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Reinforcement Effects between Digital Media Use and Political Participation:

A Meta-analysis of Repeated-wave Panel Data

A RESEARCH NOTE

ABSTRACT

As digital media use has rapidly increased in prevalence and diversified in form, scholars across the globe have focused extensive attention on how the use of digital media relates to political participation. To assess the results of this emerging body of research, we conduct the first meta-analysis of repeated-wave panel data studies on the relationship between digital media use and political participation. The findings, based on 38 survey-based, repeated-wave panel studies (279 coefficients) bring new evidence to bear on two questions central to this literature. First, the findings provide new insight into the classic *mobilization* versus *reinforcement* debate: contrary to common assumption, the findings support a reinforcement effect, whereby those who are already politically active are motivated to use digital media. Second, the results indicate that the relationship between digital media use and political participation is durable, as studies with a longer time lag were more likely to yield positive and significant effects. Taken together, this evidence in support of a durable reinforcement effect implies the potential for digital media use to contribute to increased inequality in political participation over time. In the concluding discussion, we outline directions for further theoretical inquiry and empirical research that leverage the value of repeated-wave panel studies to make causal inferences.

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Among the questions that arise from the increased prevalence of digital media use, arguably one of the most critical lines of inquiry is how it relates to political participation. From early examinations of the potentially isolating effects of personal computing to the contemporary focus on the ubiquity of smartphones, a common concern that accompanies changing information environments is the potential for disengagement and inequality of political participation (Putnam 2000; Hooghe and Oser 2015).

While prior meta-analyses clearly establish a positive relationship between digital media use and political participation, these studies have noted that the vast majority of extant research on this topic is based on cross-sectional data (Skoric et al. 2016; Boulianne 2018; Chae et al. 2019). Because cross-sectional data analyses cannot determine the temporal order of relationships, researchers have been unable to make causal inferences about the effect direction in the relationship between digital media use and political participation. In contrast, repeated-wave panel data provide the empirical basis for a more rigorous investigation of this relationship.

In this study, we conduct the first meta-analysis of repeated-wave panel data studies on the relationship between digital media use and political participation to address two central questions in this field of study. First, we investigate the empirical support for the *mobilization* thesis and the *reinforcement* thesis to determine whether the causal relationship is such that media use motivates participation, or whether participation motivates media use. Second, we assess whether the relationship between digital media use and political participation is an enduring one that is evident even when testing for long-term effects.

We conduct this study at a timely moment when this field of research is flourishing, as among the 38 repeated-wave panel studies that meet the criteria for inclusion in the present study, 21 have been completed since 2017. The meta-analysis results, based on 38 survey-based repeated-wave panel studies (279 coefficients) conducted between 1982 and 2017 in a

wide range of contexts, show that there is a positive relationship between digital media use and political participation. However, this relationship depends on the causal flow and length of time between the waves of the panel.

Mobilization versus reinforcement

Causal direction

Almost twenty years ago, Norris (2000) outlined three possible relationships between media use and political participation that remain relevant for contemporary research on media effects. *Mobilization* is the idea that media use motivates political participation; *reinforcement* is the idea that political participation motivates media use; and finally, a *virtuous circle* implies reciprocity in the relationship between media use and political participation. While early research on digital media referenced the importance of understanding the causal direction, these ideas remained largely untested due to the lack of repeated-wave panel data. However, in the past few years, these repeated-wave panel designs have become very popular, allowing for a body of scholarship that can be systematically analyzed in relation to reinforcement versus mobilization effects.

The mobilization thesis suggests that digital media use plays a causal role to *mobilize* less engaged people to become more politically active. Digital media use may mobilize people by exposing them to information that encourages them to participate (e.g., campaign information encourages voting), or by providing a low-effort entry point into public affairs that motivates further participation (e.g., signing a petition, and then participating in a public march) (Xenos and Moy 2007; Edgerly et al. 2018). Digital media use may expand participation beyond the usual suspects, and therefore decrease participatory inequalities. In contrast, the reinforcement thesis implies that digital media use *reinforces* the political activism of those who are already active. People who are interested and engaged in politics

may use digital media to further inform their participation, or to document that they participated (e.g., post a voting selfie). In this scenario, digital media would exacerbate well-established participatory inequalities (Schlozman et al. 2010; Oser et al. 2013). As Norris noted, evidence that supports the reinforcement thesis would suggest that digital media use will "strengthen, and not radically transform the existing patterns of social inequality and participation," thereby potentially widening participation gaps between the haves and the have-nots (Norris 2000, pp.121-122).

Finally, the *virtuous circle* thesis proposes an expectation of similar strength of both the mobilization and reinforcement effects in a reciprocal relationship. The virtuous circle theory has been further developed as a reinforcing spiral (Slater 2015). For example, research in relation to reinforcing spirals that focuses on political interest among youth in Sweden indicates a widening gap in political interest between those who participate and those who do not participate (Moeller et al. 2018).

Enduring effects

In addition to the importance of assessing the causal direction of the relationship between digital media use and political participation, it is also critical to assess whether the relationships identified endure over time. Cross-sectional surveys can document a correlation between these variables, such as Chae et al.'s (2019) report of average bivariate correlations. Repeated-wave panels can more clearly identify how changes in media use connect to changes in participation, and thus offer a stronger case for causality.

Repeated-wave designs are useful for assessing the direction of causal effects linking digital media use and political participation, as well as the longevity of the relationship. A common critique of experimental designs is that post-tests tend to be conducted immediately after the intervention, and thus these designs do not assess enduring or long-term effects. In

contrast, repeated-wave panels often have time gaps of months or even years, which allow researchers to evaluate the longer term effects of causal variables and thereby assess the durability of a relationship.

Methods

A meta-analysis is a quantitative content analysis of the existing research on a topic, and our focus is on summarizing tests of relationships between variables. For our examination of the relationship between digital media use and participation, we rely on tests of relationships derived from the analysis of survey data, following the extant meta-analyses in the field (Skoric et al. 2016; Boulianne 2018; Chae et al. 2019). While meta-analysis often focuses on effect sizes, we use the vote-counting method, which is a common approach in many meta-analyses of voting (e.g., Smets and van Ham 2013; Cancela and Geys 2016).

This is the most appropriate meta-analytic method for analyzing the repeated-wave studies in our sample because the diversity of effect estimates poses challenges for calculating valid effect sizes.[1] The vote-counting method focuses on analyzing whether or not the relationship of interest is significant according to standard conventions in social science, and is therefore limited due to the use of specific significance thresholds and the lack of effect size estimation. Despite these limitations, this is the optimal technique for studies like ours in which there is not a common outcome measure (e.g., Strandberg 2008; Stockemer et al. 2018). We use $p < .05$ as a common threshold for determining statistical significance, following established practice in social science. We also examine whether the effect is positive or negative, which is reported for 244 of 279 effects.

Meta-analyses of survey data do not routinely make a distinction between different types of surveys (Čehovin et al. 2019), even though it is widely recognized that repeated-

[1] See online Supplementary Data for additional discussion of the vote-counting method.

wave panel data can provide a more rigorous evidentiary basis for testing relationships between key variables (Wooldridge 2010). The meta-analysis sample includes 38 studies, which is more than sufficient for obtaining valid results. The rapidly growing number of repeated-wave panel data studies in this field of research necessitates a "state of the art" assessment that identifies accumulated knowledge on these topics. This type of synthesis is particularly important due to the relatively high expense and demanding time investment required by this research design in comparison to more common cross-sectional studies.

The studies were identified between May 2015 and February 2019 by searching academic databases and Google Scholar, using the following terms: "Internet," "web," "online," "digital media," "social media," "civic or political" and "engagement or participation." We also used the reference lists of studies identified by search terms to find additional relevant studies. We focus on longitudinal studies that measure changes in the dependent variable over time, or that measure independent variables at time 1 and dependent variables at time 2.

For digital media use, we focus on measures of activities (e.g., *use* of online information sources), rather than attitudes (e.g., *trust* in online information sources). Common measures of digital media use in this literature are: online news (most popular), news through social networking sites, online political expression, and email. For political participation measures, we include studies using behavioral measures, rather than measures of willingness or intent to participate. Common measures of political participation combine electoral, civic, and protest activities, such as voting and protesting. We focus on studies that make a clear empirical distinction in the analysis of online versus offline political activities, and therefore exclude studies that blended online and offline participation measures (e.g., an additive index that combines voting with signing online petitions).

Findings

Profile of studies

The full list of references for the 38 meta-analysis sample studies are noted in the online Supplementary Data. Table 1 provides a profile of the sample studies and the effects reported in each study. The sum of the sample sizes of all the studies in the meta-analysis is more than 70,000 respondents who completed at least two waves of a survey. Approximately half of the studies use samples from the United States, while the other half use samples from Belgium, Canada, Chile, China, Denmark, Germany, Israel, the Netherlands, South Korea, Sweden, Taiwan, and the United Kingdom. The effects are also distributed similarly: approximately half of the effects represent U.S. respondents and the other half represent respondents outside the United States.

[INSERT TABLE 1 ABOUT HERE]

Some surveys were analyzed in multiple publications, but definitive survey identification is difficult, as the surveys are rarely named. Based on the characteristics of the study (e.g., geographic location, data collection time period, sample type, sample sizes), we estimate that approximately 26 distinct datasets were analyzed in these studies. The earliest panel data in the sample was collected (wave 1) in 1982, and the latest reported data collection was in 2017, with most of the studies (n=31) including two waves. The studies were published between 2003 and 2019 with evidence of robust increase in recent publications on these topics, as 21 of the 38 studies were published since 2017.

While no formal tests are available to establish publication bias for our sample, the 38 identified studies are the result of a thorough review of research in the entire field of published and unpublished studies. Thus, our sample aims for a census, rather than a representative sample, and null findings are clearly the most popular finding in our sample.

Meta-analysis results

Table 2 summarizes the aggregate findings in terms of positive and negative effects. The findings show that 68% of coefficients are positive, but for a sizeable proportion of the coefficients (12.5%), researchers report a non-significant effect without noting the effect direction. The proportion of coefficients that are significant at the .05 level is 31%, with 29% positive and 2% negative. These findings point to a positive association between digital media use and political participation.

[INSERT TABLE 2 ABOUT HERE]

Table 3 extends these findings based on a multivariate moderator analysis that investigates causal order of digital media use and political participation, and the length of time between waves. The findings show that the direction of causal flow impacts the likelihood of generating a positive and significant effect. Approximately 44.6% of tests for reinforcement are positive and statistically significant, whereas only 29.8% of the tests for mobilization are positive and statistically significant. In sum, when the relationship is modelled as participation leading to digital media use (reinforcement), the effect is more likely to be positive and significant (p=.031).

Although most research on these topics (cross-sectional and longitudinal) assumes a temporal flow from digital media use to political participation, these meta-analysis findings do not support the *mobilization* thesis, as the effects are more likely to be positive and significant in the reverse direction. Likewise, the findings do not indicate a *virtuous circle* effect, as this thesis would be supported if the evidence showed no meaningful difference in the significance of the mobilization and reinforcement effects.

The results show that, contrary to the assumption in the literature, the empirical evidence supports a *reinforcement* effect. Indeed, evidence of this causal direction is present even in the first published repeated-wave panel study in this area of research, which modeled

civic engagement in 1982 as a predictor of Internet use in 1997 (Jennings and Zeitner 2003). Thus, researchers exploring these topics cannot assume that the causal effect is a mobilizing force that runs from digital media use to political activation – whether the research design includes the interpretation of cross-sectional effects or the empirical modelling of longitudinal studies.

[INSERT TABLE 3 ABOUT HERE]

The findings also indicate that the length of time between waves matters. When designing a repeated-wave survey, researchers often struggle to identify an appropriate time gap due to the competing challenges of panel attrition (a disadvantage of longer time frames) and the capacity to measure change or long-term impacts (which requires a longer time frame). To test the persistence of the relationship, we use the length of time between panel waves as a moderating variable, defining short time frames as less than six months and longer time frames as more than six months. Of the tests based on long-term panels, 38.9% of tests are positive and statistically significant, in contrast to 24.2% of tests based on shorter panels.

The findings in Table 3 show that studies with a time lag of more than six months are more likely to identify a significant and positive relationship between digital media use and political participation than panels with shorter time intervals ($p = .017$). This evidence points to an enduring relationship between digital media use and political participation that is even more prominent when testing for longer-term effects. This two-part finding – that there is a *positive* and *enduring* relationship between digital media use and political participation, and that this relationship is strongest when modeled as a *reinforcement* effect – is an important contribution to ongoing debates in the literature.

Discussion

In sum, we offer the first meta-analysis of repeated-wave panel studies that investigate the relationship between digital media use and political participation. Analyzing 279 effects reported in 38 studies based on data from more than 70,000 respondents, we found that the relationship between digital media use and political participation was often positive (68%), and that 31% of effects were statistically significant. A test of causal direction showed that the effects were more likely to be positive and significant when the relationship was modelled as a reinforcement effect (i.e., participation leads to media use) than when it was modelled as a mobilization effect (i.e., media use leads to participation). This finding provides support for the reinforcement thesis as described by Norris (2000), with the implication that digital media use may exacerbate participatory inequality.

This evidence in support of the reinforcement effect implies there is potential for increased inequality in political participation over time. The findings therefore question the predominant assumption about causal flow in the existing literature and highlight the need for further research using different modelling choices to test these relationships.

As the present study provides new, definitive evidence in favor of reinforcement effects, we conclude by suggesting future research that may advance the study of causal dynamics and context effects. The question of the causal direction of short-term versus long-term effects deserves further attention, as we observed that modelling reinforcement effects is a common feature of longer term panels (e.g., Jennings and Zeitner 2003). To untangle the distinct effects of causal flow and panel length, further research should investigate mobilization versus reinforcement causal flows with attention to short-term versus long-term effects, and the number of survey waves. The most common approach is to measure a stimulus (wave 1) and a response (wave 2), when the causal process could be much more complicated. Further research could offer a more robust test of causal processes, such as the O-S-R-O-R model (Cho et al. 2009), by analyzing original survey data across multiple

studies to test for mediating factors (e.g., political discussion) in the relationship between digital media use and political participation. Another important line of research would be to test reinforcing spirals using more than two waves of survey data (Slater 2015).

The effect of country context is an important line of future research as well, as it is possible that in less developed countries in which digital media use is less prevalent, the adaptation and use of these technologies may have more of a mobilizing effect than in contexts that are already saturated with high levels of digital media use. Age effects also deserve further investigation in order to test the presumption in the literature that younger age groups are more likely to experience a mobilization effect, whereas older adults are more likely to adapt from being politically active in the offline realm to becoming active online (reinforcement) (Kim et al. 2017). A larger sample of studies is necessary in order to fully test these additional research design effects, and given the fast pace of the emergence of these studies, we expect ample opportunity for researchers to more fully investigate these relationships in future research.

Supplementary Data

Supplementary data are freely available at *Public Opinion Quarterly* online.

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Table 1. Profile of studies and coefficients

Sample Characteristics	Number of coefficients	Number of studies
Type of sample		
University students or other school-based samples	142	11
Other youth sample	22	5
Random sample, such as random digit dialing surveys	52	8
Online panels matched to Census characteristics	41	13
Other types of samples, including surveys of social media users, intercept street surveys, etc.	22	3
Country		
United States	137	18
Outside the U.S.	142	20
Sample size		
Less than 250 respondents	18	2
250 to 499 respondents	129	13
500 to 749 respondents	37	8
750 to 999 respondents	35	4
1000 to 1249 respondents	15	4
1250 to 1499 respondents	16	4
1500 and more respondents	29	7
Total	279	38

Notes: Although the meta-analysis is based on 38 studies, the sample characteristics reported in Table 1 total more than 38 sample sources because two studies analyze more than one sample (Kahne et al. 2013; Kim et al. 2017). In addition, Emmer, Wolling, and Vowe (2012) report on multiple survey waves. Of the 20 studies outside of the U.S., five samples are from Sweden; three from Canada; and three from Germany; and samples from all the other countries were used only in one study (Belgium, Chile, China, Denmark, Israel, Netherlands, South Korea, Taiwan, and the United Kingdom).

Table 2. Aggregate findings

Direction		**Number of coefficients**	**Percentage of total coefficients**
Positive Coefficients	*Statistically significant**	81	29.03%
	Not statistically significant	109	39.07%
Negative Coefficients	*Statistically significant**	6	2.15%
	Not statistically significant	48	17.20%
Direction not reported	*Not statistically significant*	35	12.54%
	Total	**279**	

*$p < .05$

Table 3. Digital media use and participation: Causal flow, and time lag effect

	Positive and significant	**Positive, but not significant**	**Negative and significant**	**Negative, but not significant**
Causal flow				
DM to Participation (mobilization)	**29.8%** ***n* = 56**	44.1% *n* = 83	**2.7%** ***n* = 5**	23.4% *n* = 44
Participation to DM (reinforcement)	**44.6%** ***n* = 25**	46.4% *n* = 26	**1.8%** ***n* = 1**	7.1% *n* = 4
	Pearson Chi-square = 8.853 *p* = .031			
Length of time between waves				
Less than 6 months	**24.2%** ***n* = 23**	44.2% *n* = 42	**3.2%** ***n* = 3**	28.4% *n* = 27
More than 6 months	**38.9%** ***n* = 58**	45.0% *n* = 67	**2.0%** ***n* = 3**	14.1% *n* = 21
	Pearson Chi-square = 10.154 *p* = .017			

Note: The analysis is based on a series of cross-tabs or contingency table analysis; *p*-values are based on two-tail tests.

Supplementary Data File for *Public Opinion Quarterly*

Oser, Jennifer, and Shelley Boulianne. "Reinforcement Effects between Digital Media Use and Political Participation: A Meta-Analysis of Repeated-Wave Panel Data."

Table of contents for this Supplementary data (SD) file:

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Rows

1: Variable name (when relevant): This row allows users of syntax script to "read" in the relevant variables to conduct analyses reported on in the article.
2: Description of coding content in each column.
3 through 281: Coding of each effect included in the study.

Columns

A. Author: Study authors and years, APA in-cite citation format.

B. Sample size categories (variable name = samplecate)
   Coding categories based on article description
   1 = Less than 249
   2 = 250-499
   3 = 500-749
   4 = 750-999
   5 = 1000-1249
   6 = 1250-1499
   7 = 1500+

C. Type of sample (variable name = sampletype)
   Codes type of sampling method
   1 = University students, e.g., survey of political science students at a university
   2 = Junior or high school students who are sampled through school
   3 = Random sample RDD or cellphone (e.g., PEW data, Knowledge Networks, ANES)
   4 = Other type of convenience sample (e.g., survey of twitter users or people visiting a website)
   5 = Street surveys of the general public
   6 = Long-term panel design originally recruited through schools/university but now, not youth
   7 = RDD of youth
   8 = Online panel of people adjusted to match Census data
   9 = Sample of youth from online panel
   10 = Non-random youth recruited through social media or other way
   11 = Street surveys of youth

D. Country: string descriptor of all countries

E. U.S. binary variable (variable name = USA1)
   Recoding of "Country" variable as follow:
   0 = All but the U.S.
   1 = U.S.

F. Year of data collection

G. Length of time categories (variable name = wavelength)
Based on the raw numbers of months in between waves, this column categorizes available data into two categories
1 = Less than 6 months
2 = More than 6 months

H. Number of waves: Code the number of waves each study conducted.
Example: if respondents are surveyed in Feb, April and June, code = 3.

I. Internet use measure: Variable name followed by the page number(s) described in article.

J. Political internet use: For the internet use measure, codes whether or not the use is political. Examples of political internet use include activities like signing petitions, as well as consuming news or current events.
0 = Not political
1 = Political

K. Offline political or civic engagement measure: Same coding protocol as the "Internet use measure," provides the variable name followed by page number(s) described in article. This measurement is only offline, and addresses an actual behavior (not behavioral intentions).

L. Reverse causality: If "Internet use" is the dependent variable, and "Offline political or civic engagement" is the independent variable, code = 1. Alternatively, code = 0 if not analyzed as reverse causality, i.e., if "Internet use" is the independent variable that predicts "Offline political or civic engagement" as the dependent variable.
0 = Not reverse causality
1 = Reverse causality

M. Positive effect: Codes whether the effect between "Internet use measure" and "Offline political or civic engagement measure" is positive.
0 = Not positive effect
1 = Positive effect

N. Significant effect: Codes whether the effect is statistically significant (1=yes, 0=no)
0 = Not significant effect
1 = Significant effect

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Andersen, Bjarnøe, Albæk & De Vreese 2016	7	8	Denmark	0	2014-2015	1	2	Online newspaper (p. 114)	1	Offline political participation (p. 114)	0	1	0
Andersen, Bjarnøe, Albæk & De Vreese 2016	7	8	Denmark	0	2014-2015	1	2	Online newspaper (p. 114)	1	Offline political participation during elections (p. 115)	0	1	0
Andersen, Bjarnøe, Albæk & De Vreese 2016	7	8	Denmark	0	2014-2015	1	2	Online newspaper (p. 114)	1	Offline political participation (p. 114)	0	1	0
Andersen, Bjarnøe, Albæk & De Vreese 2016	7	8	Denmark	0	2014-2015	1	2	Online newspaper (p. 114)	1	Offline political participation during elections (p. 115)	0	1	1
Ardevol-Abreu, Hooker, & Zuniga, 2017	5	8	USA	1	2014	2	2	Online political participation (p. 617)	1	Political discussion (p. 618)	1	1	1
Ardevol-Abreu, Hooker, & Zuniga, 2017	5	8	USA	1	2014	1	2	Citzien news production (p. 618)	0	Offlline political participation (p. 617)	0	1	1
Bode, Vraga, Borah & Shah 2014	3	9	USA	1	2008	1	2	Blog use (p. 420)	1	Offline Political participation (p. 420)	0	1	1
Bode, Vraga, Borah & Shah 2014	3	9	USA	1	2008	1	2	Online expression (p. 419)	1	Offline Political participation (p. 420)	0	1	1
Bode, Vraga, Borah & Shah 2014	3	9	USA	1	2008	1	2	Political activies on SNS (p. 420)	1	Offline Political participation (p. 420)	0	1	1
Bode, Vraga, Borah & Shah 2014	3	9	USA	1	2008	1	2	Internet news use (p. 419)	1	Offline Political participation (p. 420)	0	1	0
Boulianne 2011	7	3	USA	1	2008-2009	1	2	Online news (p. 162)	1	Political Discussion (p. 162)	0	1	0
Boulianne 2011	7	3	USA	1	2008-2009	1	2	Online news (p. 162)	1	Political Discussion (p. 162)	1	1	0
Boulianne, 2016	2	1	Canada	0	2010, 2011 or 2013 (W1), 2014 (W2)	2	2	Online news on SNS (p. 1845)	1	Political engagement (p. 1846)	1	1	0
Boulianne, 2016	2	1	Canada	0	2010, 2011 or 2013 (W1), 2014 (W2)	2	2	Online news (p. 1845)	1	Political engagement (p. 1846)	0	1	0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Boulianne, 2016	2	1	Canada	0	2010, 2011 or 2013 (W1), 2014 (W2)	2	2	Online news (p. 1845)	1	Political engagement (p. 1846)	1	1	0
Boulianne, 2016	2	1	Canada	0	2010, 2011 or 2013 (W1), 2014 (W2)	2	2	Online news (p. 1845)	1	Voting (p 7)	0	1	0
Boulianne, 2016	2	1	Canada	0	2010, 2011 or 2013 (W1), 2014 (W2)	2	2	Online news (p. 1845)	1	Boycotting (p. 7)	0	0	0
Boulianne, 2016	2	1	Canada	0	2010, 2011 or 2013 (W1), 2014 (W2)	2	2	Online news (p. 1845)	1	Signing a petition (p. 7)	0	0	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	SNS use (p. 90)	0	Number of groups belong to (p. 90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	SNS use (p. 90)	0	contacted an official (p. 90)	1	0	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	SNS use (p. 90)	0	signed petition (P.90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	SNS use (p. 90)	0	participated in a march (p. 90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	Number of SNS friends (p. 90)	0	Number of groups belong to (p. 90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	Number of SNS friends (p. 90)	0	contacted an official (p. 90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	Number of SNS friends (p. 90)	0	signed petition (P.90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	Number of SNS friends (p. 90)	0	participated in a march (p. 90)	1	1	1
Boulianne, 2019	1	1	Canada	0	2014	2	2	Friended elected official or candidate (p .90)	1	Number of groups belong to (p. 90)	1	1	1
Boulianne, 2019	1	1	Canada	0	2014	2	2	Friended elected official or candidate (p .90)	1	contacted an official (p. 90)	1	1	1
Boulianne, 2019	1	1	Canada	0	2014	2	2	Friended elected official or candidate (p .90)	1	signed petition (P.90)	1	1	1
Boulianne, 2019	1	1	Canada	0	2014	2	2	Friended elected official or candidate (p .90)	1	participated in a march (p. 90)	1	1	1
Boulianne, 2019	1	1	Canada	0	2014	2	2	Posted on SNS (p. 90)	1	Number of groups belong to (p. 90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	Posted on SNS (p. 90)	1	contacted an official (p. 90)	1	1	0
Boulianne, 2019	1	1	Canada	0	2014	2	2	Posted on SNS (p. 90)	1	signed petition (P.90)	1	1	0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Boulianne, 2019	1	1	Canada	0	2014	2	2	Posted on SNS (p. 90)	1	participated in a march (p. 90)	1	1	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Internet use for social and interaction (p. 804)	0	Offline political participation (p. 806)	0	0	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Creative forms of Internet use (p. 805)	0	Offline political participation (p. 806)	0	1	1
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Internet use for social and interaction (p. 804)	0	Political discussion (p. 805)	0	0	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Creative forms of Internet use (p. 805)	0	Political discussion (p. 805)	0	0	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Online news (p. 805)	0	Offline political participation (p. 806)	0	0	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Online political interaction with friends (p. 805)	1	Offline political participation (p. 806)	0	1	1
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Entertainment-oriented online activity (p. 805)	0	Offline political participation (p. 806)	0	1	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Online participation (p. 806)	1	Political discussion (p. 805)	1	1	0
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Online news (p. 805)	0	Political discussion (p. 805)	0	1	1
Ekstrom & Ostman, 2015	6	2	Sweden	0	2010-2012	2	2	Entertainment-oriented online activity (p. 805)	0	Political discussion (p. 805)	0	0	0
Ekstrom, Olsson, & Shehata, 2014	6	2	Sweden	0	2010-2012	2	2	social interaction (p. 175)	0	Public oriented peer talk (p. 174)	0	0	1
Ekstrom, Olsson, & Shehata, 2014	6	2	Sweden	0	2010-2012	2	2	creative purposes (p. 175)	0	Public oriented peer talk (p. 174)	0	0	0
Ekstrom, Olsson, & Shehata, 2014	6	2	Sweden	0	2010-2012	2	2	news and information (p. 175)	0	Public oriented peer talk (p. 174)	0	1	1
Ekstrom, Olsson, & Shehata, 2014	6	2	Sweden	0	2010-2012	2	2	Gaming (p. 175)	0	Public oriented peer talk (p. 174)	0	0	0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2007-2008	2	4	Online political information (p. 241)	1	Political discussion (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2008-2009	2	4	Online political information (p. 241)	1	Political discussion (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2009-10	2	4	Online political information (p. 241)	1	Political discussion (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2007-2008	2	4	Online political information (p. 241)	1	Offline political participation (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2008-2009	2	4	Online political information (p. 241)	1	Offline political participation (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2009-10	2	4	Online political information (p. 241)	1	Offline political participation (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2007-2008	2	4	Online political information (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2008-2009	2	4	Online political information (p. 241)	1	Political discussion (p. 241)	0		0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2009-10	2	4	Online political information (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political discussion (p. 241)	1	Political discussion (p. 241)	0	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political discussion (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-2010	2	4	Online political discussion (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political participation (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political participation (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-10	2	4	Online political participation (p. 241)	1	Political discussion (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political discussion (p. 241)	1	Political discussion (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political discussion (p. 241)	1	Political discussion (p. 241)	1	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-2010	2	4	Online political discussion (p. 241)	1	Political discussion (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political discussion (p. 241)	1	Offline political participation (p. 241)	1	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political discussion (p. 241)	1	Offline political participation (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-2010	2	4	Online political discussion (p. 241)	1	Offline political participation (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2007-2008	2	4	online political information (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2008-2009	2	4	online political information (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2009-10	2	4	online political information (p. 241)	1	Offline political participation (p. 241)	0	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political discussion (p. 241)	1	Offline political participation (p. 241)	0	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political discussion (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-2010	2	4	Online political discussion (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political participation (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political participation (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-2010	2	4	Online political participation (p. 241)	1	Offline political participation (p. 241)	0		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political participation (p. 241)	1	Offline political participation (p. 241)	1	1	1

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2009-2010	2	4	Online political participation (p. 241)	1	Offline political participation (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	2	3	Germany	0	2009-2010	2	4	Online political participation (p. 241)	1	Offline political participation (p. 241)	1	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2007-2008	2	4	Online political participation (p. 241)	1	Political discussion (p. 241)	1		0
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2008-2009	2	4	Online political participation (p. 241)	1	Political discussion (p. 241)	1	1	1
Emmer, Wolling, and Vowe 2012	4	3	Germany	0	2009-2010	2	4	Online political participation (p. 241)	1	Political discussion (p. 241)	1		0
Gil de Zúñiga & Diehl 2019	4	8	USA	1	2013-2014	1	2	News on social media (p. 1261)	1	Voting (p. 1261)	0	0	0
Gil de Zúñiga & Diehl 2019	4	8	USA	1	2013-2014	1	2	Citizen journalism websites (p. 1261)	1	Voting (p. 1261)	0	0	0
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Social media Interaction (p. 50)	0	Offline political participation (p. 49)	0	1	0
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Social Media for social capital (pp. 49-50)	0	Offline political participation (p. 49)	0	1	1
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Social media interaction (p. 50)	0	Offline political participation (p. 49)	0	0	0
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Online political participation (p. 49)	1	Offline political participation (p. 49)	0	1	0
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Online political participation (p. 49)	1	Offline political participation (p. 49)	1	1	1
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Social Media for social capital (pp. 49-50)	0	Offline political participation (p. 49)	0	1	1
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Social media interaction (p. 50)	0	Voting (p. 49)	0	1	0
Gil de Zuniga, Barnidge and Scherman 2017	5	8	USA	1	2013, 2014	1	2	Social Media for social capital (pp. 49-50)	0	Voting (p. 49)	0	0	0
Gil de Zuniga, Molyneux, & Zheng, 2014	2	8	USA	1	2008-09, 2010	1	2	News on SNS (p.618)	1	Offline political participation (p. 618)	0	1	0
Gil de Zúñiga, Weeks, Ardèvol-Abreu, 2017	5	8	USA	1	2014	1	2	News on social media (p. 111)	1	Political discussion (p. 113)	1	0	0
Halpern, Valenzuela, & katz, 2017	2	8	Chile	0	2013	2	2	Change in use of Facebook (p. 7)	1	Change in offline political participation (p. 6)	0	1	1

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Halpern, Valenzuela, & katz, 2017	2	8	Chile	0	2013	2	2	Change in use of Facebook (p. 7)	1	Change in offline political participation (p. 6)	0	1	0
Halpern, Valenzuela, & katz, 2017	2	8	Chile	0	2013	2	2	Change in use of Facebook (p. 7)	1	Offline political participation (p. 6)	0	1	1
Halpern, Valenzuela, & katz, 2017	2	8	Chile	0	2013	2	2	Facebook use (p. 7)	1	Offline political participation (p. 6)	0	1	0
Halpern, Valenzuela, & katz, 2017	2	8	Chile	0	2013	2	2	Facebook use (p. 7)	1	Offline political participation (p. 6)	1	1	1
Halpern, Valenzuela, & katz, 2017	2	8	Chile	0	2013	2	2	Facebook use (p. 7)	1	Offline political participation (p. 6)	1	1	0
Hamilton & Tolbert, 2012	7	8	USA	1	2007-08	1	6	Changes in online political engagement (p. 65)	1	Voting in primaries (p.67)	0	0	0
Hamilton & Tolbert, 2012	7	8	USA	1	2007-08	1	6	Changes in online political engagement (p. 65)	1	Voting in pres election (p. 67)	0	1	1
Hamilton & Tolbert, 2012	7	8	USA	1	2007-08	1	6	Changes in online political engagement (p. 65)	1	Offline political participation (p. 67)	0	1	1
Holt, Shehata, Stromback, Ljungberg 2013	6	3	Sweden	0	2010	1	2	Social media political participation (p. 25)	1	Offline political participation (p. 25)	0	1	1
Jennings & Zeitner, 2003	3	6	USA	1	1997, 1982	2	2	Internet access (p. 315)	0	Offline political participation (p. 317)	1	1	0
Jennings & Zeitner, 2003	2	6	USA	1	1997, 1982	2	2	Internet use (p. 315)	1	Offline political participation (p. 317)	1	1	0
Jennings & Zeitner, 2003	3	6	USA	1	1997, 1982	2	2	Internet access (p. 324)	0	Offline political participation (p. 317)	1	1	0
Jennings & Zeitner, 2003	3	6	USA	1	1997, 1982	2	2	Internet access (p. 324)	0	Civic engagement, Organization memberships (p. 317)	1	1	1
Jennings & Zeitner, 2003	3	6	USA	1	1997, 1982	2	2	Internet use (p. 315)	0	Civic engagement, volunteerism (p. 317)	1	1	0
Jennings & Zeitner, 2003	2	6	USA	1	1997, 1982	2	2	Internet use (p. 315)	1	Civic engagement, volunteerism (p. 317)	1	1	1
Jennings & Zeitner, 2003	2	6	USA	1	1997, 1982	2	2	Internet use (p. 315)	1	Offline political participation (p. 317)	1	1	0
Jennings & Zeitner, 2003	2	6	USA	1	1997, 1982	2	2	Internet use (p. 315)	1	Civic engagement, Organization memberships (p. 317)	1	0	0
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Social media friendship activity (pp. 476-477)	0	Offline political participation (p. 478)	0	1	0
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Social media interest activity (pp. 476-477)	0	Offline political participation (p. 478)	0	1	1
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Social media friendship activity (pp. 476-477)	0	Offline political participation (p. 478)	1	1	0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Social media interest activity (pp. 476-477)	0	Offline political participation (p. 478)	1	1	1
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Online political participation (p. 477)	1	Offline political participation (p. 478)	0	1	0
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Online political participation (p. 477)	0	Offline political participation (p. 478)	1	1	1
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Online political group (p. 478)	0	Offline political participation (p. 478)	0	1	1
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Online political group (p. 478)	0	Offline political participation (p. 478)	1	1	0
Kahne & Bowyer, 2018	4	7	USA	1	2013/2015	2	3	Network size (p. 478)	0	Offline political participation (p. 478)	0	0	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Blog use (p. 6)	0	Civic engagement (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Blog use (p. 6)	0	Political action and expression (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Blog use (p. 6)	0	Voting (p. 7)	0	0	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Political blog and news use (p. 6)	1	Civic engagement (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Political blog and news use (p. 6)	1	Political action and expression (p. 7)	0	1	1
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Political blog and news use (p. 6)	1	Voting (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	3	7	USA	1	2008and2010	2	2	Online participation (pp. 9-10)	1	Civic engagement (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	3	7	USA	1	2008and2010	2	2	Online participation (pp. 9-10)	1	Political participation (p. 10)	0	1	1
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Email and IM use (p. 7)	0	Civic engagement (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Email and IM use (p. 7)	0	Political action and expression (p. 7)	0	1	0
Kahne, Lee, & Feezell, 2013	2	2	USA	1	205/6/7/8	2	2	Email and IM use (p. 7)	0	Voting (p. 7)	0	1	1
Kahne, Lee, & Feezell, 2013	2	2	USA	1	205/6/7/8	2	2	Interest-driven online participation (p. 7)	0	Civic engagement (p. 7)	0	1	1
Kahne, Lee, & Feezell, 2013	2	2	USA	1	205/6/7/8	2	2	Interest-driven online participation (p. 7)	0	Political action and expression (p. 7)	0	1	1
Kahne, Lee, & Feezell, 2013	2	2	USA	1	2005/6/7/8	2	2	Interest-driven online participation (p. 7)	0	Voting (p. 7)	0	0	0
Kahne, Lee, & Feezell, 2013	3	7	USA	1	2008and2010	2	2	Interest-driven online participation (p. 7)	0	Civic engagement (p. 7)	0	1	1
Kahne, Lee, & Feezell, 2013	3	7	USA	1	2008and2010	2	2	Interest-driven online participation (p. 7)	0	Offline political participation (p. 10)	0	1	0
Kahne, Lee, & Feezell, 2013	3	7	USA	1	2008and2010	2	2	Internet access (p. 10)	0	Civic engagement (p. 10)	0	0	0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Kahne, Lee, & Feezell, 2013	3	7	USA	1	2008and2010	2	2	Internet access (p. 10)	0	Offline political participation (p. 10)	0	0	0
Kim & Chen, 2015	2	8	South Korea	0	2012/2014	2	2	Social media news use (pp. 2351-2352)	1	Civic engagement (p. 2352)	0	1	1
Kim, Russo, & Amna, 2017	3	2	Sweden	0	2010 & 2012	2	2	Online political participation (pp. 906-907)	1	Offline political participation (pp. 906-907)	0	1	1
Kim, Russo, & Amna, 2017	3	9	Sweden	0	2010 & 2012	2	2	Online political participation (pp. 906-907)	1	Offline political participation (pp. 906-907)	1	1	1
Kroh and Neiss 2012	7	3	Germany	0	1995-2008	2	13	Internet Access (p. 161)	0	Active political work (p. 175)	0	1	1
Kwak, Lane, Weeks, Kim, Lee & Bachleda 2018	4	8	USA	1	2016	1	2	Sm political expression (p. 206)	1	Offline political participation (p. 206)	0	1	1
Kwak, Lane, Weeks, Kim, Lee & Bachleda 2018	4	8	USA	1	2016	1	2	SM for interactional use (p. 207)	0	Offline political participation (p. 206)	0	0	1
Lane, Kim, Lee, Weeks, Kwak, 2017	3	8	USA	1	2012	1	2	Social Media Political Information Sharing (pp. 5-6)	1	Offline Political Participation (p. 6)	0	1	1
Lane, Kim, Lee, Weeks, Kwak, 2017	3	8	USA	1	2012	1	2	Social Media Political Information Sharing (pp. 5-6)	1	Offline Political Participation (p. 6)	1	0	0
Lane, Kim, Lee, Weeks, Kwak, 2017	3	8	USA	1	2012	1	2	Online Cross-cutting Discussion (p. 5)	1	Offline Political Participation (p. 6)	0	1	0
Lane, Kim, Lee, Weeks, Kwak, 2017	3	8	USA	1	2012	1	2	Online political participation (p. 6)	1	Offline Political Participation (p. 6)	0	1	0
Lane, Kim, Lee, Weeks, Kwak, 2017	3	8	USA	1	2012	1	2	SM personal information sharing (p. 6)	1	Offline Political Participation (p. 6)	0	0	0
Lane, Kim, Lee, Weeks, Kwak, 2017	3	8	USA	1	2012	1	2	SM personal information receiving (p. 6)	1	Offline Political Participation (p. 6)	0	0	0
Lee, Shah, & McLeod 2013	3	3	USA	1	2008	1	2	Online news (p. 691)	1	Political discussion (p. 691)	0	1	0
Lee, Shah, & McLeod 2013	3	3	USA	1	2008	1	2	Online political information (p. 691)	1	Political discussion (p. 691)	0	1	0
Lee, Shah, & McLeod 2013	3	3	USA	1	2008	1	2	Online political information (p. 691)	1	Offline political participation (p. 691)	0	1	1
Lee, Shah, & McLeod 2013	3	3	USA	1	2008	1	2	online political discussion (p. 691)	1	Offline political participation (p. 691)	0	1	1
Lee, Shah, & McLeod 2013	3	3	USA	1	2008	1	2	online political discussion (p. 691)	1	Civic participation (p. 691)	0	1	0
Lee, Shah, & McLeod 2013	3	3	USA	1	2008	1	2	online political discussion (p. 691)	1	Political discussion (p. 691)	1	1	0
Lin, 2016	2	10	Taiwan	0	2012	1	2	Facebook use (p. 287)	1	Offline political participation (p. 287)	0	1	1

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Lin, 2016	2	10	Taiwan	0	2012	1	2	Passive facebook use (p. 287)	1	Offline political participation (p. 287)	0	1	0
Lin, 2016	2	10	Taiwan	0	2012	1	2	Active facebook use (p. 287)	1	Offline political participation (p. 287)	0	1	0
Lin, 2016	2	10	Taiwan	0	2012	1	2	Passive facebook use (p. 287)	1	Offline political participation (p. 287)	0	1	0
McGregor & Mourão, 2017	2	8	USA	1	W1: 2015 W2: 2016	1	2	Online Political Participation (p. 270)	1	Offline Political Participation (p. 270)	0	1	1
Mesch and Talmud 2010	2	3	Israel	0	2005 AND 2007	2	2	Internet access (p. 1101)	0	Community activities (pp. 1101-1102)	0	1	0
Mesch and Talmud 2010	2	3	Israel	0	2005 AND 2007	2	2	Internet access (p. 1101)	0	Organizational membership (p. 1102)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet issue (pp. 11-12)	1	Civic participation (p. 12)	0	1	1
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet campaign (pp. 11-12)	1	Civic participation (p. 12)	0	0	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet official contacting (pp. 11-12)	1	Civic participation (p. 12)	0	0	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet protest (pp. 11-12)	1	Civic participation (p. 12)	0	0	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet issue (pp. 11-12)	1	Political action and expression (p. 12)	0	1	1

SD3. Coded data

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet campaign (pp. 11-12)	1	Political action and expression (p. 12)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet official contacting (pp. 11-12)	1	Political action and expression (p. 12)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet protest (pp. 11-12)	1	Political action and expression (p. 12)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet issue (pp. 11-12)	1	Campaign activity (pp. 12-13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet campaign (pp. 11-12)	1	Campaign activity (pp. 12-13)	0	1	1
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet official contacting (pp. 11-12)	1	Campaign activity (pp. 12-13)	0	0	0

SD3. Coded data

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet protest (pp. 11-12)	1	Campaign activity (pp. 12-13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet issue (pp. 11-12)	1	Civic group membership (p. 13)	0	1	1
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet campaign (pp. 11-12)	1	Civic group membership (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet official contacting (pp. 11-12)	1	Civic group membership (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet protest (pp. 11-12)	1	Civic group membership (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet issue (pp. 11-12)	1	Political group membership (p. 13)	0	1	0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet campaign (pp. 11-12)	1	Political group membership (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet official contacting (pp. 11-12)	1	Political group membership (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet protest (pp. 11-12)	1	Political group membership (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet issue (pp. 11-12)	1	Voting (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet campaign (pp. 11-12)	1	Voting (p. 13)	0	1	0
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet official contacting (pp. 11-12)	1	Voting (p. 13)	0	1	0

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Middaugh & Kahne, 2011	2	2	USA	1	first wave 2005-2007 second wave after 2008 election (2008-2009)	2	2	Recruitment for internet protest (pp. 11-12)	1	Voting (p. 13)	0	1	0
Moeller, Kuhne & De vereese, 2018	3	3	Netherlands	0	2013-2014	1	4	Nu.nl Exposure to news (pp. 451-452)	1	Voting (p. 450)	0	1	0
Shah, McLeod, Kim, Lee, Gotlieb, Ho & Breivik, 2007	5	8	USA	1	(2002, 2004,2005)	2	3	Changes in web news consumption (p. 225)	1	Political discussion (p. 225)	0	1	1
Shah, McLeod, Kim, Lee, Gotlieb, Ho & Breivik, 2007	5	8	USA	1	(2002, 2004,2005)	2	3	Changes in web news consumption (p. 225)	1	Political discussion (p. 225)	0	1	0
Shah, McLeod, Kim, Lee, Gotlieb, Ho & Breivik, 2007	5	8	USA	1	(2002, 2004,2005)	2	3	News consumption (p. 225)	1	Political consumerism (p. 223)	0	1	0
Shah, McLeod, Kim, Lee, Gotlieb, Ho & Breivik, 2007	5	8	USA	1	(2002, 2004,2005)	2	3	Changes in web news consumption (p. 225)	1	Political consumerism (p. 223)	0	1	0
Shehata, Ekstrom, & Olsson, 2016	7	2	Sweden	0	2010 & 2011 & 2012	2	2	Online political participation (pp. 1148-1149)	1	Political discussion with parents (p. 1161)	1	1	0
Shehata, Ekstrom, & Olsson, 2016	7	2	Sweden	0	2010 & 2011 & 2012	2	2	Online political participation (pp. 1148-1149)	1	Political discussion with friends (p. 1161)	1	1	1
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Have a facebook account (p. 823)	0	Offline political participation (p. 835)	0	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Number of friends on FB (p. 823)	0	Offline political participation (p. 835)	0	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Frequency of using SNS (p. 823)	0	Offline political participation (p. 835)	0	0	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Internet use (p. 824)	0	Offline political participation (p. 835)	0	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Online news use (p. 823)	0	Offline political participation (p. 835)	0	1	1
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Have a facebook account (p. 823)	0	Civic participation (p. 835)	0	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Number of friends on FB (p. 823)	0	Civic participation (p. 835)	0	1	1

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Frequency of using SNS (p. 823)	0	Civic participation (p. 835)	0	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Internet use (p. 824)	0	Civic participation (p. 835)	0	0	1
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Online news use (p. 823)	1	Civic participation (p. 835)	0	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Have a facebook account (p. 823)	0	Civic participation (p. 835)	1	1	0
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Number of friends on FB (p. 823)	0	Civic participation (p. 835)	1	1	1
Theocharis & Quintelier, 2016	7	2	Belgium	0	2012, 2013	2	2	Frequency of using SNS (p. 823)	0	Civic participation (p. 835)	1	1	1
Towner 2013	2	1	USA	1	2012	1	2	Campaign on facebook (p. 531)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on google+ (p. 531)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on youtube (p. 531)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on twitter (p. 531)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on facebook (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on google+ (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on youtube (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on twitter (p. 532)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on facebook (p. 531)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on google+ (p. 531)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on youtube (p. 531)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on twitter (p. 531)	1	Offline political participation (p. 531)	0	1	1
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on facebook (p. 532)	1	Offline political participation (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on google+ (p. 532)	1	Offline political participation (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on youtube (p. 532)	1	Offline political participation (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on twitter (p. 532)	1	Offline political participation (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on blogs (p. 531)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on blogs (p. 531)	1	Offline political participation (p. 531)	0	1	1
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on blogs (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on blogs (p. 532)	1	Offline political participation (p. 531)	0	0	1

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign on Tumblr (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on Tumblr (p. 531)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on Tumblr (p. 532)	1	Offline political participation (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on Tumblr (p. 531)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on online newspapers (p. 531)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on online newspapers (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on online newspapers (p. 531)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on online newspapers (p. 532)	1	Offline political participation (p. 531)	0	1	1
Towner 2013	2	1	USA	1	2012	1	2	Campaign on tv network websites (p. 531)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on tv network websites (p. 532)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on tv network websites (p. 531)	1	Offline political participation (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on tv network websites (p. 532)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on presidential websites (p. 531)	1	Voting (p. 531)	0	0	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on presidential websites (p. 532)	1	Voting (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Campaign on presidential websites (p. 531)	1	Offline political participation (p. 531)	0	1	0
Towner 2013	2	1	USA	1	2012	1	2	Scale of change in campaign attention on presidential websites (p. 532)	1	Offline political participation (p. 531)	0	0	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Debates on SM (p. 1052)	0	Civic engagement (p. 1052)	0	0	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Tuned in after reading about debates on SM (p. 1052)	1	Civic engagement (p. 1052)	0	0	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Commented on the debates on social media (p. 1052)	1	Civic engagement (p. 1052)	0	1	1

Variable name (when relevant)	samplecate	sampletype		USA1		wavelength					reverse	positive	sign
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Serendipitously exposed to debate information on social media (p. 1052)	1	Civic engagement (p. 1052)	0	1	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Encountering debate information on Twitter (p. 1052)	1	Civic engagement (p. 1052)	0	1	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Encountering debate information on Twitter (p. 1052)	1	Civic engagement (p. 1052)	0	1	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Encountering debate information on Twitter Via hashtags (p. 1052)	1	Civic engagement (p. 1052)	0	1	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Encountering debate information on Twitter Via searching tweets (p. 1052)	1	Civic engagement (p. 1052)	0	0	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Social media as a source of political information (p. 1052	1	Civic engagement (p. 1052)	0	1	0
Vaccari, Chadwick, & O'Loughlin, 2015	3	4	United Kingdom	0	2014	1	2	Websites (p. 1052)	0	Civic engagement (p. 1052)	0	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Facebook Political Participation (p. 265)	1	Offline political participation (p. 265)	0	1	0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Opinion expressing on fb (p. 265)	1	Protesting (p. 270)	1	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Opinion expressing on fb (p. 265)	1	Protesting (p. 270)	0	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Join FB group (p. 265)	1	Protesting (p. 270)	1	0	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Join FB group (p. 265)	1	Protesting (p. 270)	0	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Facebook Political Participation (p. 265)	1	Offline political particpation - boycott (p. 265)	1	1	0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Opinion expressing on fb (p. 265)	1	Contact official (p. 265)	0		0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Opinion expressing on fb (p. 265)	1	Contact official (p. 265)	1	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online contacting (p. 265)	1	Contact official (p. 265)	0	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online contacting (p. 265)	1	Contact official (p. 265)	1		0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online political particpation (p. 265)	1	Offline political particpation - boycott (p. 265)	0	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online political particpation (p. 265)	1	Offline political particpation - boycott (p. 265)	1	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online petitions (p. 265)	1	Petitions (p. 270)	0		0

SD3. Coded data

Variable name (when relevant)	**samplecate**	**sampletype**		**USA1**		**wavelength**					**reverse**	**positive**	**sign**
Author	Sample size categories	Type of sample	Country	U.S. binary variable	Year of data collection	Length of time categories	Number of waves	Internet use measure	Political internet use	Offline political or civic engagement measure	Reverse causality	Positive effect	Significant effect
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online petitions (p. 265)	1	Petitions (p. 270)	1		0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Opinion expressing on fb (p. 265)	1	Petitions (p. 270)	0		0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Opinion expressing on fb (p. 265)	1	Petitions (p. 270)	1		0
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online protesting (p. 265)	1	Protesting (p. 270)	1	1	1
Vissers & Stolle, 2014	2	1	Canada	0	2011, 2012	2	2	Online protesting (p. 265)	1	Protesting (p. 270)	0		0
Zeh & Holtz-Bacha, 2015	7	3	Germany	0	2009, 2014, 2017	2	7	General Internet use	0	Political discussion	0	1	1
Zeh & Holtz-Bacha, 2015	7	3	Germany	0	2009, 2014, 2017	2	7	Social media use	0	Political discussion	0	1	1
Zeh & Holtz-Bacha, 2015	7	3	Germany	0	2009, 2014, 2017	2	7	News use	1	Political discussion	0	1	1
Zhong 2011	1	4	China	0	2009	1	2	Collective play (p. 2356)	0	Offline civic engagement (p. 2356)	0	1	1
Zhong 2011	1	4	China	0	2009	1	2	Gaming time (p. 2356)	0	Offline civic engagement (p. 2356)	0	0	1

1. Additional literature search and study selection information

The literature search began in 2015, which was the start date of our project. Based on the search terms noted in the article, standard academic databases were used, including Web of Science, Scopus, and Google Scholar. Studies were identified as relevant if they analyzed repeated-wave surveys with a measurement of online and offline participation. The reference list of these identified articles were then searched to identify further relevant articles. As the universe of studies that fit the criteria is relatively small but growing, the authors also consulted research experts on the topic to identify additional studies.

2. Vote-counting method, additional literature

The available primary studies on this topic do not allow a meta-analysis that relies on statistics such as estimated effect sizes and standard errors, or to use models based on weights. In this situation, the vote-counting method is the most feasible approach for conducting a synthesis of extant studies. The key limitations of this method are that it relies on specific significance thresholds, and does not enable effect size estimation. Despite these limitations, this method allows researchers to use meta-analytic techniques to synthesize studies that do not have a common outcome measure. Useful references on this topic in addition to those cited in the article are listed below.

Borenstein, Michael, Larry V. Hedges, Julian P. T. Higgins, and Hannah R. Rothstein. 2009. Vote Counting - A New Name for an Old Problem. In *Introduction to Meta-Analysis*. Chichester, UK: Wiley.

Bushman, Brad J., and Morgan C. Wang. 2009. Vote-Counting Procedures in Meta-Analysis In *The Handbook of Research Synthesis and Meta-Analysis*, edited by H. Cooper, L. V. Hedges and J. C. Valentine.

Card, Noel A. 2015. *Applied Meta-Analysis for Social Science Research*. New York: Guilford Publications.

Section 3: Syntax (SPSS) for conducting analysis presented in tables

```
* Encoding: UTF-8.
/*Syntax file for Reinforcement Effects between Digital Media Use and Political Participation. July 2019.
/*analysis for Table 1

FREQUENCIES VARIABLES=samplecate sampletype wavelength USA1 reverse positive sign
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=USA1
  /ORDER=ANALYSIS.

/*Analysis for Table 2
CROSSTABS
  /TABLES=sign BY positive
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.

/*Analysis for Table 3

IF  (positive = 1 & sign = 1) Four=1.
EXECUTE.
IF  (positive = 1 & sign = 0) Four=2.
EXECUTE.
IF  (positive = 0 & sign = 1) Four=3.
EXECUTE.
IF  (positive = 0 & sign = 0) Four=4.
EXECUTE.
FREQUENCIES VARIABLES=Four
  /ORDER=ANALYSIS.
CROSSTABS
  /TABLES=Four BY wavelength reverse
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ CORR
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```