Article

Twenty Years of Digital Media Effects on Civic and Political Participation

Shelley Boulianne[1] iD

Abstract

More than 300 studies have been published on the relationship between digital media and engagement in civic and political life. With such a vast body of research, it is difficult to see the big picture of how this relationship has evolved across time and across the globe. This article offers unique insights into how this relationship manifests across time and space, using a meta-analysis of existing research. This approach enables an analysis of a 20-year period, covering 50 countries and including survey data from more than 300,000 respondents. While the relationship may vary cross-nationally, the major story is the trend data. The trend data show a pattern of small, positive average coefficients turning into substantial, positive coefficients. These larger coefficients may be explained by the diffusion of this technology across the masses and changes in the types of use, particularly the rise of social networking sites and tools for online political participation.

Introduction

For more than 20 years, the Internet has captured the attention of pundits and artists offering accounts of how this media can or may transform our day-to-day lives. For example, in fictional book/movie The Circle (Goetzman, Bregman, Ponsoldt, & Ponsoldt, 2017), social network site developers sit around a table to discuss how to address low voter turnout, proposing a link between the user's profiles and voter registration along with a reminder to vote on election day. The idea evolves into allowing

[1]MacEwan University, Edmonton, Alberta, Canada

Corresponding Author:
Shelley Boulianne, MacEwan University, Room 6-398, City Centre Campus, 10700 – 104 Avenue, Edmonton, Alberta, Canada T5J 4S2.
Email: sjboulianne@gmail.com

users to vote online, enabling "true democracy for the first time in human history" (Goetzman et al., 2017). More than 300 studies have used survey data to test the relationship between digital media use, such as online news sources and social networking sites, and offline engagement in civic and political life, such as voting, volunteering, and protesting. With so many studies published in this 20-year period, it is difficult to identify the trends. How has this relationship evolved over this 20-year period? How has the introduction of social networking sites changed this relationship? No single study or data source can offer an account of how the relationship has evolved over a 20-year period. This study reports on a meta-analysis of existing research. This meta-analysis weaves together hundreds of studies to examine the evolution of the relationship over time as well as how this relationship differs across the globe. This project is a critical contribution to scholarship because it offers a wealth of data to challenge or support existing narratives about the role of the Internet in civic and political life.

Several studies explore trends in digital media's role in citizen's political participation (Bimber & Copeland, 2013; Bimber, Cunill, Copeland, & Gibson, 2015; Copeland & Bimber, 2015; Strandberg & Carlson, 2017; Tolbert & McNeal, 2003; Vaccari, 2013). However, the focus has been on single countries and on participation in election campaigns, such as voting, attending rallies, and trying to persuade others to vote. While election campaigns are important, they are not the whole story. Citizens engage in civic and political activities, such as contacting government officials, talking politics, boycotting, and volunteering in their community, on a daily basis. With a broader definition of participation, we can observe the relationship between digital media use and participation across time and space. As digital media use diffuses across the population, is the relationship growing? Does the relationship increase gradually or is there a period marking a dramatic change, that is, the rise of social networking sites? How does the relationship differ cross-nationally? Does the relationship differ for more democratic systems, compared with less democratic systems? Is the United States distinctive in terms of digital media use and participation in civic and political life?

To answer these questions, this article offers a meta-analysis of existing research that uses survey data to test the relationship between digital media use, such as social networking sites, online news sites, and other Internet uses, on offline participation in civic and political life, broadly defined to reflect manifestations across the globe. The size of this meta-analysis is exceptional, as evidenced by a recent meta-analysis of meta-analyses studies in communications (Rains, Levine, & Weber, 2018). These meta-analyses studies include, on average, 50 studies with a range between 14 and 165 studies (Rains et al., 2018), whereas this study summarizes hundreds of studies. This large database is necessary to examine how the relationship has evolved over 20 years (1995 to 2016) and across more than 50 countries.

The findings suggest great variation in the effect sizes. Early research showed small, but positive coefficients between digital media and offline participation in civic and political life. More contemporary studies show substantial, positive coefficients between digital media use and participation. The trend is explained by the rise of social networking sites, more interactive websites, and the rise of online tools to facilitate

political participation, such as Change.org and similar sites. While there are some cross-national differences, they do not align with existing theories about cross-national differences in digital media effects. Finally, there is little evidence that the United States is distinctive and there is little evidence that democratic systems are distinct from nondemocratic systems.

Digital Media in Election Campaigns Over Time and Across Countries

Over the past 20 years, digital media use has been widely studied in relation to its impact on democratic practices. Political campaigns have adopted this technology with the expectation that it would connect candidates to voters and could be used to target campaign materials based on voters' interests and consequently increase electoral success (Howard, 2006). Beyond election campaigns, digital media can be used to acquire and share information as well as build and sustain networks to facilitate collective action on social problems (Boulianne, 2015). Outside democratic systems, digital media provide space to organize outside of state surveillance, creating international connections, raising funds, and activating support (Howard & Hussain, 2013). Ultimately, the goal is to challenge authoritarian regimes and advance democratic principles (Howard & Hussain, 2013). While this technology enables social change, digital media can also lead to dire outcomes on democratic practices, such as social control and political manipulation (Howard, 2015).

Early research showed small, positive coefficients between digital media and participation in civic and political life (Boulianne, 2009), but further research was fuelled by expectations of larger impacts. These expected impacts were described as "more robust over time and not dependent upon a particular historical context" (Xenos & Moy, 2007, p. 715). The theories of larger impacts pointed toward the diffusion of digital media across the population and changes in the types of digital media use. In a book titled *Here Comes Everybody*, Shirky (2008) outlined the possibilities presented by widespread adoption of digital media. Digital media offer tools for people to self-organize to solve collective problems, leading to quicker resolutions and working outside traditional institutional structures (Shirky, 2008).

As digital media use became more widely adopted or became "mainstream" (Xenos & Moy, 2007, p. 704), the relationship was expected to increase over time. Bimber et al. (2015) tracked the rise in popularity of online political information in the 2001, 2005, and 2010 British election periods. Greater use of online information was expected to produce greater impacts on participation (Bimber et al., 2015). In particular, the effects of digital media were expected to increase as usage spread beyond those who are already interested and engaged to the average citizen. Rather than mobilizing a few citizens, the diffusion of digital media could enable the mobilization of the masses (Shirky, 2008).

Part of the explanation of an evolving relationship relates to evolving uses. Karpf (2016) made an obvious, but critical, point that

the Internet of 2016 is, in important respects, *different* from the Internet of 2012 or 2006, or 1996. The devices we use to access the Internet, the sites that we frequent on the Internet, and the ways we use those sites are all in a state of flux. And this is all happening while the medium itself diffuses to broader segments of the population. (p. 17)

In the contemporary period, mobile phones and tablets have become popular devices. Social networking sites have become popular sites. Social networking sites may be distinctive as a form of digital media use. A meta-analysis focused on early uses of the Internet (1995-2005) found an average standardized coefficient of .07 (Boulianne, 2009). A meta-analysis of social media found a substantially larger average standardized coefficient of .125 (Boulianne, 2019). However, a direct comparison of results is complicated by the different scope of these projects. The 2009 meta-analysis focused on the United States (38 studies), whereas the social media meta-analysis had a global scope (133 studies across more than 25 countries).

Social networking sites are not the only change. Websites moved from being simply broadcast tools into tools that citizens could use to send text messages to friends, self-organize, and campaign on behalf of their parties (Bimber et al., 2015; Stromer-Galley, 2014; Vaccari, 2013). These changes in websites *could* prompt larger impacts of digital media on engagement. A meta-analysis of web interactivity experiments demonstrates positive outcomes on attitudes and behavior intentions (Yang & Shen, 2018). However, this line of research on political campaigns found the relationship to be minimal (Bimber et al., 2015; Stromer-Galley, 2014; Vaccari, 2013).

Few studies have examined the relationship between digital media use and political participation over time. Bimber and colleagues found idiosyncratic and nonlinear relationships between digital media (exclusively online political information) across different types of election campaign–related activities from 1996 to 2012 in the United States (Bimber & Copeland, 2013; Copeland & Bimber, 2015; also see Tolbert & McNeal, 2003) and in the United Kingdom from 2001 to 2010 (Bimber et al., 2015). They suggested that the 2008 election may be an exception in a pattern of inconsistent digital media effects across different types of political activities (Bimber & Copeland, 2013) because of the unique features of the Obama campaign and the rise of social media. They revisited these findings with 2012 election data and concluded that the relationship continues to be idiosyncratic year to year (Copeland & Bimber, 2015). Bimber and colleagues offered theories of why the relationship might be idiosyncratic, including the media affordances offered by Twitter and YouTube as well as other platforms. These platforms offer greater choices for elites to mobilize voters, which make digital media effects highly contextual and variant (Bimber et al., 2015). Finally, the rise of self-directed action and network effects make digital media effects path-dependent and nonlinear (Bimber et al., 2015).

Vaccari (2013) was also skeptical of a linear relationship after studying multiple election cycles. He proposed that digital media technologies change across time, but the process is not linear, but rather nuanced and granular (Vaccari, 2013). The data offered on the 2007 and 2011 Australian elections suggest that the relationships between digital media use and different forms of participation vary in each election

cycle, but do not show a consistent pattern of increasing or decreasing effects (Vaccari, 2013). In the Italian elections of 2006 and 2008, the relationship was significant in 2006, but not in 2008 (Vaccari, 2013). In contrast, Strandberg and Carlson (2017) found similar (positive and significant) relationships in the 2007, 2011, and 2015 Finnish elections.

Election campaigns are interesting because they are distinct periods of innovation in digital media technologies—high stakes games lead to innovations and risk-taking in the use of technology. These innovations feed into the next election cycle in part through the hiring of staff to work on new campaigns (Kreiss, 2012, 2016). This process of innovation may also have impacts outside the electoral context and across nations.

The U.S. presidential election campaigns are closely observed internationally, which can lead to cross-national innovations in the use of technology. For example, innovations in the 2008 Obama campaign have served as examples for political campaigns across the globe. Kreiss (2016) described the Obama campaigns as prototypes, inspiring future campaigns. Chadwick (2013) offered many examples of how the Obama campaign strategies were considered in the U.K. 2010 election, because they were "tried and true methods" (Chadwick, 2013, p. 7). Bimber et al. (2015) also noted the 2008 Obama campaign's impact in the 2010 U.K. elections, which led to some initial hypotheses about "stronger relationships in 2010 than the previous years" (p. 26), following results from the 2008 American National Election Study (Bimber & Copeland, 2013). This process of technology adoption presents a challenge and opportunity for studying the relationship between digital media and participation across time and space. Although the distinct effects of Obama's digital media strategy would be evident in the 2008 results in the United States, the effects would only be observed in 2010 in the United Kingdom. As such, each country would be following a similar trajectory but on a different timeline. Despite theorizing about the diffusion of effects from the United States to the United Kingdom, the data offered more significant relationships between digital media and various political activities in 2005 in the United Kingdom, not in 2010 as expected (Bimber et al., 2015). However, the findings point to the importance of looking simultaneously at how digital media effects differ cross-nationally and across time.

Vaccari (2013) wrote that

> the implicit premise . . . has been that the difference between digital politics in the United States and in other Western democracies is simply a time lapse-that what happened and worked in America will sooner or later happen and work in other, somewhat similar countries. (p. viii)

Vaccari (2013) argued the effects in the United States are specific to its institutional and organizational character, making it an exception or deviant case, rather than a model for Western democracies. While institutional structures are important, they seem most likely to explain why the relationship between digital media and citizen's election participation might be context specific. The mobilization processes around

elections are structured by a country's election laws and unique institutional structures. Thinking about citizen's participation beyond election campaigns, the relationship may be more consistent across different countries.

Cross-national survey work has been limited and when this work is conducted, the measures of digital media use and citizen's participation are rather weak. For example, the World Values Survey includes a question about general Internet use and membership in civic organizations, which hardly covers the exhaustive ways of using digital media and being engaged in civic and political life. Gainous, Wagner, and Abbott (2015) used the Asian Barometer survey (nine countries) to examine digital media effects and found that the effects do not differ by type of political system (Freedom House democracy index), but differ according to how participation is measured: election campaign (traditional) versus protest activities (signing petitions, street protests). In another article, they used the Arab Barometer (seven countries) and find that the effects of Internet use on participation (voting, petitions, street protests) depend on the degree to which the Internet is free from restrictions (Wagner & Gainous, 2013). In both studies, Internet use was measured as frequency of use (daily, weekly, monthly, etc.) with no specificity in how this technology is used (Gainous et al., 2015; Wagner & Gainous, 2013). In sum, the cross-national comparisons suggest that contextual issues (e.g., Internet freedom, but not the Freedom House democracy index/aggregate scores) may be important to how digital media effects manifest themselves on citizen's participation. Furthermore, this research suggests that to understand cross-national differences requires examining citizens' participation outside the electoral process.

Digital Media in Civil Society Over Time and Across Countries

Civil society includes the sphere outside state institutions. There are multiple streams of civil society to consider—the *extra-institutional* political sphere represented by social movement organizations, such as Greenpeace, with related platforms, such as Change.org. There is also the *charitable* sphere represented by nonprofit organizations, such as the Red Cross, Oxfam, and other charitable groups with related platforms, such as gofundme. Compared with research on election campaigns and digital media, there is far less research on digital media effects in civil society and on civic engagement (see Boulianne, 2015).

As discussed in relation to elections, the diffusion of technological innovations may originate in the United States and transfer elsewhere. For example, the United Kingdom's 38 Degrees, a "hybrid mobilization movement" (Chadwick, 2013; Chadwick & Dennis, 2017), is modeled after MoveOn.org (and Australia's GetUp!). However, there is likely more coevolution of digital media and digital media effects on participation in civic life. This coevolution could manifest as a consistency in digital media effects across countries because of common platforms. For example, Change.org is the "world's largest social petition company" (Karpf, 2016, p. 64). The website boasts more than 100 million users, including more than 100,000 organizations across 196 countries (www.change.org/about). A similar organization, Avaaz.org also has a

global presence with similar number of countries and members (https://secure.avaaz
.org/page/en/about/). The tools of participation in civil society are international.

Furthermore, unlike elections where the major players are national parties, in civil
society, the major players are international. For example, for Change.org, the target of
these campaigns may be government, but they may be nonprofit *international* organi-
zations, such as the Red Cross or multinational corporations, such as Shell Oil or Fox
Broadcasting Company (Karpf, 2016, Chapter 3). The process of mobilization facili-
tated through these sites may transcend national borders. This mobilization process
starts with a petition, leads to collecting contact information, then possibly the forma-
tion of a group; this group could then organize other activities, including offline pro-
test events. Karpf (2016) provided many examples of movements that begin as online
petitions and lead to more robust movements. Earl and Kimport (2011) offered many
other examples. They describe these processes as e-mobilizations, where "the web is
used to facilitate the sharing of information in the service of an offline protest action"
(Earl & Kimport, 2011, p. 12). This e-mobilization process may transfer across national
boundaries. The mobilization processes are more transnational than the mobilization
processes that happen around elections and in relation to voting. In terms of cross-
national patterns, the mobilization process would be easier in democratic countries,
which may be more receptive to petitions and protect the rights to assembly for groups.
Nonetheless, the mobilization process could work outside democratic states. Again,
the Freedom House scores related to democracy (political rights, civil liberties) are
relevant moderators of the relationship between digital media use and participation in
civic and political life.

The effects of digital media in the civic sphere may be more linear because efforts
to engage digital media do not follow the ebbs and flows of an election cycle. The
work of civil society organizations continues linearly, rather than stops at the end of
a specific campaign. Karpf (2016) argued that this is a key distinction between elec-
tions and political advocacy—elections end with a clear outcome, which can be eval-
uated as successful or not, whereas political advocacy is continual, with no clear end,
and is evaluated in terms of small scale changes. In sum, the research questions are as
follows:

> **Research Questions 1:** How does the relationship between digital media and par-
> ticipation differ cross-nationally? Does the relationship differ for democratic sys-
> tems? Is the United States distinctive?
> **Research Questions 2:** How does the relationship between digital media and par-
> ticipation differ across time? Is there a period marking dramatic change? Are the
> U.S. trends different?

Method

A meta-analysis is a "statistical synthesis" of data (Borenstein, Hedges, Higgins, &
Rothstein, 2009, p. xxiii). Meta-analyses are most often used to summarize the effects
of an intervention and often relies on "effect sizes" to assess the effectiveness of the

intervention (Borenstein et al., 2009; Ellis, 2010). In this study, the analysis is restricted to those studies employing *survey research* to assess the relationship between digital media use and participation in civic and political life. The analysis of survey data tends to use systematic analysis approaches and standardized estimates, enabling some degree of comparison of estimates across studies. The value of this meta-analysis project, specifically, is to enable a comparison of coefficients across time and across different political contexts. Compiling the results of these studies into a systematic review helps to illustrate the big picture of how the relationship has evolved across time and space. This meta-analysis addresses a clear gap in the evidence about the relationship between digital media effects and participation. There is no study that can account for yearly variations in the effects of digital media on participation, covering a 20-year period. Likewise, there are no studies that can account for this relationship in more than 50 countries. Finally, there are no single studies that can claim to summarize the results from more than 300,000 respondents, as this meta-analysis does.

Search Strategy

The studies were originally compiled using searches of academic databases and Google Scholar, using a combination of keywords to measure digital media use as well as participation in civic and political engagement, such as "civic or political" and "engagement or participation." The search process began in May 2015 and concluded in October 2017.

Unlike other meta-analysis studies that run a query to produce a sample of studies from a handful of databases (Matthes, Knoll, & von Sikorski, 2018) or focus on a handful of journals (Rains et al., 2018), this study seeks a census of the entire body of research. Academic databases, such as Communication and Mass Media Complete, have a bias toward published manuscripts. The ISI Thomson Web of Science social sciences citation index (see Table 1) search was our starting point, but this database has known biases toward North American journals, which is detrimental to the research questions in this article (Harzing, 2017). To address this problem, Google Scholar was used as a supplement to traditional academic databases.

The abstracts were reviewed to identify whether the study presented survey data. If survey data were used, the full study was tracked down and reviewed to determine whether the relationship between digital media use and participation was assessed. This search query and review process produced a set of more than 300 relevant survey-based studies that focused on campaign or news websites, email, social networking sites, blogs, chat rooms, petition-signing websites, and so forth. In terms of types of digital media to include, we included any measure of digital media use where the device or uses required an Internet connection, for example, mobile apps that require an Internet connection, such as online news sites. The most popular measures of digital media use were centered on political information, which includes use of online news sources and social networking sites' news features, as well as campaign websites. The second most popular measures of digital media use focused on generic measures of frequency or use versus nonuse, as illustrated in the Gainous et al. (2015) and Wagner

Table 1. Highlights of Cross-National Differences in Average Effect Sizes.

Country	Number of studies k = 243	Average across studies	SD
Australia	3	.138	.053
Belgium	3	.064	.033
Canada	4	.127	.099
Chile	3	.120	.035
China	14	.163	.134
Colombia	4	.110	.026
Germany	13	.090	.092
Hong Kong	13	.162	.111
Israel	2	.146	.168
Italy	3	.310	.054
Lithuania	2	.257	.014
South Korea	10	.136	.153
The Netherlands	3	.059	.005
Singapore	3	.136	.076
Sweden	9	.206	.240
Taiwan	5	.113	.134
United Kingdom	12	.195	.211
United States	127	.130	.121

and Gainous (2013) findings. For offline participation in civic and political life, the activities studied were related to voting, volunteering, boycotting, participating in street marches, and so forth. The most popular approach to measuring offline participation was to blend civic activities and political activities, such as combining voting, volunteering in the community, and protesting. The second most popular approach is to focus on election campaign participation exclusively.

In addition, studies were excluded if they focused on behavior intentions (e.g., intent to vote) or attitudes toward digital media use (e.g., trust in online news, motivations for using social media) as the focus of this meta-analysis is on activities, not attitudes. For this specific article, studies and/or coefficients were excluded when the measures blurred online and offline activities, such as measuring consumption of printed newspapers and online newspapers or if the measures blurred online and offline political activities, such as voting with signing online petitions. There were less than 15 studies that were excluded for this blurred measurement approaches (e.g., Chadwick, O'Loughlin, & Vaccari, 2017). These "hybrid" approaches (Chadwick, 2013) merit a separate analysis with distinct research questions. The core research questions center on how online activities relate to offline activities; the spheres are treated as distinct, reflecting popular practice in the literature. This distinction also offers clarity around the independent and dependent variables. This topic is revisited in the "Discussion" section. The list of studies are published as supplemental material on the journal website, as are additional details on the search and analysis strategy.

Analysis Strategy

While the database of research contains more than 300 studies and more than 2,000 coefficients within these studies, the analysis presented in this article focuses on standardized coefficients, largely derived from multivariate models accounting for the impact of demographic variables. Standardized coefficients are the most common estimates reported in this body of research. Sometimes unstandardized ordinary least squares coefficients are reported, alongside standard deviations and in these cases, we standardized the coefficients by multiplying the coefficient by the standard deviation of x divided by the standard deviation of y.

However, there is a good deal of research focused on logistic regression analysis, which does not have agreed-upon standardization techniques. For example, Menard (2004) presented six different options for standardizing logistic regression coefficients. Within this body of research, few studies offer standardized logistic regression. Indeed, the literature on election effects across time all use logistic regression analysis (Bimber & Copeland, 2013; Bimber et al., 2015; Copeland & Bimber, 2015; Strandberg & Carlson, 2017; Tolbert & McNeal, 2003; Vaccari, 2013). Because of the lack of agreement on standardization of logistic regression coefficients, these coefficients are excluded from the analysis. However, there are many other studies using the multiple years of the American National Election Studies (e.g., Chan, 2014), so the omission is not detrimental to the research questions.

Several studies report more than one data set within the study. These data sets are identified as distinct if they are based on different time periods (e.g., Emmer, Wolling, & Vowe, 2012; Kelm & Dohle, 2018; Pearce, Freelon, & Kendzior, 2014), by country (e.g., Chan, Chen, & Lee, 2017), or distinct samples, such as teenagers versus young adults (Kim, Russo, & Amna, 2017). For this article, where the focus is on standardized coefficients, there are 225 studies containing 251 distinct data sets. After accounting for these different data sets within studies, the multiple coefficients are averaged at the data set level, according to meta-analysis recommendations (Lipsey & Wilson, 2001). In other words, if the study included multiple measures of digital media use, for example, campaign websites and social media use, these multiple estimates are averaged prior to using the coefficient in the analysis. This approach offers a high-level assessment of digital media effects, without getting into the specifics of measurement. The approach is necessary to provide a holistic view of digital media effects across 20 years of changing uses.

Likewise, if the study examined participation in election campaigns as well as in civic or protest activities (e.g., protest), these multiple estimates are averaged prior to using the coefficient in the analysis. This approach is a practical necessity as the most common method of measuring participation involves blurring electoral, civic, and protest participation (Boulianne, 2015). The data set–level averages are then used in computing the grand average, as well as the averages at the country level and for specific years. While the different estimates are based on different measures of both the independent and dependent variables, as well as contain different statistical controls in the models (see discussion in Becker & Wu, 2007; Peterson & Brown, 2005), these
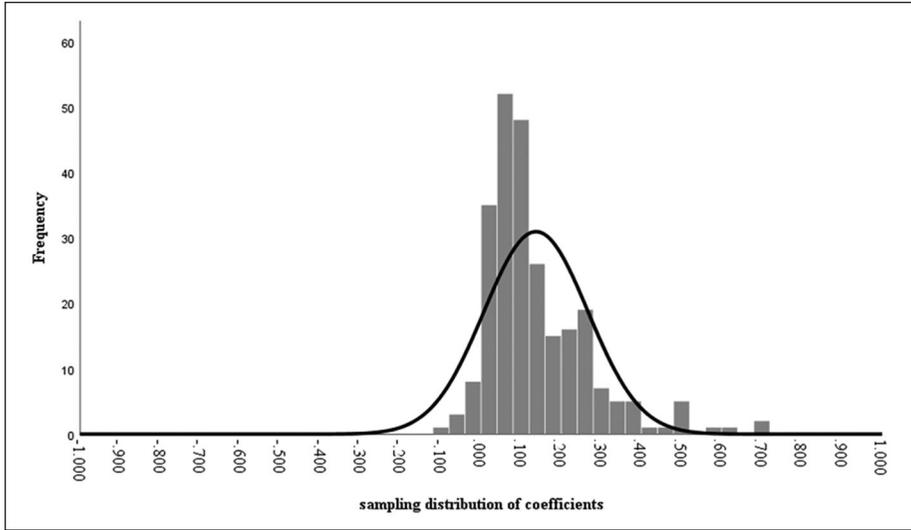
Figure 1. Standardized coefficients for 251 data sets.

challenges are offset by the benefits of conducting a meta-analysis. A meta-analysis of existing research is the only way to capture year to year variations across 20 years of data collection as well as to capture cross-national variations in the relationship between digital media use and engagement.

In addition to examining cross-national differences and year of data collection, we assess whether the relationship differs for democratic systems. We replicate the Freedom House scores analysis offered by Gainous et al. (2015). Using the Freedom House (2017), we coded each country's classification. These classifications are based on degree of democracy observed in each country, as measured by the extent to which civil liberties and political rights are protected (as mentioned, the right to assembly is critical), degree to which the Internet is free from restrictions (important to digital media effects, as per Wagner & Gainous, 2013), as well as the degree to which the press is free and independent. In addition, Freedom House (2017) provided a summary score comprised of 25 different indicators. All of these classifications are assessed in trying to understand cross-national differences. The Freedom House (2017) edition is based on observations from 2016. Ideally, this information would be based on the year of data collection for that country. Unfortunately, this report is only available after 2006, which is halfway through the time period covered by these studies.

Findings

As Figure 1 illustrates, the standardized coefficients ($k = 251$) range between $-.090$ and .686 on a scale between -1.00 and $+1.00$. The average coefficient is .137 with a standard deviation of .129. Approximately, one third of coefficients are between .05

Table 2. Pearson Correlation of Coefficients and Freedom House (2017) Scores.

	Average coefficient k = 240
Democracy score	−.036
(25 indicators, low to high)	p value = .582
Political rights[a]	−.049
(low to high)	p value = .453
Civil liberties[a]	.024
(low to high)	p value = .712
Degree of freedom of the press	−.057
(not, partly, free)	p value = .382
Degree of Internet freedom	−.036
(not, partly, free)	p value = .580

[a]Reverse coded from the original Freedom House (2017) scores.

and .10 on the standardized scale (± 1). Almost all of these coefficients are derived from multivariate models that account for the influence of demographic variables. On average, the models contain 12 independent variables and explain approximately 27% of the variance in the dependent variable. On average, the valid sample size used in the models is 1,400 cases. Figure 1 illustrates strong variation in the coefficients, raising questions about why the coefficients vary so dramatically. This article investigates two possibilities: cross-national differences and trend differences.

Table 1 highlights the cross-national results of countries reporting more than one study. As mentioned, within each of these studies, there are multiple coefficients. These coefficients are averaged at the data set level before being used in the calculation of country-level averages. Based on 127 studies, the average coefficient for the United States studies is .130 ($SD = .121$), compared with .144 ($SD = .138$) for 124 studies conducted outside the United States. The difference was not significant ($F = .806$, $p = .370$, ANOVA). According to these results, the United States is not distinctive in terms of average coefficients. Indeed, the average coefficient for the United States is similar to that observed for Canada and Australia. In addition, the average coefficient for the United States is similar to that observed in Singapore, which does not have a free press system.

Freedom House (2017) scores are used to assess whether the relationship differs for different types of political systems (Table 2). There are five classifications used in the Freedom House (2017) report. None of the classification systems correlate with the size of the coefficient. Using the three categories for press systems (not free, partly free, and free), the average coefficients are .139 ($SD = .119$, $k = 21$) for not free systems, .154 ($SD = .119$, $k = 36$) for partly free systems, and .128 ($SD = .124$, $k = 183$) for free press systems. The difference was not significant ($F = 0.725$, $p = .485$, ANOVA; also see correlation analysis, Table 2). Using the three categories for degree to which the Internet is free from restrictions (not free, partly free, and free), the
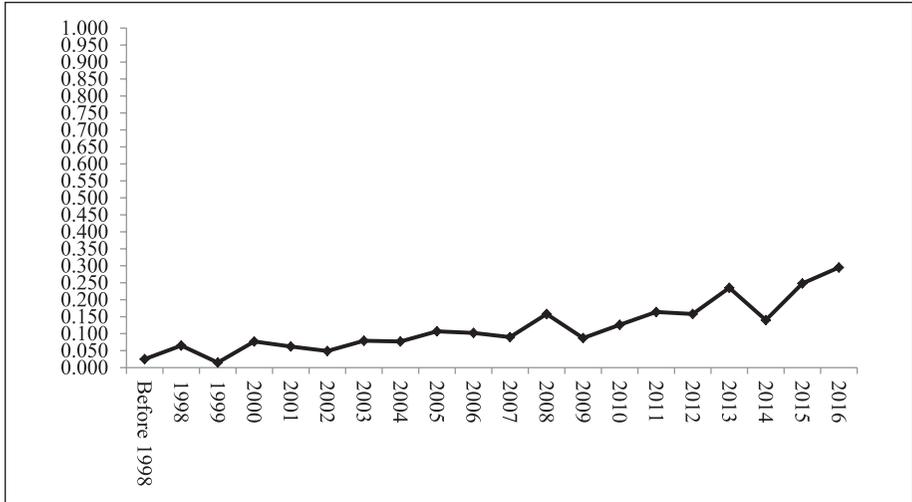
Figure 2. Trend line for all countries.

average coefficients are .147 (SD = .132, k = 16) for not free Internet systems, .139 (SD = .092, k = 23) for partly free Internet systems, and .131 (SD = .126, k = 201) for free Internet systems. The difference was not significant (F = 0.153, p = .858, ANOVA; also see correlation analysis, Table 2).

Because there are few studies prior to 1998, these results have been pooled. These effects are averaged to form the start of the trend line (.025). There were only three studies conducted in 2016 with an average of .295. Figure 2 presents the average coefficients based on year of data collection. There is some volatility in the coefficients in the last few years, despite a large number of data sets tracking these trends. The average coefficient increases dramatically from 2012 to 2013, drops down in 2014, before returning to 2013 levels in 2015.

In Table 3, the yearly averages are provided with a 95% confidence interval. Greater variance in each year's average is a function of the number of studies in each year (more studies decrease the interval size) and variance of the estimates in each year (greater variance in the estimates increases the interval). Some years offer a clearer picture of the effects, compared with others. However, the key point is that the effects are increasing across time. Put simply, there is a strong correlation between year of study and effect size (Pearson correlation of .322, k = 244, p < .001).

For U.S. studies (k = 125), the Pearson correlation between year of study and effect size is .310 (p < .001) and for non-U.S. studies (k = 119), the correlation is .346 (p < .001). There seems to be little difference between the United States and other countries. Figure 3 presents average coefficients U.S. studies compared with non-U.S. studies, starting with 2003 when there are a consistent set of estimates outside the United States (see Table 3 for year-to-year variations). In both cases, the trend line

Table 3. Trend Estimates With 95% Confidence Intervals, Sample Sizes.

All data sets, F = 2.263, p = .002, ANOVA

Year	k	Average	SE	Lower 95% CI	Upper 95% CI
1995	2	0.025	0.005	0.015	0.035
1996	1	0.015			
1998	7	0.065	0.017	0.032	0.098
1999	3	0.015	0.007	0.001	0.029
2000	8	0.077	0.022	0.034	0.120
2001	4	0.062	0.030	0.003	0.121
2002	2	0.049	0.036	−0.022	0.120
2003	12	0.079	0.030	0.020	0.138
2004	7	0.077	0.026	0.026	0.128
2005	7	0.107	0.040	0.029	0.185
2006	6	0.102	0.029	0.045	0.159
2007	8	0.090	0.032	0.027	0.153
2008	33	0.158	0.020	0.119	0.197
2009	11	0.087	0.019	0.050	0.124
2010	23	0.126	0.026	0.075	0.177
2011	9	0.164	0.048	0.070	0.258
2012	40	0.158	0.024	0.111	0.205
2013	16	0.235	0.049	0.139	0.331
2014	33	0.140	0.020	0.101	0.179
2015	9	0.248	0.047	0.156	0.340
2016	3	0.295	0.085	0.128	0.462

United States, F = 1.903, p = .020, ANOVA

Year	k	Average	SE	Lower 95% CI	Upper 95% CI
1995	2	0.025	0.005	0.015	0.035
1996	1	0.015			
1998	6	0.062	0.020	0.023	0.101
1999	3	0.015	0.007	0.001	0.029
2000	7	0.072	0.025	0.023	0.121
2001	2	0.030	0.010	0.010	0.050
2002	2	0.049	0.036	−0.022	0.120
2003	7	0.129	0.033	0.064	0.194
2004	6	0.085	0.029	0.028	0.142
2005	2	0.166	0.102	−0.034	0.366
2006	3	0.119	0.052	0.017	0.221
2007	4	0.061	0.006	0.049	0.073
2008	27	0.168	0.023	0.123	0.213
2009	6	0.092	0.019	0.055	0.129
2010	9	0.186	0.053	0.082	0.290
2011	2	0.285	0.215	−0.136	0.706
2012	19	0.123	0.023	0.078	0.168
2013	4	0.287	0.144	0.005	0.569
2014	10	0.103	0.025	0.054	0.152
2015	2	0.197	0.069	0.062	0.332
2016	1	0.362			

Non-United States, F = 1.586, p = .086, ANOVA

Year	k	Average	SE	Lower 95% CI	Upper 95% CI
1998	1	0.080			
2000	1	0.116			
2001	2	0.094	0.056	−0.016	0.204
2003	5	0.009	0.037	−0.064	0.082
2004	1	0.029			
2005	5	0.083	0.042	0.001	0.165
2006	3	0.084	0.033	0.019	0.149
2007	4	0.118	0.065	−0.010	0.245
2008	6	0.117	0.024	0.070	0.164
2009	5	0.080	0.038	0.006	0.154
2010	14	0.087	0.021	0.046	0.128
2011	7	0.130	0.030	0.071	0.189
2012	21	0.189	0.041	0.109	0.269
2013	12	0.218	0.048	0.124	0.312
2014	23	0.156	0.026	0.105	0.207
2015	7	0.263	0.059	0.147	0.379
2016	2	0.261	0.135	−0.004	0.526

Note. 95% CIs calculated as average ±(1.96 × standard error). This table presents standard errors, whereas the rest of the article presents standard deviations. The standard deviation can be computed by multiplying the standard error by the square root of k. CIs = confidence intervals.
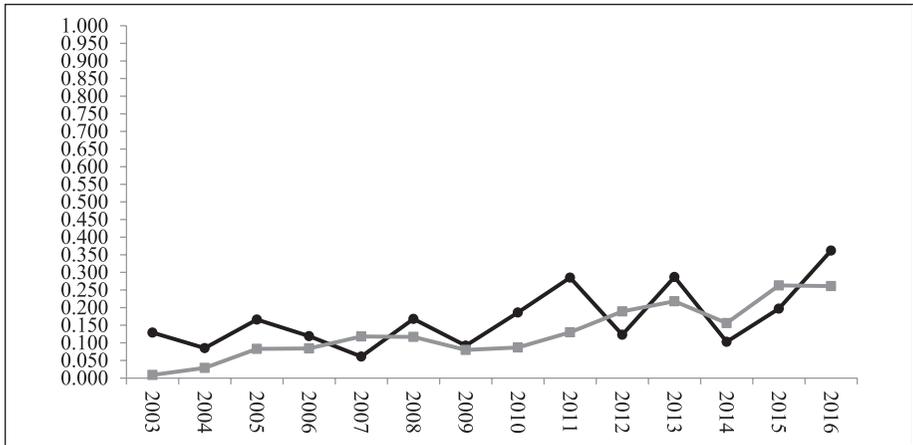
Figure 3. United States ● versus non-United States ■ trend line.

shows a gradual increase in effects over time, but there are some years where the effect sizes are slightly larger than expected based on an assumption of monotonic changes. There are also some points in the trend line where the coefficients diverge for the United States compared with other countries. While the difference is dramatic, some caution is necessary given the small number of studies. The average coefficient in 2003 for the United States is .129 ($SD = .088$, $k = 7$) and outside the United States the average is .009 ($SD = .083$, $k = 5$). Another point of divergence in the trend line is in 2011; the average coefficient for the United States is .285 ($SD = .304$, $k = 2$) and outside the United States the average is .130 ($SD = .079$, $k = 7$).

Discussion

Clearly, there is a positive relationship between digital media use and participation in civic and political life. Early research showed a small, but positive average coefficient and more contemporary research has shown a substantial, positive coefficient. These results provide some reason to be optimistic about the significance of digital media in citizen's participation. Why are contemporary coefficients stronger?

Social networking sites explain some of this increase. A 2009 meta-analysis, based on the United States, estimated the average effect as .07 (Boulianne, 2009). This meta-analysis focused on early types of digital media use, such as online news, emailing, and time spent online. In contrast, a new meta-analysis focused exclusively on social media (based on studies across the globe) estimated the average effect as .125 (Boulianne, 2019). As such, social networking sites explain some of the trend line. However, social networking sites are not the only story, as the trend line did not show a dramatic and consistent change with the introduction of social networking sites. Websites have become more interactive, which may produce larger effects. In addition, the rise of digital media tools (e.g., Change.org) to enable online political

participation helps explain the rise in offline forms of engagement (online petitions lead to boycotting, street protests, etc.).

As for cross-national differences, these findings do not support existing theories in this field of research. Following Gainous et al. (2015), we explored cross-national differences based on Freedom House scores, but did not find differences. The results do not suggest that the United States is distinctive in its digital media effects, addressing Vaccari's (2013) hypothesis. The U.S.-specific trend line replicates the pattern of small coefficients becoming larger over time. The trend line does depict some idiosyncratic and irregular patterns, which were also observed based on data from the American and British election studies (see Bimber & Copeland, 2013; Bimber et al., 2015; Copeland & Bimber, 2015). However, the dramatic increases do not align with the cycle for U.S. presidential elections. By focusing on election periods, we cannot see the role of digital media in everyday political activities. The relatively little research on civil society compared with election campaigns (Boulianne, 2015) means we know little about how these effects have evolved over time for these forms of participation. The metadata offer a broad picture of increasing effect size, but we cannot infer that the relationship between any single political activity or any single digital media use increases across time. Specifically, we cannot address whether the relationship between online political information and voting is increasing in the United States.

The year 2017 will likely mark another period of large effects between digital media use and participation in the United States. Although 2017 is not an election year, this year seems to be a critical year related to the mobilization of citizens, particularly in the form of street protests. Digital media seem critical to the street protests, particularly the Women's March, March for Science, and People's Climate March (Fisher, 2018). This scholarship largely focuses on left-wing movements, leaving many unanswered questions about the use of digital media for right-wing movements. Indeed, research has largely treated all forms of participation as normatively good, when clearly some forms of participation facilitated by digital media may have dire consequences, such as the White supremacy movement in the United States (see Hedrick, Karpf, & Kreiss, 2018).

Looking more globally, the relationship between digital media use and participation seems to gradually increase over time. These gradual effects may be linked to an incremental process of technological innovations by civic groups (Karpf, 2016). These technological innovations are not as bound to national context, which may explain why there are few cross-national differences observed in this meta-analysis study. As mentioned, key organizations and elites in the civil sphere are international players, which may also explain why we see similar effects across political contexts. This is not to say that each individual country does not have periods of peaks in their trend line connecting digital media use and participation; however, at the global level, there is some consistency in the trajectory of the trend line. Although country-specific trend lines would be interesting, such analysis has been limited to elections (Bimber & Copeland, 2013; Bimber et al., 2015; Copeland & Bimber, 2015; Strandberg & Carlson, 2017; Tolbert & McNeal, 2003; Vaccari, 2013).

In sum, the effects of digital media on participation were smaller in the early years and have become much more dramatic. This overall trend is consistent across a variety

of political contexts. Further research should move beyond the comparative election focus in trying to understand transnational effects of digital media on civic and political life. The focus on elections restricts analysis to campaign participation, whereas citizens are engaged in civic and political activities on a daily basis, for example, boycotting and talking politics. Existing international work suggests that cross-national differences are observed when exploring these types of activities (Gainous et al., 2015). Further comparative work should move beyond the democracy scores and similar classifications used in the present study and others (Gainous et al., 2015; Wagner & Gainous, 2013). Instead, further research should look to transitioning systems (moving toward or away from democratic practices) as well as those where the free press scores and Internet restrictions do not align. In particular, what role do digital media play in a system where the traditional press is not free, but the Internet is free from restrictions? These countries, which include Israel, Italy, and Greece, may offer unique insights and perhaps unique effects of digital media on participation in civic and political life. Finally, further research might want to reevaluate the separation of online and offline activities implicit in this body of research, opting to study hybridity in media use (Chadwick, 2013) and mixing modes of participation, blurring boundaries between online and offline activities. While these hybrid approaches are rare, they do offer new lines of inquiry about media effects on participation.

Returning to the introduction's description of *The Circle*, there are limits to what digital and social media can and should do in a democratic system. In particular, the proposed strategy to reduce the effort to vote comes at a cost. The movie, as well as Howard (2015), points to the high potential for surveillance, social control, and political manipulation in digital media. While the Internet may be beneficial for collective organization, as suggested by Shirky (2008), the ease of organization is not limited to prodemocratic, high-consensus groups. As such, scholarship should attend to both the positive and negative consequences of online mobilization.

ORCID iD

Shelley Boulianne [iD] https://orcid.org/0000-0002-8951-1098

Supplemental Material

Supplemental material for this article is available online.

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Author Biography

Shelley Boulianne earned her PhD in sociology from the University of Wisconsin–Madison (2007). She conducts research on media use and public opinion, as well as civic and political engagement, using meta-analysis techniques, experiments, and surveys.