

# The effect of the internet on voting behavior

The internet can reduce political participation and thus affect legislation in labor and other areas

Keywords: internet, voting behavior, mass media, information, social media

## ELEVATOR PITCH

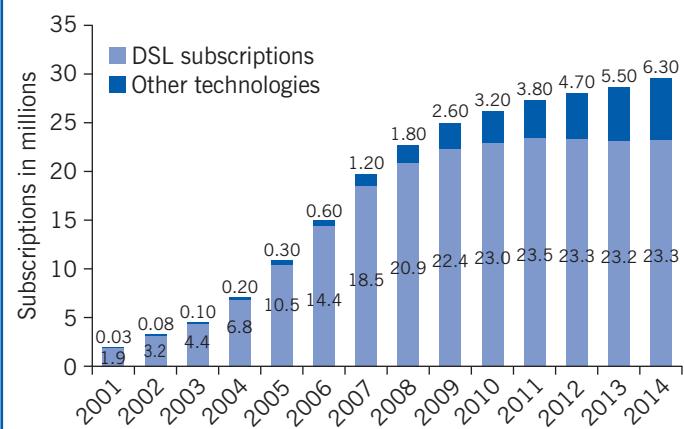
The internet has transformed the way in which voters access and receive political information, such that it has circumvented the filtering of information previously undertaken by editorial offices. Consequently, consumers have had to learn how to filter relevant information themselves. The introduction phase of the internet coincided with a decreasing voter turnout, possibly due to “information overload” or less-focused political information. However, the subsequent rise of social media may help reverse the negative effect on turnout. But this poses challenges for regulatory policy. Understanding the internet’s effects on the consumption of information is also relevant for how voters view labor policies.

## KEY FINDINGS

### Pros

- + The internet can provide direct and cheap access to a large pool of information.
- + More information can lead to users making better-informed decisions.
- + Low entry costs facilitate the dissemination of information, foster competition, and increase the variety of information.
- + More competition in the media market might imply less filtering by editorial offices and less pre-selection of information.
- + The emergence of social media has created new participation and dissemination platforms.

### Development of broadband subscriptions in Germany



Source: Bundesnetzagentur (2010), (2015). Online at:  
[http://www.bundesnetzagentur.de/EN/Home/home\\_node.html](http://www.bundesnetzagentur.de/EN/Home/home_node.html)

### Cons

- Users have to learn how to filter online information efficiently, which takes time.
- If consumers cannot filter the relevant information they may face an information overload and consequently make ill-informed decisions.
- Internet-based technologies, such as search engines, help filter information but may also introduce a new source of bias.
- The crowding-out of traditional media may lower the quality of information online.
- There is competition from alternative uses of time spent online, e.g. on entertainment.

## AUTHOR’S MAIN MESSAGE

The internet is the new mass medium that affects many aspects of everyday life. Empirical evidence during the initial phase of the internet suggests that a “crowding-out” of political information occurred, which affected voter turnout. The introduction of interactive social media and “user-defined” content appears to have reversed this, but there is a downside: voters can now be personally identified and strategically influenced by targeted information. Regulating the internet may be necessary, but it can also stifle innovation. Therefore, policymakers should consider introducing measures to educate voters to become more discriminating in their use of the internet.

## MOTIVATION

How does the emergence of the internet and the possibilities it allows to access vast amounts of information online affect an individual's ability to increase their knowledge on a given topic, for example, voters' understanding of how the labor policies of various political parties differ? Do individuals benefit from inexpensive access to a large pool of unfiltered information, or are they overloaded with information and consequently less informed? Research on how the possibility of consuming political information online has affected political behavior can shed some light on these questions.

Research on voting behavior and the internet suggests a negative effect on voter turnout during the “initial phase” of the internet in Germany and Italy [1], [2]. The “initial phase” refers to the early years of the world wide web before the rise of social media at the end of the 2000s. This phase is characterized by a small minority of web content “generators” and a large majority of web users who were passive “consumers” of content. However, this negative effect on voter turnout appears to have been reversed during the subsequent phase of the internet, which is characterized by the ability of people to create and share content online, through social media, and also blogs, open-source software, and so on. [2]. The rise of social media during this phase was additionally supported by the rise of mobile internet technologies and smart phones. More experienced users have learned to filter online information more efficiently, and are supported in their searching and sorting by new social media applications that help to structure the information access and dissemination process. This has implications for the relevance, quality, and focus of the information that is available to users and, consequently, their voting behavior. For instance, politicians can use online platforms to engage directly with voters and discuss the effects of, for example, labor market reforms. Such large-scale reform projects might gain credence if voters are better informed about the political process and feel involved.

### The challenge of measuring the effects of information access

Before looking at the internet's effect on voting behavior in more detail, it is important to understand how it can be measured. Estimating the effect of information access on political outcomes, including labor policies, is not trivial, since voters may self-select their preferred sources of information. This becomes a problem if individuals with better information access turn out to be systematically different voters. In the case of the internet, one consideration might be that rolling out costly broadband infrastructure is more efficient in densely populated urban areas. At the same time, it is generally the case that urban areas attract individuals with specific characteristics (e.g. young, highly-educated, wealthy) that are known to also affect voting behavior. If the selection of politically interested individuals into areas with better internet access is not taken into account it will likely overestimate the effect of better internet access on voter turnout as a measure of political participation.

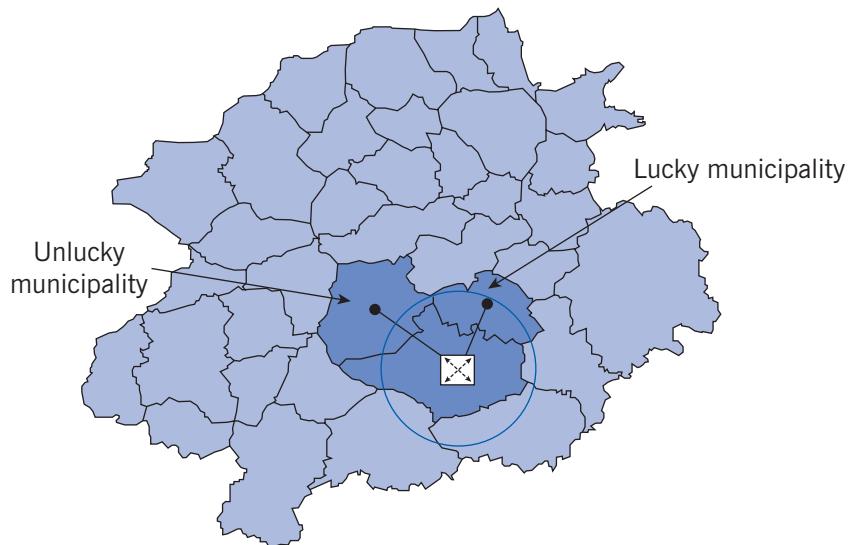
To overcome this problem and estimate a causal effect of internet access on voting behavior, one study uses a regional variation in households' internet access that was caused by technological peculiarities of the pre-existing voice telephony network, and not by rollout decisions of internet providers [1]. The early generation of broadband internet in Germany was based on the nationwide voice telephony network. Households were connected to the voice telephony network via technical facilities known as “main distribution frames”

(MDF). The regional distribution of MDFs in west Germany was determined in the 1960s, when the state-monopolist *Deutsche Bundespost* rolled out the telephony infrastructure with the goal of providing network access to every household. The distance between MDF and households is irrelevant for the quality of telephone services, but it is crucial for the costs of providing “first-generation” broadband internet access via a digital subscriber line (DSL) modem. The transmission speed of DSL technology depends on the conductivity of the copper cable, which decreases with distance. If the distance to the MDF does not exceed 4.2km, broadband internet access could easily be provided using the existing infrastructure. When surpassing the distance threshold, new infrastructure has to be rolled out, which requires a substantial cost increase at the threshold of 4.2km.

The study looked at groups of neighboring municipalities in west Germany that were connected to the same MDF [1]. Some of the municipalities were “lucky” to be below the threshold, while others were “unlucky” to be above it (Figure 1). Figure 2 shows that the municipalities below the 4.2km threshold had a significantly higher probability of being supplied with broadband internet access than those (unlucky) municipalities that needed costly infrastructure investments.

Since the 4.2km threshold had no meaning in the time before DSL technology, the predicted probability of accessing broadband internet was independent of municipality characteristics such as income, age, or education level, which could otherwise have explained differences in voting behavior. By comparing the voting behavior in groups of neighboring municipalities, with and without broadband internet access, the study was able to determine the causal effect of broadband internet access on votes for incumbent,

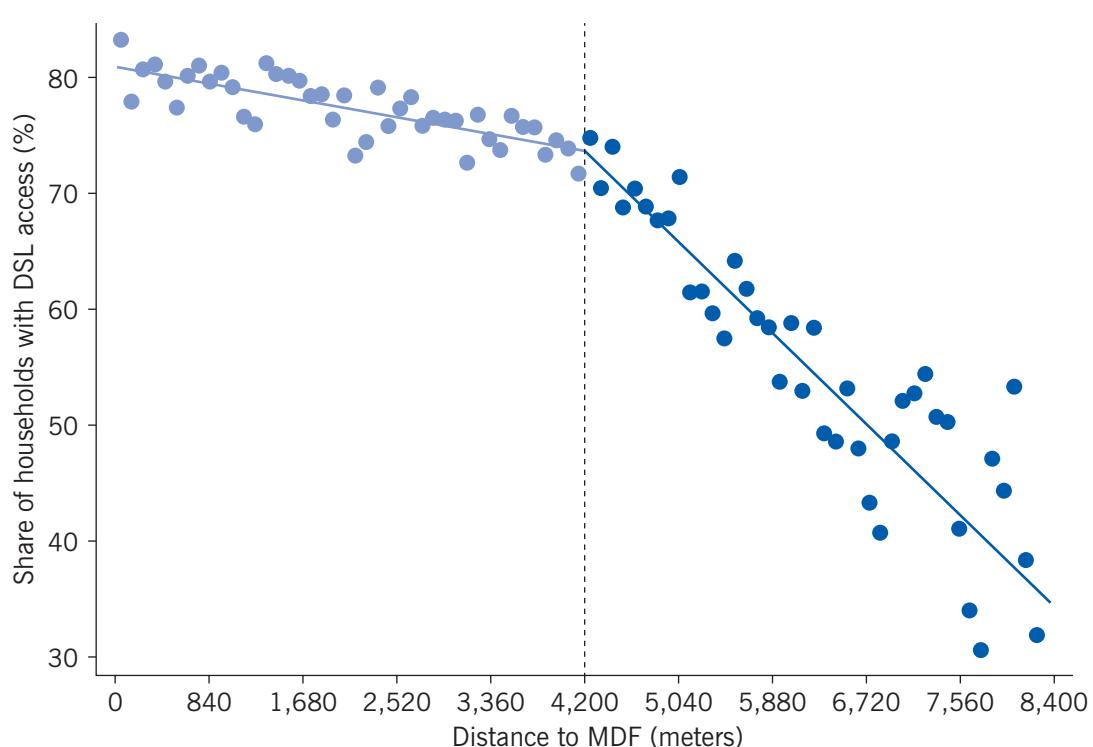
Figure 1. Broadband “threshold” and the effects on voting municipalities



*Notes:* The dark blue areas show three municipalities that are served by one main distribution frame (MDF). The municipality in the middle hosts the MDF. The circle represents the threshold of 4.2km around the MDF, i.e. the technical availability of a digital subscriber line (DSL). Technical DSL availability is higher in the north-eastern municipality (the lucky municipality) than in the north-western municipality (the unlucky municipality).

*Source:* Falck, O., R. Gold, and S. Heblisch. “E-lections: Voting behavior and the internet.” *American Economic Review* 104:7 (2014): 2238–2265 [1].

Figure 2. The effect of the 4.2km threshold on DSL availability in a municipality



**Notes:** The figure plots the share of households with a digital subscriber line (DSL) access per municipality (municipalities are averaged across bins of 100 meters) against the municipality's distance to the main distribution frame (MDF). Distances are centered on a technological threshold of 4.2km. The light blue line to the left of the threshold and the dark blue line to the right of the threshold are fitted lines on the basis of single observations. The figure shows that the share of households with DSL access clearly drops at the technical threshold of 4.2km.

**Source:** Falck, O., R. Gold, and S. Heblisch. "E-lections: Voting behavior and the internet." *American Economic Review* 104:7 (2014): 2238–2265 [1].

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small, and extremist parties, as well as voter turnout. It did not find any differences in the parties' vote shares, but showed that municipalities with broadband internet access faced a decrease in voter turnout during the initial phase of the internet. A different study uses a similar empirical strategy in Italy and finds the same effect, that is, lower voter turnout, for the introduction phase of the internet.

The German study also conducts an individual-level analysis using data from the German Socio-Economic Panel [1]. Applying the same identification strategy to individuals' self-reported voting behavior, it confirms the negative effect of internet availability on turnout, suggesting that individuals who had internet access did not benefit from better information access. At the same time, the study presents evidence that internet availability crowded-out television consumption, and increased overall entertainment consumption. One plausible explanation for this is a crowding-out of political information during the introductory phase of the internet. Voters suddenly faced an overwhelmingly large pool of information and entertainment opportunities and perhaps did not filter relevant knowledge efficiently. The rise of social media, such as Twitter and Facebook, in the later 2000s, along with politicians actively using social media to disseminate information, re-connected voters to the political debate.

## Media effects in the process of information dissemination

The internet is still a relatively new mass medium and it is not yet possible to evaluate its long-term effects. In the absence of such long-term evidence, it is nevertheless helpful to look at the historic rise of the established mass media, such as television, radio, and newspapers, to get a better understanding of the role of mass media in the political process [3].

The mass media are the main sources of information for voters on government policies and the ideological positions of parties and politicians [1]. Theoretical models suggest that more information is generally good for voters because it helps them monitor politicians more efficiently [4]. This simple insight is, *inter alia*, reflected in freedom of information legislations that guarantee access to government information. However, the quality of information provided by different types of media may vary across political issues (e.g. labor, trade, education, housing) and across regions, thus giving rise to all kinds of media biases. One obvious bias could arise from a situation where the broad range of mass media was strategically employed to manipulate public opinion. This can usually be observed in totalitarian regimes. However, even in the absence of strategic manipulation, media can still exert a partisan influence on public opinion, as they may reinforce voters' predispositions through pervasive selection and filtering. The intense media coverage of an issue can make people believe that the issue is important (*agenda setting*); people may evaluate politicians' decisions based on the issues covered in the media (*priming*); and the way an issue is characterized in news reports can have an influence on how it is understood by the audience (*framing*).

These different sources of biases are particularly likely to occur in the context of traditional mass media such as newspapers, radio, and television, where editorial boards determine the topics covered. For example, one study analyzes the impact of the introduction of Fox News in the US on voting behavior between 1996 and 2000 and finds it to have had a significant effect on Republican votes during the presidential elections in 2000 [5]. Similarly, another study analyzes the expansion of the first private Russian television channel (NTV) at the end of 1996, which was supportive of the opposition in the 1999 parliamentary elections in Russia. It finds that the presence of that independent television channel increased the combined vote for major opposition parties at the expense of the governing party [6]. These examples underline the important role of the media in the dissemination of information in relation to voting patterns.

While the focus so far has been on the "intensive margin" (i.e. the changes in the distribution of votes), it is also important to consider evidence for media effects on the "extensive margin" (i.e. the number of people who vote, or "voter turnout"), in an attempt to better understand how information access affects political participation.

### Newspapers

One US study analyzes the effect of increased newspaper coverage on voter turnout. Looking at all US newspapers published in the English language that existed between 1869 and 2004, the study finds that access to newspapers increases voter turnout [7]. This effect appears to be stronger in the period before 1929. After that, competition from the new mass media—radio, and later television—reduced the newspaper effect.

### ***Radio***

Studies on the effect of the introduction of radio on political participation again suggest an effect on voter turnout. A study that analyzed the introduction of the radio in the US between 1920 and 1940, in the context of an unemployment relief program that was implemented during that period, finds that a larger share of households owning a radio increased voter turnout significantly. Interestingly, regions with higher radio reception were found to receive more funds from the unemployment relief program [8]. The authors of the study interpret this finding as support for the idea that voters' access to mass media does not just influence voter turnout but also influences government policies.

### ***Television***

In an attempt to explain the observed decrease of voter participation in US elections during the period between 1940 and 1970, another study investigates the effect of television entering the media market [9]. Using regional variation in the timing of the introduction, the study shows that television consumption had a negative effect on voter participation in congressional races (without simultaneous presidential elections) in the 1940s and 1950s. The study presents a plausible explanation for this finding, namely that television crowded-out media with more extensive coverage on political issues. This is because the rise of television was accompanied by a decrease in the diffusion of newspapers and radio.

In contrast, a different US study found that the introduction of local Spanish-language television in US metropolitan areas during the period 1994–2002 facilitated access to information for Spanish-speaking voters and, eventually, increased voter turnout among Hispanics [10]. This finding does not necessarily contradict the results of the previous study, as it suggests that the introduction of a new mass medium, as a “complement,” has positive effects on political participation because voters receive better information. But if the new medium is a “substitute” that crowds-out existing sources of information, it can have negative effects on political participation.

### ***Internet***

Research on the introduction of earlier mass media, such as newspapers, radio, and television, suggests that the internet could affect voting behavior because of its potential to provide direct and cheap access to the consumption and dissemination of information. On the one hand, better access to information may provide society with more knowledgeable voters who make better-informed voting decisions. On the other hand, not all voters may use the internet to improve their political knowledge. Some may simply seek (and find) online entertainment. To the extent that online consumption replaces the consumption of other media (newspapers, radio, or television) with a higher information content, there may be no information gains for the average voter and, in the worst case, even a crowding-out of information.

An alternative scenario is that individuals do seek information online—but only selectively. This is especially true for those with prior ideological inclinations who primarily source information that matches their preconceptions, thus ideologically “locking themselves in.” While the consumption of traditional media still forces users to encounter diverse

viewpoints and exposes them to new topics and ideas, self-selected news consumption based on prior beliefs bears the risk of segregation. This might lead to ideological polarization. In sum, the introduction and diffusion of the internet may increase or decrease the range of news and political opinions people and/or voters are exposed to, depending upon which effect prevails [1].

In order to gain a better understanding of the potential ideological bias caused by a selective use of the internet, one study analyzes the ideological segregation of individuals' online news consumption [11]. Using US data, the study finds that segregation on the internet is low. However, it is higher than in most traditional media and significantly lower than segregation in personal interactions. Online news consumption is mostly concentrated on a small number of relatively centrist outlets. Ideologically extreme outlets, such as political blogs or activist sites, account for only a minor share of online news consumption. In line with this, a study for Germany finds no evidence that the internet significantly affects the vote shares of extremist parties [1].

A second concern about the rise of the internet relates to findings that new mass media entering the market may crowd-out established media (i.e. the "substitution" effect). This may imply a temporary decrease in information until information providers find new ways to employ the new medium (e.g. by creating an attractive format to present news) and consumers get accustomed to the new media format. For instance, television entering the media market crowded-out newspaper consumption, which had an overall negative effect on political information because at the time of its introduction, newspapers provided more political information than television programs [10]. Similarly, the internet may crowd-out television or newspaper consumption. Both these traditional media have a high probability of so-called "by-product learning": that is, newspapers and broadcasting media present a compilation of diverse issues that expose consumers to opinions and topics they did not intentionally look for. When "Googling" or searching for specific news and information, it would be expected that the probability of such chance encounters would decrease, as the search would be more focused. As a result, consumers might end up being less well-informed when the internet crowds-out a broader media coverage, and less information on political issues may imply a lower voter turnout. Specifically, intensified entertainment consumption may compete with the time spent acquiring information online and offline, or simply distract individuals from voting.

For a better understanding of the negative "internet effect" on voter turnout in non-local elections in western Germany, one study explores whether this pattern can be explained by the internet substituting incumbent media or by providing new entertainment opportunities [1]. The authors employ detailed data on newspaper circulation within municipalities, as well as survey information on television consumption and time spent on online entertainment. The internet does not appear to crowd-out newspaper consumption, but there is evidence that the internet crowds-out television consumption, with television being the most prominent source of non-local political information in Germany. Moreover, the authors present evidence that broadband internet access increased the amount of time individuals spent on online entertainment. These findings relate to the year 2008, when social media that allowed for more user interactions began to rise. It is interesting to note how people's ability to create and share content online affected the observed effects on voter turnout.

## The rise of social media

Another important consideration is the information and mobilization role of interactive applications such as blogs, Twitter, or Facebook. Before the rise of social media, voting for small fringe parties without a chance of winning a significant vote share was one way to make a political statement. In the social media era, blogging and tweeting can be more effective ways of expressing political opinions on specific topics. But does this affect voter turnout?

The main difficulty in identifying effects relates to the rise of mobile internet technologies in the late 2000s. Their rise makes it more difficult to define specific groups of voters, as they vary in the ways in which they access information online (e.g. mobile phones, tablets, home computers). However, despite these challenges, one study provides initial evidence that the negative effect on turnout reverses during this phase of the internet in Italy. The study shows that the political system responded to the demobilizing effects by making use of online platforms to disseminate political information. And, indeed, over the period 2009–2011 the authors observe an increased turnout in national referenda.

Data on the territorial expansion of online platforms for political mobilization further show an association with the formation of local, grassroots protest groups, which rely heavily on social media [2]. One of these groups, the Five-Star Movement (M5S) in Italy, became politically active and ran for elections. From 2008 onwards, better internet access had a positive effect on M5S' presence on local election ballots and, in 2013, they ran for the national parliamentary elections. Interestingly, the negative effect of broadband internet access on voter turnout found in the years before 2008 disappeared.

A *supply-side interpretation* of this reversal is that the internet offers the opportunity to disseminate information at low cost, and firms like Twitter or Facebook have introduced new ways of exchanging (political) information interactively. The emergence of social media applications thus gave structure to the information dissemination process and helped voters to collect information more efficiently. At the same time, politicians began using the internet to organize their support and to campaign online. Barak Obama's successful internet election campaign in 2008 set the path for this development. In the so-called 2008 US "Facebook election," Obama successfully employed Chris Hughes, a Facebook co-founder, to lead his highly effective election campaign. Using a combination of social networks, podcasts, and mobile messages, Obama connected directly with (young) American voters. In doing so, he gained nearly 70% of the votes among Americans under the age of 25.

Alternatively, the *demand-side interpretation* of this reversal could also be considered. Voters needed time to learn how to use the new medium for informational purposes. This adaptation phase might be thought of as a process of trial and error that also presents some inefficiencies. But, after a while, voters became more experienced with the new medium and learned how to filter online information. Overall, it is most likely that the reversal was driven by both supply-side and demand-side effects.

Finally, a word of caution about the positive effects of social media applications. While there is some evidence that social media successfully stimulate interactions between politicians and voters, with positive effects on political participation, social media providers also collect detailed information about users to allow for targeted advertising. What if this "big data" is sold to media companies to disseminate information that matches individuals' prior beliefs? What if politicians use this information in election campaigns

to target voters that are easy to mobilize? There seems to be a thin line between desirable benefits of more efficient information dissemination and undesirable possibilities of voter manipulation.

## LIMITATIONS AND GAPS

The internet is still a relatively new medium and research on its effects is at an early stage. This contribution has summarized findings on how the introduction of the internet affects voting behavior. It has employed previous experience with other mass media to frame expectations and, as a result, provides a reference point, but also raises the question of comparability. For example, established media have begun using the internet as a complementary channel to disseminate their content online, via online newspapers, online radio, or live-streaming of television broadcasts. In this respect, the rise of the internet may be different from historic experiences with respect to the rise of radio or television. Most consumers nowadays use various media online and offline as sources of information, and this development has been intensified by social media applications. More research is needed to understand how the internet's interactions with other media affect the media market in general, and how voters consume and process information in particular.

A second limitation relates to the lack of studies that look at the effect of social media applications on voting behavior and more generally at the dissemination of political information. One reason for this lack of research relates to the difficulties finding exogenous variation in access to information after the rise of mobile internet technologies for estimating causal effects.

A final limitation relates to the lack of reliable evidence on the effect of the internet on journalism, particularly on the quality of information provided by journalists. Newspapers are facing drastic reductions in their income from advertising, which raises the question of how they save costs. Do cost savings affect the quality of articles and news stories? And does increased competition for the speed of information dissemination contradict the idea of thorough journalistic investigation? So far, there is no answer. Future research is needed to address this limitation.

## SUMMARY AND POLICY ADVICE

Evidence from the introduction phase of the internet suggests that there were no effects on party votes but a negative effect on turnout. It seems that the internet crowded-out politically relevant information during this early phase. However, this changed with the rise of social media. Applications such as Facebook, Twitter, and YouTube, as well as user-generated content websites or blogs, provide new ways of disseminating political information.

These new dissemination channels have multiple benefits. Politicians can use them to mobilize voters, but they can also use online platforms to interact with voters and gain credence for large-scale projects such as labor market reforms. Beyond that, traditional media firms use new web applications to disseminate information, and the supply of information is further complemented by the possibility to follow expert blogs or tweets, for example those written by well-known academics who comment critically on labor market policies.

The bottom line of the available evidence is that concerns that the internet crowds-out other media at the expense of information quality are justified, but likely exaggerated. Altogether, this holds some policy implications. Like other innovations, the internet gives rise to new business models that bear risks as well as opportunities. On the positive side, the internet holds the potential to satisfy an increasingly diversified demand for information, as long as there is media competition online.

One potential risk though relates to the increasing possibilities to collect personal information known as “big data.” This development could result in situations in which individual rights are violated, since the personal information could be used, for example, to selectively disseminate information in election campaigns and influence voters strategically. Currently, there are regulatory initiatives to address this concern. However, too much regulation can prevent innovative activities, thus making it undesirable. Moreover, internet companies are highly dynamic, which creates a constant need for new or updated regulations. An alternative to regulation might therefore involve measures to educate voters in the use of the new medium as a way to foster self-reliance. Teaching children at school how to use the internet responsibly and how to access the large amount of information efficiently is one way to foster self-reliance. Self-reliant internet users will demand unbiased information, and online media will react to this.

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### Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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