecting roughly the composition of the student body. The ethnic distribution of the sample is 76 percent White, 20 percent Asian, 2 percent Hispanic, and 1 percent Black. As for respondents' citizenship and country of birth, 83 percent of the participants said to have Canadian citizenship, and 68 percent of the respondents indicated to be born in Canada. Respondents were also asked how often they use the Internet for their personal use, 99 percent indicated to use the Internet on a daily basis. More specifically, 6 percent use the Internet less than one hour a day, 30 percent use it 1 to 2 hours a day, 39 percent 3 to 4 hours a day, and 25 percent use it 5 hours a day or more. This suggests that the respondents rely heavily on the

Internet. 92 percent of the respondents indicated to have a profile on Facebook, whereas 30 percent have one with Twitter. We also asked students with a Facebook profile how often they use Facebook and how many Facebook friends they have. Facebook frequency was assessed on a 7-point scale ranging from “I hardly or never use Facebook” to ‘more than 3 hours a day’. The sample mean was 3.5 (SD=1.6), which means ‘more than 31 minutes up to 1 hour a day’. The mean number of Facebook friends is between 300 and 399. As we are interested in the relationship between different modes of political participation, including Facebook participation, in the remainder of the article we will employ the sub sample of respondents with a Facebook profile.

A few analysis steps examine in which regards the Facebook sample is significantly different from the larger original sample. For example, there is no significant difference between the ethnic distribution of Facebook users (77 percent White) and non-users (70 percent White) (chi-square=168, $p=.682$). There are also no significant differences in the gender distribution between Facebook users (36 percent male) and respondents without Facebook profile (42 percent male) (chi-square=1.258, $p=.262$). However, both groups show a significant difference in the distribution of citizenship, i.e. the group without a Facebook profile contains significantly more Canadian citizens (89 percent), compared to the sub sample with a profile on the social networking site (80 percent) (chi-square=4.578, $p=.032$).

Similarly, when we compare the panel sample with the initial sample, analyses indicate that there are no statistically significant differences between the socio-demographic background characteristics gender and citizenship between the two. However, analyses indicate small, albeit significant, differences between drop-outs and the final panel sample in the distribution of ethnicity and country of birth. Survey drop-outs are more likely to be born in another country than Canada (42 percent versus 32 percent, Chi-square=10.591, $p=.001$) and are more likely to be visible minorities (37 versus 30 percent, Chi-square=6.543, $p=.011$), compared to non drop-outs. Attrition is not correlated with the main variables of interest, i.e. Facebook, online and offline political participation. In short, we can conclude that attrition does not pose a serious threat for the internal validity of our study. As a result, the dataset is suited to answer our research questions.

Measures

Main variables of interest: Online and offline political participation

In order to capture various online and offline political activities, we took a broad approach to defining political participation to include political acts that capture different forms of engagement which are not necessarily targeted at policy makers or politicians alone (see Micheletti and McFarland, 2010). In addition, we deliberately chose to only focus on active forms of political participation (such as signing a petition, boycotting or buying a product for ethical, environmental or political considerations, donating or raising money for a social or political cause, etc.) whereby we exclude passive forms such as looking up information about politics and current affairs. Media use and information consumption are considered a prerequisite of or a factor that shapes political participation, instead of a distinct form of political participation itself (see e.g. Verba et al., 1995; Delli Carpini and Keeter, 1996).

In both waves of the study we employed similar measures for the various political participation activities. Respondents were asked to indicate how often (0=never, 1=once, 2=a few times, 3=often) they did each of the following activities during the past six months. Table 1 gives an overview of the different online and offline political activities and how popular they were among the student population in 2011 (Cronbach's Alpha for online participation= .616, Cronbach's Alpha for offline participation= .659) and 2012 (Cronbach's Alpha for online participation= .655, Cronbach's Alpha for offline participation= .630). For Table 1 political activities are recoded into a dummy variable with 1=respondents who participated at least once during the past six months, and 0= otherwise.

Facebook Political Participation

Facebook participation is measured by items that ask about sharing or commenting political opinions on Facebook walls of friends, liking or joining a Facebook group for a political or societal cause or creating one (Cronbach's Alpha at time 1= .512, Cronbach's Alpha at time 2= .611). Table 1 shows that Facebook participation is very popular among students. More than half of the respondents shared at least once their opinion on a social/political topic on their or a friends' Facebook wall, and joined at least one Facebook group started by friends or private citizens to support a social/political goal during the past six months. A little less than one fourth of the students liked or joined a Facebook group started by a politician or political party. The

least popular Facebook activity is starting a social/political Facebook group, which is also one of the most demanding Facebook activities.

Comparing the results for the different online and offline activities reveals that collecting signatures or signing a petition and contacting a politician or government official are both more popular online, compared to their offline counterparts. Whereas offline activities donating or raising money for a social/political purpose, boycotting or buying products for political, ethical or environmental reasons (i.e. buycotting), and taking part in a march or protest activity trump their online counterparts. For boycotting and buycotting this is not surprising as these activities are often related to every-day products such as food which are mostly bought offline. As for taking part in a march or protest activity, there are three reasons why offline protesting is more popular than the online protesting despite the more cost-demanding nature of offline protesting. First, online marching is a rather recent activity with the first major examples of online marching in the fall of 2010. Second, it might also be that students consider online marching/protesting as less satisfying or efficient, compared to offline marching or protesting as it potentially garners less media attention. Finally, the social experience of offline demonstrating, which often involves a festival atmosphere, might explain its popularity among students, compared to the online counterpart.

Table 1 Various forms of political participation in panel sample in 2011 and 2012

	2011	2012	Correlation
<i>FACEBOOK POLITICAL PARTICIPATION</i>			
Shared opinion on social/political topic on FB* “wall”	52.4	63.9	.42**
Joined FB group started friends or private citizens to support social/political goal	59.1	42.5	.26**
Liked or Joined FB group started by a politician/political party	21.7	20.9	.51**
Started a social/political FB group	8.4	7.7	.15**
<i>OTHER ONLINE POLITICAL PARTICIPATION</i>			
Signed or collected signatures for an online petition	52.9	49.6	.42**
Contacted a politician or government official	24.1	26.2	.49**
Boycotted or bought products for political, ethical or environmental reasons	19.5	16.0	.39**
Donated or raised money for a social/political purpose	16.5	17.6	.31**
Taken part in a march or demonstrated	14.7	15.2	.34**
<i>OFFLINE</i>			
Boycotted or bought products for political, ethical or environmental reasons	40.8	34.7	.42**
Signed or collected signatures for a paper petition	38.9	39.3	.29**
Donated or raised money for a social/political purpose	34.9	24.3	.29**
Taken part in an offline march or demonstration	23.3	22.3	.35**
Contacted a politician or government official	13.6	10.5	.40**

Note: *FB: Facebook, n=478, Cell entries are percentages of respondents that indicated to have participated at least once during the past six months in 2011 and 2012. Correlation coefficients are Kentall’s tau-b correlations between activity in 2011 and 2012. Sign: *: p<.05, **: p<.01, ***: p<.001

Most activities were slightly more popular in 2011, which is probably due to the campaign for the federal election on 2 May 2011^{iv}. However, for some political, mostly online, activities we see an increase in 2012. Sharing one’s opinion on a Facebook wall, contacting a politician or government official online, donating or raising money online, and demonstrating online increased in popularity. Among the offline activities signing petitions or collecting signatures for a paper petition show a small increase in activity rates.

Control variables:

Socio-demographic variables

A number of variables are used to control for socio-economic status in the analysis as previous research has shown that socio-economic status is an important predictor for political participation (Rosenstone and Hansen, 1993; Verba et al., 1995). For the variable gender we used a dummy variable (men=1), for ethnicity we also used a dummy variable where 1 stands for `white` and 0 for otherwise. The variable citizenship reflects whether the participant is a Canadian citizen (=1; otherwise=0). In order to capture participants socio-economic status we measured the respondents' mother's highest level of education as previous research has shown that this is a good indicator of young individuals' socio-economic status. The mother's level of education ranges from less than a high school diploma (=1) to more than a university degree (=6) with a mean of 4.44 (SD=1.42).

Political attitudes, motivations and knowledge

As political attitudes and motivations, especially political interest and political efficacy have in previous research proven to be important indicators for political participation (Rosenstone and Hansen 1993; Verba et al. 1995), variables measuring political interest and political efficacy were included in the analysis. Political interest is measured by a simple self-assessment, allowing respondents to indicate whether they are very or quite interested, or whether they are not very or not at all interested in politics, ranging from 1=not at all interested to 4=very interested (M=2.28, SD=0.88). External political efficacy captures whether the respondents believe that they can actually influence political decision making processes. Political efficacy was measured through the question `Do politicians in general care what people like you think?` for which the respondents had to indicate how much they agreed on a five point Likert scale ranging from 1 (hardly any politicians care what people like me think) to 5 (most politicians care what people like me think) (M=3.10, SD=1.04). In addition, controls for respondents' self-placement on the socio-political left-right dimension are included, asking respondents where they would place themselves on a 10-point scale where 0 means a good deal of government involvement in the economy and 10 means very little government involvement in the economy (M=4.05, SD=2.11). As previous research has demonstrated that political knowledge facilitates voter turnout and other forms of political participation (Verba and Nie, 1972; Rosenstone and Hansen, 1993;

Verba et al., 1995; Delli Carpini and Keeter, 1996), respondents' political knowledge was also included and measured with five questions where respondents had to match the correct political office to the people in five photographs, i.e. the British prime minister, the former president of Egypt, Burmese opposition leader, president of the European Commission, and chancellor of Germany. Knowledge was measured with a sum scale of the five items ($M=2.02$, $SD=1.69$).

Internet and Facebook use

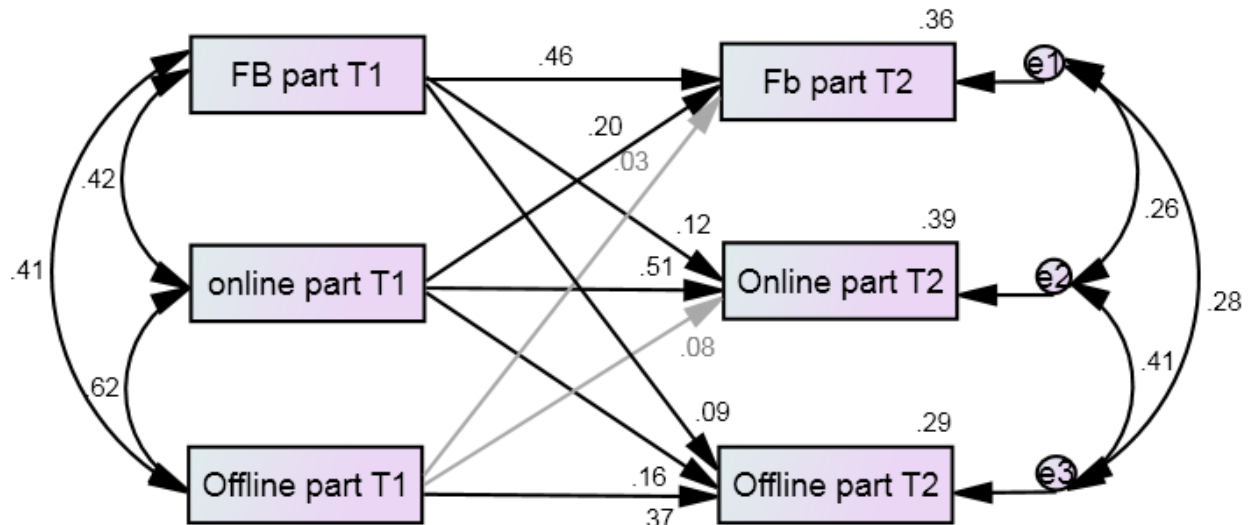
As we are especially interested in how the political use of Facebook might influence other forms of online political participation, the estimation model will also include indicators of students' Internet use (frequency of personal Internet use). Students' frequency of personal Internet use is measured through the question 'On an average day, how often do you use the Internet, the World Wide Web or e-mail for your personal use (outside your studies, work, etc.)?' Answering categories range from 1 (=I hardly or never use the Internet) to 6 (= five hours a day or more) ($M=4.78$, $SD=0.91$). Since Facebook political activity is also related to the intensity of Facebook use, we also include the frequency of Facebook use and the number of Facebook friends. The frequency of Facebook use taps how much time students (with a Facebook account) spent on Facebook on an average day, ranging from 0 (=I hardly ever or never use Facebook) to 6(=more than 3 hours a day) ($M=2.97$, $SD=1.43$). The extensiveness of respondents' Facebook networks is measured through the number of Facebook friends on an 11-point scale ranging from '0 to 99 friends' (=0) to '1000 friends or more' ($M=4.23$, $SD=2.30$).

Results

In order to estimate spill-over effects of Facebook political participation on online and offline participation (and vice versa), we conduct the analysis in two steps. In the first step we will present the path model that estimates the effects of students' Facebook political participation, online and offline political participation in 2011 (time 1) on these forms of political participation in 2012 (time 2). Based on our hypotheses we expect positive causal effects of Facebook political participation especially on general online political activity (and vice versa). In other words, we expect to find stronger medium-specific effects, compared to spill-over effects between the different media.

Figure 1 presents the results for the path-model (estimated in AMOS 20.0.0) that estimates the direct effects of engagement in political participation offline, online and Facebook participation at time 1 on these forms of participation at time 2 (see Appendix A for the zero-order correlation matrix). Maximum Likelihood estimation was employed for estimating the model's coefficients. We allowed for correlation between the exogenous variables and Facebook political participation, general online and offline political participation at time 1 (T1) and between the error terms of the endogenous variables at time 2 (T2) (saturated model). The obtained results do not substantially differ from the estimation model assuming uncorrelated exogenous variables and endogenous error terms. In the path-model significant effects are represented by a bold arrow, whereas non-significant effects are shown through a light grey arrow.

Figure 1 Path- model of political participation spill-over effects



Note: Entries are standardized coefficients (maximum likelihood estimate), saturated model, N=418.

Table 2. Direct effects of Facebook, general online and offline political participation at time 1 on political participation at time 2

	Facebook pol. part. T2		Online pol. part. T2		Offline pol. part T2	
	b	s.e.	b	s.e.	b	s.e.
Facebook pol. part. T1	0.47***	0.041	0.14**	0.047	0.11*	0.052
Online pol. part. T1	0.18***	0.040	0.53***	0.045	0.17***	0.049
Offline pol. part T1	0.03	0.036	0.08	0.040	0.36***	0.044

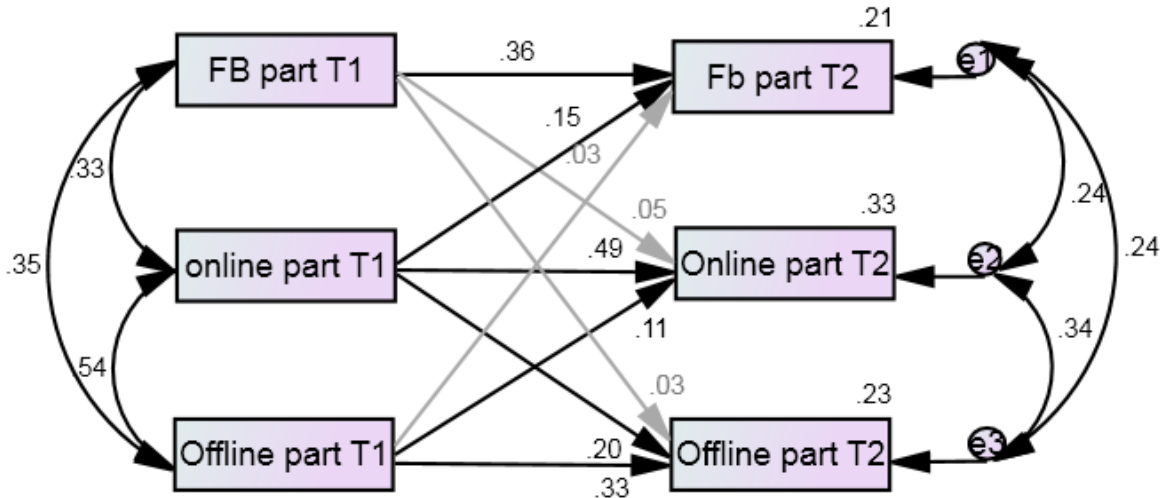
Note: Entries are unstandardized coefficients and standard errors (maximum likelihood estimate), saturated model, N=418. Sign: *: p<.05, **: p<.01, ***: p<.001

The results suggest differential effects of various modes of Facebook, general online and offline political engagement on future political engagement (Table 2). First, the direct effects of the same mode of political participation on similar future political participation are strongest, compared to spill-over effects to other participation modes, which seems plausible. In addition, Facebook political participation at time 1 has both positive significant effects on general online and offline political participation at time 2. However, the effect of Facebook political participation on online activity is relatively weak; and the effect on offline participation is even weaker although both are significant. In other words, the results suggest a modest medium-specific effect of Facebook political activity on general online political activity, and a very modest spill-over effect, to political participation off the Internet. The model also suggests spill-over effects for online political participation; the results reveal a positive effect on both Facebook political activity and offline political participation. In other words, engagement in general online political activity spills-over to offline political engagement and also stays medium-specific and encourages Facebook-mediated political activity. When we compare the strength of the spill-over effects of Facebook participation and general online participation (at T1), the results suggest substantially stronger spill-over and medium-specific effects for online

participation. The results for Facebook participation and online engagement are particularly interesting when compared to the direct effects of offline political participation. While offline political participation at time 1 significantly stimulates offline activity at time 2, there is no spill-over effect to political activity in the online sphere. In short, the results suggest a relatively strong continuity between the specific types of participation, and some mobilizational effects of Facebook and online participation, but little cross-medium mobilizational power of offline participation. The question arises as to whether some of these spill-over effects are mostly due to socio-demographic differences of different types of activists. The model in Figure 1 does not take into account this possibility of spuriousness.

In order to make a more stringent test of Facebook medium-specific and spill-over effects on other forms of political participation we will control for respondents' socio-demographic background variables (gender, ethnicity, and educational level of the respondents' mother), political attitudes (political interest, external political efficacy, internal political efficacy, respondents' self-placement on the left-right scale of the political spectrum and strength of party affiliation), political knowledge, and Internet use (Internet frequency, Facebook intensity, and number of Facebook friends). Figure 2 presents the results for the path-model of the effects of Facebook political activity, general online and offline political participation at time 1 on these forms of political participation at time 2 (saturated model). In order to control for the above mentioned variables we employed the partial correlation matrix of the three participation variables at the two time points controlling for socio-demographics, political attitudes, political knowledge and Internet use (see Appendix A for the partial correlation matrix). Therefore, the control variables are not presented in the path-model. The results suggest that once we take into account the traditional political participation predictors and specific Internet use characteristics we find no longer a spill-over or medium-specific effects of Facebook political activity on general online and offline political participation (Table 3). This suggests that Facebook's potential to mobilize youth into political activity is mediated through the more traditional political participation predictors, as well as Internet and Facebook use.

Figure 2 Path-diagram of political participation spill-over effects controlling for socio-demographics, political attitudes, knowledge and Internet use



Note: Entries are standardized coefficients (maximum likelihood estimate), saturated model, N=410.

Table 3. Direct effects of Facebook, general online and offline political participation at time 1 on political participation at time 2, controlling for socio-demographics, political attitudes, knowledge and Internet use

	Facebook pol. part. T2		Online pol. part. T2		Offline pol. part T2	
	b	s.e.	b	s.e.	b	s.e.
Facebook pol. part. T1	.38***	.005	.065	.052	.030	.057
Online pol. part. T1	.014**	.005	.516***	.025	.214***	.056
Offline pol. part T1	.002	.004	.104*	.046	.312***	.050

Note: Entries are unstandardized coefficients (maximum likelihood estimate) and standard errors. Saturated model, N=410. Sign: *:p<0.05, **:p<0.01, ***:p<0.001.

Differential spill-over effects of different Facebook political activity on online/offline political activities

Our analysis so far suggests that students who engage in online political activities on Facebook were no more or less likely to engage in general online and offline political activities, controlling for the traditional political participation predictors and Facebook and Internet use. However, the three overall activity indexes for Facebook, online and offline political participation might hide some important relationships, as the sum scales include a wide range of activities, e.g. from expressing your opinion on a social/political topic in a Facebook wall to starting your own social/political Facebook group, etc. Obviously aggregated political participation measures might not capture potential differential effects for the various disaggregated political activities. Therefore, in order to conduct a more stringent test of potential differential spill-over effects of the various Facebook political activities, we will employ disaggregated measures.

For this final test of spill-over effects of the individual Facebook activities on the different online and offline political activities, engagement in a specific online or offline political activity is regressed on engagement in a specific Facebook activity. The dependent variables in the different models are engagement in the specific online/offline political activities as measured in the second wave of the survey, represented by a dummy-coded variable. All independent variables are from the first wave of the study and include socio-demographic background variables (gender, ethnic background, education of the respondent's mother), Internet and Facebook use (frequency of Internet use, Frequency of Facebook use and number of Facebook friends), political attitudes (political interest, internal political efficacy, external political efficacy, self-placement on the left-right scale, and strength of party affiliation), and news consumption (average news use online, on the radio, TV and newspaper). The main variable of interest, i.e. the specific Facebook political activity is presented by a dummy variable. For each online and offline political participation activity (i.e. petitioning, donating, boycotting, protesting and contacting), we estimated a multivariate model where we control for the lagged dependent variable (baseline participation at time 1 of the study). The purpose of these models is thus to control for prior engagement at time 1, while assessing the impact of Facebook political activity on political participation at time 2. In total 4 X 10 binary logistic regression models are tested to

estimate differential spill-over effects of the four measured Facebook political activities on the various online and offline counterparts of five general political participation activities (four models for each dependent variable).

Table 4 presents the results for these models estimating spill-over effects of expressing one's opinion on a social/ political topic on one's own Facebook wall or the wall of a friend. To focus on spill-over effects of political Facebook use we only present the models with statistically significant results of the main variable of interest, i.e. the individual Facebook activity (for the models with non-significant results see Appendix). As table 4 makes clear, political expression on your or someone else's Facebook wall has a positive effect on the propensity to online petitioning, online and offline donating, and online and offline contacting politicians or governmental officials, controlling for previous engagement in the subsequent political activities. Regarding the model fit of the models, all models were dominated by previous political participation at time 1 (lagged dependent variable), which accounted for the majority of the explained variance in the dependent variables. For instance, respondents who signed at least one petition at time 1 are 4.73 times more likely to sign at least one petition at time 2, compared to the ones who did not sign any online petition at time 1. However, even after a stringent control for previous political participation, expression of one's opinion on a Facebook wall at time 1 proved to be a significant predictor for online petitioning eight months later, and the online and offline counterparts of donating and contacting. Students who expressed their opinion on a social/ political topic on their or one of their friends' Facebook wall at time 1 are almost two times ($\text{Exp } \beta = 1.96$) more likely to sign an online petition at time 2, holding previous participation and all other control variables constant. The results suggest similar effects for offline donating and online contacting where the odds ratio's for Facebook political expression are respectively 1.97 and 1.63. Finally, we found the strongest effects of political opinion expression on Facebook for online donating ($\text{Exp } \beta = 2.87$) and contacting a political or governmental official off the Internet ($\text{Exp } \beta = 3.89$). Overall, Facebook political expression had a significant effect on five activities out of ten.

Table 4. Spill-over effects of political opinion expression on Facebook walls

	Petition online		Donate online		Donate offline		Contact online		Contact offline	
	B (s.e.) (β)	Exp (β)	B (s.e.) (β)	Exp (β)	B (s.e.) (β)	Exp (β)	B (s.e.) (β)	Exp (β)	B (s.e.) (β)	Exp (β)
Facebook frequency	-.03 (.095)	.97	-.09 (.120)	.91	-.05 (.105)	.95	.01 (.086)	1.01	-.11 (.166)	.89
Facebook friends	.09 (.053)	1.09	.05 (.062)	1.06	-.01 (.056)	.99	.00 (.045)	1.00	.03 (.072)	1.04
Internet frequency	.07 (.138)	1.07	-.25 (.165)	.78	.02 (.140)	1.02	.08 (.135)	1.09	.06 (.205)	1.06
Gender	.18 (.239)	1.19	.16 (.287)	1.17	.18 (.257)	1.19	.56** (.200)	1.75	.71 (.370)	2.03
Ethnicity	.02 (.233)	1.02	-.28 (.303)	.76	.25 (.278)	1.28	-.27 (.208)	0.76	-.15 (.391)	.86
Education mother	-.08 (.081)	.92	.23* (.108)	1.26	.02 (.087)	1.02	.15 (.078)	1.16	-.09 (.136)	.91
Political interest	.07 (.152)	1.08	.07 (.181)	1.07	.18 (.167)	1.20	.24 (.131)	1.28	.43 (.242)	1.54
Int. pol. efficacy	-.14 (.129)	.87	-.08 (.159)	.93	-.03 (.133)	.97	-.09 (.118)	.91	-.20 (.209)	.82
Ext. pol. efficacy	-.17 (.108)	.85	.19 (.140)	1.21	.00 (.109)	1.00	-.03 (.099)	.97	-.19 (.171)	.82
Left-right	-.23*** (.026)	.80	.06 (.068)	1.07	.05 (.057)	1.05	-.09 (.056)	.92	-.02 (.089)	.98
Strength party Affiliation	.15 (.098)	1.16	.15 (.120)	1.17	.25* (.108)	1.28	.09 (.090)	1.10	-.05 (.165)	.95
News consumption	.14 (.152)	1.15	.40* (.198)	1.48	.17 (.179)	1.18	.03 (.156)	1.03	.37 (.281)	1.45
Lagged DV	1.55*** (.220)	4.73	1.49*** (.295)	4.42	1.29*** (.237)	3.62	1.82*** (.196)	6.20	2.46*** (.371)	11.73
Pol. expression FB wall	.67** (.224)	1.96	1.05** (.322)	2.87	.68* (.264)	1.97	.49** (.234.)	1.63	1.36** (.468)	3.89
Constant	-.52 (.891)		-4.28*** (1.12)		-3.68*** (1.033)		-18.40 (1.081)		-4.40** (1.560)	
McFadden R2	.1746		.1425		.1062		.2258		.2828	
N	486		486		485		487		487	

Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001.

Other Facebook activities are a little less important for political participation. However, friending or liking a Facebook group by political parties or politicians is related to more online and offline protesting but not to other forms of participation (see Table 5). The odds for protesting are about twice as high for someone who has joined such an institutionalized political Facebook group. This finding is rather curious, as it suggests a mobilizational flow from a Facebook activity with institutional actors to non-institutionalized forms of participation. Potentially such Facebook ties transmit mobilizing information from the political organization and politicized members of the Facebook group.

Table 5. Spill-over effects of supporting a politician/ political party and/or joining a Facebook group started by a political/ political party

	Online protesting		Offline protesting	
	B (s.e.)	Exp B	B (s.e.)	Exp B
Facebook frequency	.17 (.107)	1.18	-.14 (.107)	.87
Facebook friends	.03 (.068)	1.03	-.04 (.063)	.96
Internet frequency	-.02 (.200)	.98	-.16 (.161)	.85
Gender	.26 (.318)	1.30	.25 (.249)	1.28
Ethnicity	-.00 (.311)	1.00	-.13 (.288)	.88
Education mother	-.07 (.106)	.93	.05 (.092)	1.05
Political interest	.05 (.167)	1.05	.26 (.175)	1.30
Int. pol. efficacy	.17 (.159)	1.19	-.06 (.160)	.94
Ext. pol. efficacy	-.27 (.150)	.76	.01 (.124)	1.01
Left-right	.01 (.229)	1.01	-.12 (.065)	.88
Strength party affiliation	-.21 (.129)	.81	-.11 (.110)	.90
News consumption	.15 (.229)	1.16	.16 (.198)	1.17
Lagged DV	1.81*** (.312)	6.12	1.48*** (.266)	4.41
Join politician/pol party	.76* (.315)	2.14	.74** (.292)	2.10
Constant	-2.80* (1.27)		-1.09 (1.071)	
McFadden R2	.1739		.1446	
N	505		505	

Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001.

The joining of less institutionalized Facebook groups also has minor effects on online protesting and offline donating, see table 6, but not on any other forms of political participation. Overall though, the effects of Facebook activities other than expressing opinions on walls do not seem to make much of a difference, and the links to other forms of political participation are modest.

We could not find any statistically significant effects for founding one's own Facebook group.

Table 6. Spill-over effects of joining a social/political Facebook group started by friends or private citizens

	Offline donating		Online protest ^a	
	B (s.e.)	Exp B	B (s.e.)	Exp B
Facebook frequency	-.05 (.099)	.95	.11 (.110)	1.12
Facebook friends	.00 (.055)	1.00	.03 (.068)	1.03
Internet frequency	.01 (.136)	1.01	.08 (.191)	1.08
Gender	.13 (.253)	1.14	.22 (.311)	1.25
Ethnicity	.04 (.265)	1.04	-.12 (.310)	.89
Education mother	-.01 (.083)	.99	-.07 (.105)	.94
Political interest	.24 (.158)	1.27	.08 (.157)	1.09
Int. pol. efficacy	.01 (.128)	1.01	.23 (.157)	1.26
Ext. pol. efficacy	.01 (.107)	1.01	-.24 (.148)	.79
Left-right	.02 (.053)	1.02	-.00 (.062)	1.00
Strength party affiliation	.23* (.106)	1.26	-.19 (.126)	.82
News consumption	.16 (.172)	1.18	.06 (.229)	1.06
Lagged DV	1.16*** (.231)	3.21	1.84*** (.302)	6.30
Join social/ pol. FB group started by friends	.58* (.252)	1.79	.78* (.321)	2.17
Constant	-3.48*** (.972)		-3.37** (1.285)	
McFadden R2	.0960			
N	508		508	

Note: Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001.
^a Cell entries for the model estimating online protest are unstandardized coefficients and robust standard errors, and odds ratios for skewed logistic regression. Likelihood-ratio test for alpha = 1 $\chi^2(1)=5.36$ prob > $\chi^2 = .0206$

Conclusion and discussion

This paper has investigated the mobilizational power of Facebook political participation on online and offline political action repertoires in a two-wave panel design. Given the special characteristics of Facebook, previous research and theorizing has been very optimistic about the mobilizational potential of Facebook use. The idea has been that Facebook draws in people not previously interested in politics, and recruits into and informs about political participation in unintended ways. While current research has confirmed that Facebook political activism is positively related to online and offline participation, so far there has been little evidence of the causal arrow in this relationship. Without that proof, it is possible that the correlation hides spuriousness or reverse causality. This panel survey with university students is able to test more explicitly whether and how Facebook political participation can be a cause for further political

engagement. We distinguish here between medium-specific effects on online participation and spill-over effects on offline participation.

Our results clearly show that unsurprisingly all forms of political participation are positively related. Furthermore, there is a great amount of continuity between the various forms of participation over a period of 8 months. That is those who are politically active on Facebook at time 1 are also active on Facebook at time 2. That is also true for online participation, but a little less for offline participation. Our findings suggest that Facebook political activity does at least spur further Facebook activity in the future. However, the mobilizational power of political Facebook use for other forms of participation is more limited. While there are small effects, they seem to disappear when classic predictors of political participation are included in the analysis, suggesting that socio-demographic background and general Internet frequency and Facebook intensity are more important explanatory variables for these forms of participation. If anything, the mobilizational power of Facebook is only visible in the politically interested group of students, and not in the group of less interested individuals (results not shown, but see Vissers and Stolle 2011). This is also true for other resource variables. This finding suggests that Facebook mobilization only adds to or mobilizes the ones who already have a larger amount of resources. Facebook political activity is not able to draw in previously disaffected groups of the population and to inspire them to engage in different political action repertoires. However, Facebook activism is not fleeting either, many of the ones who stay active are also engaged several months later. Moreover, Facebook activism also does not seem to distract from other forms of participation and does not crowd them out, as some authors worry. Thus Facebook political activism seems to be a medium that is at worst self-reinforcing in its activities, and at best has modest mobilizing effects on those who are already politicized.

However, within this general finding, we can also point to the concrete types of activities that might hold most mobilizational power. We found that posting and reading political messages and comments on other people's Facebook walls and on one's own are activities that inspire future political activities in other venues. This is particularly true for donating for political causes, petition signing (not surprisingly), and contacting politicians. Interestingly, protesting was more affected by joining institutionalized Facebook groups. While there is no strong theoretical claim here as to why certain activities are more affected by Facebook participation than others, the few

relationships we found suggest that posting and reading political messages on Facebook is not an act without further political consequences.

Future research needs to study Facebook political activism directly online and not just in a survey format. Future survey studies can also look more in depth at potential factors that might mediate the relationship between the use of social networking sites and various forms of political engagement. Engagement on social networking sites might have an indirect effect on political participation through e.g. the stimulation of political knowledge and feelings of political efficacy. Also, an interesting pathway for future research is to disentangle potential differential effects of SNS use and political engagement according to the users' personality characteristics. These outcomes play themselves out over time and answering these questions would require three waves of data. In future work, we plan to conduct a third wave of the study, which is scheduled for the fall 2012.

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Appendix A: correlation matrices

Table A.1 Mean, standard deviations, and zero-order correlations of Facebook, general online and offline political participation at time 1 (T1) and at time 2 (T2).

Variables	M	S.D.	(1)	(2)	(3)	(4)	(5)	(6)
(1) Facebook pol. part. T1	1.41	1.10	1	0.408	0.400	0.531	0.352	0.292
(2) Online pol. part. T1	1.19	1.24	0.408	1	0.587	0.382	0.600	0.427
(3) Offline pol. part. T1	1.41	1.41	0.400	0.587	1	0.320	0.438	0.504
(4) Facebook pol. part. T2	1.29	1.14	0.531	0.382	0.320	1	0.439	0.394
(5) Online pol. part. T2	1.18	1.32	0.352	0.600	0.438	0.439	1	0.539
(6) Offline pol. part T2	1.26	1.35	0.292	0.427	0.504	0.394	0.539	1

Note: Cell entries are zero-order Pearson correlations. All correlation coefficients are significant at the 0.001 level (two-tailed). N=467

Table A.2 Mean, standard deviations, and partial correlations of Facebook, general online and offline political participation at time 1 (T1) and at time 2 (T2).

Variables	M	S.D.	(1)	(2)	(3)	(4)	(5)	(6)
(1) Facebook pol. part. T1	1.42	1.10	1	0.319	0.336	0.437	0.273	0.227
(2) Online pol. part. T1	1.20	1.24	0.319	1	0.559	0.306	0.570	0.387
(3) Offline pol. part. T1	1.41	1.41	0.336	0.559	1	0.261	0.408	0.464
(4) Facebook pol. part. T2	1.29	1.13	0.437	0.306	0.261	1	0.381	0.358
(5) Online pol. part. T2	1.19	1.33	0.273	0.570	0.408	0.381	1	0.514
(6) Offline pol. part T2	1.26	1.35	0.227	0.387	0.464	0.358	0.514	1

Note: Cell entries are partial Pearson correlations, controlling for socio-demographics, political attitudes, political knowledge and Internet use. All correlation coefficients are significant at the 0.001 level (two-tailed). N= 459.

Table A.3 Correlations political Facebook activities at time 1 and time 2 and online and offline political participation activities

		Expression opinion on social/political topic in Facebook wall											
		FB T1	FB T2	1	2	3	4	5	6	7	8	9	10
FB T1	1.000	.427**	.262**	.079	.194**	.167**	.165**	.108*	.184**	.184**	.221**	.229**	
FB T2	.427**	1.000	.305**	.113**	.207**	.142**	.227**	.190**	.206**	.228**	.301**	.202**	
		Supporting or joining a Facebook group started by a politician/political party											
		FB T1	FB T2	1	2	3	4	5	6	7	8	9	10
FB T1	1.000	.535**	.146**	.090*	.156**	.142**	.165**	.146**	.233**	.231**	.224**	.156**	
FB T2	.535**	1.000	.214**	.188**	.223**	.233**	.276**	.212**	.254**	.225**	.277**	.264**	
		Joining a social/political Facebook group started by friends or private citizens											
		FB T1	FB T2	1	2	3	4	5	6	7	8	9	10
FB T1	1.00	.271**	.093*	.110*	.136**	.171**	.063	.132**	.159**	.079	.102*	.087*	
FB T2	.271**	1.00	.212**	.217**	.267**	.254**	.241**	.239**	.263**	.232**	.258**	.226**	
		Starting a social/political Facebook group											
		FB T1	FB T2	1	2	3	4	5	6	7	8	9	10
FB T1	1.000	.127**	.088*	.080	.028	.037	.022	.087*	.138**	.094*	.043	.068	
FB T2	.127**	1.000	.054	.088*	.127**	.205**	.088*	.112**	.125**	.144**	.100*	.214**	

Note: 1: Online petitioning, 2: Offline petitioning, 3: Online donating, 4: Offline donating, 5: Online boycotting/boycotting, 6: Offline boycotting/boycotting, 7: Online protesting, 8: Offline protesting, 9: Online contacting, 10: Offline contacting. Cell entries are two-tailed Kendall- tau correlation coefficients. Sign: *:p<0.05, **:p<0.01, ***:p<0.001.

Appendix B Results binary logistic regressions estimating spill-over effects of Facebook political activities

Table B.1 Expression opinion on a social/political topic on Facebook wall

	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)
	Offline petitioning			Online boycotting			Offline boycotting		
Lagged DV	1.25 (.204)	.000	3.48	2.18 (.303)	.000	8.82	1.71 (.227)	.000	5.53
Pol. expression Facebook wall	-.03 (.230)	.888	.97	.65 (.353)	.066	1.91	.07 (.254)	.796	1.07
N	486			485			485		
McFadden R2	.0925			.1968			.1876		
	Online protest			Offline protest					
Lagged DV	1.91 (.320)	.000	6.77	1.54 (.265)	.000	4.67			
Pol. expression Facebook wall	.59 (.355)	.097	1.80	.53 (.289)	.069	1.69			
N	485			484					
McFadden R2	.1785			.1289					

Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001. Models controlling for socio-demographic background (gender, ethnicity, education mother), Facebook and Internet use (Internet frequency, Facebook frequency and number of Facebook friends), political attitudes (political interest, internal political efficacy, external political efficacy, self-placement on left-right scale), and media use.

Table B.2 Supporting/ joining a Facebook group started by a politician/political party

	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)
	Petition online			Petition offline			Donate online		
Lagged DV	1.68 (.214)	.000	5.36	1.23 (.198)	.000	3.44	1.56 (.290)	.000	4.75
Support politician/ political party	.32 (.271)	.236	1.38	.03 (.253)	.911	1.03	.611 (.314)	.051	1.84
N	507			507			507		
McFadden R2	.1696			.0925			.1249		
	Donate offline			Boycott online			Boycott offline		
Lagged DV	1.28 (.234)	.000	3.61	2.22 (.310)	.000	9.20	1.69 (.220)	.000	5.40
Support politician/ political party	.42 (.287)	.146	1.52	.40 (.352)	.261	1.49	.35 (.267)	.190	1.42
N	505			504			506		
McFadden R2	.0927			.2019			.1647		
	Contact online			Contact offline					
Lagged DV	2.17 (.251)	.000	8.79	2.50 (.356)	.000				
Support politician/ political party	.48 (.303)	.114	1.61	.05 (.405)	.902				
N	508			508					
McFadden R2	.2148			.2492					

Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001. Models controlling for socio-demographic background (gender, ethnicity, education mother), Facebook and Internet use (Internet frequency, Facebook frequency and number of Facebook friends), political attitudes (political interest, internal political efficacy, external political efficacy, self-placement on left-right scale), and media use.

Table B.3 Joining a social/political Facebook group started by friends or private citizens

	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)
	Petition online			Petition offline			Donate online		
Lagged DV	1.63 (.213)	.000	5.09	1.21 (.199)	.000	3.37	1.55 (.287)	.000	4.72
Join social/pol Fb group friends	.16 (.209)	.434	1.18	.17 (.209)	.415	1.19	.49 (.301)	.103	1.63
N	510			510			510		
McFadden R2	.1617			.0935			.1233		
	Boycott online			Boycott offline			Protest offline		
Lagged DV	2.23 (.307)	.000	9.35	1.65 (.224)	.000	5.23	1.62 (.259)	.000	5.03
Join social/pol Fb group friends	-.08 (.290)	.778	.92	.15 (.245)	.533	1.17	.11 (.249)	.655	1.12
N	507			509			508		
McFadden R2	.1882			.1904			.1310		
	Contact online			Contact offline					
Lagged DV	2.22 (.247)	.000	9.25	2.51 (.354)	.000	12.36			
Join social/pol Fb group friends	.26 (.242)	.291	1.29	.105 (.363)	.772	1.11			
N	511			511					
McFadden R2	.2104			.2592					

Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001. Models controlling for socio-demographic background (gender, ethnicity, education mother), Facebook and Internet use (Internet frequency, Facebook frequency and number of Facebook friends), political attitudes (political interest, internal political efficacy, external political efficacy, self-placement on left-right scale), and media use.

Table B. 4 Starting a social/political Facebook group

	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)	B (s.e.)	p	Exp (β)
	Petition online			Petition offline			Donate online		
Lagged DV	1.67 (.212)	.000	5.33	1.23 (.194)	.000	3.43	1.63 (.290)	.000	5.09
Starting a social/ political FB group	.300 (.357)	.400	1.35	.29 (.356)	.413	1.34	-.17 (.449)	.699	.84
N	520			520			520		
McFadden R2	.1700			.0927			.1171		
	Donating offline			Boycotting online			Boycotting online		
Lagged DV	1.27 (.229)	.000	1.21	2.26 (.297)	.000	9.56	1.66 (.216)	.000	5.26
Starting a social/ political FB group	-.06 (.394)	.886	3.56	-.25 (.507)	.622	.78	.34 (.365)	.352	1.40
N	518			517			519		
McFadden R2	.0871			.1976			.1846		
	Protesting online			Protesting offline			Contacting online		
Lagged DV	1.87 (.306)	.000	6.51	1.67 (.253)	.000	5.31	2.32 (.246)	.000	10.23
Starting a social/ political FB group	.55 (.414)	.187	1.73	.45 (.44)	.304	1.57	-.12 (.414)	.771	.89
N	518			518			521		
McFadden R2	.1617			.1437			.2214		
	Contacting offline								
Lagged DV	2.57 (.348)	.000	13.06						
Starting a social/ political FB group	-.01 (.466)	.984	.99						
N	521								
McFadden R2	.2639								

Note: Cell entries are unstandardized binary logistic regression coefficients and robust standard errors in parentheses, and odds ratios (exp (β)). Sign: *:p<0.05, **:p<0.01, ***:p<0.001. Models controlling for socio-demographic background (gender, ethnicity, education mother), Facebook and Internet use (Internet frequency, Facebook frequency and number of Facebook friends), political attitudes (political interest, internal political efficacy, external political efficacy, self-placement on left-right scale), and media use.

ⁱ In addition, the interactive networking aspect of Facebook might indirectly influence political engagement through the stimulation of civic and Internet skills necessary to effectively participate in political life (Muhlberger, 2004; Best and Krueger, 2005; Valenzuela et al., 2009).

ⁱⁱ We expect that the lower response rate is due to the fact that the survey was conducted at the end of the academic year which overlapped with the final exam session.

ⁱⁱⁱ As compensation for participation in the survey students were given the opportunity to enter a lottery where they could win one of six \$50 gift certificates from Amazon.ca.

^{iv} The fact that we compare political participation in 2011, which might be affected by the electoral campaign for the federal elections of May 2, 2011, and political participation in 2012, outside the federal electoral context calls for caution. One can expect that general participation levels in 2011 will be higher than the general participation levels in 2012. However, the main purpose of this study is not to follow individuals over time, but to compare spill-over effects of various forms of political participation. The assumption is that the election campaign affects all forms of participation equally.