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# **ONLINE NEWS AND PROTEST PARTICIPATION IN A POLITICAL CONTEXT: EVIDENCE FROM SELF-REPORTED CROSS- SECTIONAL DATA**

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## **ONLINE NEWS AND PROTEST PARTICIPATION IN A POLITICAL CONTEXT: EVIDENCE FROM SELF-REPORTED CROSS-SECTIONAL DATA<sup>3</sup>**

The availability of alternative information via online news sources is often said to induce social discontent, especially in states, where traditional media are under state control. But does this relation really exist, and is it universal? In contrast to previous studies, where generalized Internet use is treated as a proxy for online news consumption and general political participation is a proxy for protest participation, we render a test of relationship specifically between online news and protest participation. We explore survey data from WVS for 48 nations in 2010-2014. The analysis provides evidence that the likelihood of individual protest participation is positively associated with online news consumption. The study also shows that the magnitude of the effect varies depending upon the political context: surprisingly, despite supposedly unlimited control offline as well as online media, autocratic countries demonstrated higher effects of online news than transitional regimes, where the Internet media are relatively uninhibited.

Keywords: Internet, new media, online news, protest, political regime  
Classification: Z

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## Introduction

The Internet has been described as one of the principal factors influencing political participation since it reduced the costs for both access to alternative information (Howard, 2011; Garrett, 2006) and coordination (Earl and Kimport, 2013; Castells, 2012). In authoritarian societies alternative information may be obtained solely from online sources. Availability of such information is thought to contribute to the rise of political awareness of societal problems and grievances (Reuter and Szakonyi, 2015) as well as contributing to social discontent (Howard, 2011; Kalathil and Boas, 2003; Hollyer, Rosendorff and Vreeland, 2015), two processes that ultimately affect government evaluation and policy support (Tang and Huhe 2014). Political knowledge in turn has been said to give rise to political participation, notably to its protest forms (Meyrowitz and Tucker, 2013) that are believed to be able to influence political unrest or even overthrow entire regimes (Hollyer et al., 2015). However, the scale and the universality of this connection have not yet been fully assessed. Thus, some researchers have questioned the democratizing role of the Internet in general (Morozov, 2011; McKinnon, 2012), the “alternative” character of social media as an aggregated category (Reuter and Szakonyi, 2015), the link between non-differentiated political knowledge and protests (Little 2015) and between alternative news and protests (Kaufhold et al., 2010). Evidence both for and against relationship between online news, alternative political knowledge, and contentious political participation/protest has so far been fragmentary, with some scholars conceding the necessity of better data and analysis (Farrell, 2012; Boulianne, 2009). This paper examines the first and the last components of this triad by providing empirical evidence of a positive and robust relationship between online news consumption and protest activity across a variety of nations. To show that online news consumption contributes to an increase of protest participation, this article deploys a multi-level model on self-reported data across 48 countries between 2010 and 2014. We also report marginal effects of online news consumption on protest participation and the level of uncertainty of the estimation that are not often presented in studies on political communication.

This paper also seeks to explain the variance in the strength of the online news effect between the countries using the existing research outlined further below. Specifically, we hypothesize that access to alternative information via the Internet might be an especially important factor of protest participation in situations where online news are the only source of that information while

traditional media are loyal to the government. Thus, the link between online news exposure and protest behavior might be expected to be the strongest in countries where all media, except the Internet, are controlled by the government, because of the largest level of discrepancy between traditional and new media. This is most likely to occur in transitional democracies, or anocracies, that combine autocratic features with democratic ones. Compared to that this link might be expected to be weaker in democracies where such discrepancies are presumably not that large, and even weaker in complete autocracies where all media are fully controlled and no criticism is available. This study tests this hypothesis by embedding macro-level factors that indicate economic, political, and social development of countries.

The rest of the paper is structured as follows. The next section provides a brief overview of existing research highlighting that scholars rarely distinguish between online news consumption and the use of other ICTs in general, an oversight which in turn might affect the precision results in earlier analysis of the issue. Next, we present our argument explaining why testing the relationship between protest and online news consumption specifically is important. We derive three testable predictions on both individual and macro-level, specifying regime type and economic development across 48 nations. In the last sections we formulate our hypotheses and present the results for each of them, focusing on quantity of interest (expected values and first difference) that allow us to estimate the marginal effects as well as the level of uncertainty of our estimation. We conclude with a discussion and interpretation of our results, and outline directions for further research.

## **Revising the relationship between online media and social unrest**

When looking at effects of the Internet, scholars often imply either the influence of Internet use in general (Howard, 2011; Breuer et al., 2014) or of social media use as a whole (Wolfsfeld et al., 2013; Tufekci and Wilson, 2012). As a result, the effects of *online news consumption* specifically have not been widely studied, at least not in the cross-country perspective. Likewise, protests are often included into the concept of political participation and studied jointly (Brundidge et al., 2014), but no large-scale research has been made on the relation of online news consumption to protest participation specifically.

Meanwhile, not every political action is contentious nor is every protest political (it can equally be perceived by participants as social or economic). That is why research focused on generalized political participation cannot contribute to a complete understanding of the subversive power of the Internet across a broad range of societal issues. Simultaneously, one can expect that the effect of online news consumption on protests might differ from that of other forms of internet use such as social networking, gaming or shopping.

However, as mentioned above, the specific relationship between *online news* and *protest participation* has not been a focus of the existing research, although relationships between other similar phenomena have got attention from researchers. There are many studies of social media effects on political participation (Koltsova & Selivanova 2015; Theocharis and Lowe, 2016) and even on protests (Tufekci and Wilson, 2012; Enikolopov et al., 2016), while online news are rather ignored. Other studies address the relation of news media and political knowledge (Coffé, 2017; Reuter and Szakonyi, 2015; Kaufhold et al., 2015; Kenski and Stroud, 2006) or political participation (Ladd and Lenz, 2009; Vissers et al., 2012; Brundidge et al., 2014; Wojcieszak et al., 2016), but not protests. At the same time, formal models that seek to explain the mechanism of a protest's onset and regime survival (Meirowitz and Tucker, 2013; Kricheli et al., 2016; Little, 2015) account for information signals, but do not include online news. Likewise, empirical research that focuses on explanation and prediction of protest participation with a multitude of factors does not specifically address online news (Dalton et al 2009; Welzel and Deutsch, 2012; Schlussman and Soule, 2005; Bernhagen and March, 2007).

This seems to be a serious gap. In a meta-analysis of studies devoted to Internet and political engagement, Boulianne (2009) finds that the effects of Internet happen to be larger when Internet use is measured as online news consumption. However, of 38 reviewed papers only eight address online news, while protests are only very marginally mentioned in one of those eight. A vast majority of studies in Boulianne's review and beyond find the studied relationships to be positive, with a few exceptions (Wolfsfeld et al., 2013; Theocharis and Lowe., 2016). However, Boulianne's review also suggests that many of these studies lack methodological rigor. Echoing Farrell (2012), Boulianne calls for more nuanced research of the relationships between specific types of Internet use and specific civic and political activities. Likewise, Wolfsfeld et al. (2013)

acknowledge the lack of comparative research and argue that the impact of the Internet on protest may vary depending upon political context in general, and political regime, in particular.

To the best of our knowledge, the only paper that addresses both online news and protests is the research of the youth protests in Chile by Valenzuela et al. (2012); they find that protest participation is positively related to online news consumption, among other factors. This work belongs to the vast majority of papers devoted to a single country or even a single protest. Available cross-country comparisons of protest behavior either do not include Internet (Dalton et al., 2009; Welzel and Deutsch, 2012), are devoted to a very narrow set of countries (Wolfsfeld et al., 2013), or both (Bernhagen and Marsh, 2007).

In the meantime, as also mentioned in the introduction, some studies claim that the independent information that online media are able to provide can increase citizens' awareness of current societal problems. Kalathil and Boas (2003: 136), and Howard (2011: 108-112) suggest that online access to previously hidden political, social or economic news can raise general discontent among the public. Internet in general is often perceived as an alternative information source, although the picture might, in fact, be more complex. For instance, Reuter and Szakonyi (2015) find that in Russia, the usage of international social networks such as Twitter and Facebook increased the awareness about electoral fraud, while usage of domestic VKontakte and Odnoklassniki did not. The degree to which the Internet constitutes an alternative to other forms of media may also vary depending on political regime. Petrova (2008) finds that paradoxically the number of internet users per capita is negatively correlated with press freedom over a sample of about 90 countries. However, in democracies the relation is reversed, while in autocracies it is also positive, but insignificant. This leaves us to suppose that an exceptionally strong negative relation is found in transitional regimes, in which citizens have an opportunity to turn to the Internet while regular media are tightly controlled. Lorentzen (2014) argues that some regimes (although they refer to autocracies) have to tighten control over traditional media when they cannot effectively control all alternative sources, such as the Internet. The authors claim that regimes can be very effective in regulating the safe level of media freedom, however, we might suppose that transitional regimes might also face a situation when tightening control over the regular media coupled with inability to control the Internet would lead to the maximal discrepancy between their content. This in turn might lead to higher levels of protest activity, and

thus news consumption would be most closely related to protest participation in transitional regimes compared to both democracies and autocracies. In the latter, all sources of information would be effectively controlled, in democracies, both old media and the internet would be equally inclined to report critical information.

## **Theory and hypotheses**

In this article we suggest that exposure to online news contributes to the likelihood of protest participation of an individual, since, compared to traditional news sources, this medium is more likely to provide alternative and perhaps even subversive information about society. We build on the mentioned above Howard (2011), and Kalathil and Boas (2003) studies that provide some evidence of the subversive role of the Internet in social and political uprisings. Specifically, they claimed that online access to political, social or economic news in countries, such as Egypt and China, where previously it was concealed, could raise general discontent and create strong incentives for social unrest. In addition, Hollyer, Rosendor and Vreeland (2015) found out that the availability of economic information in non-democratic societies could destabilize both transitional and consolidated autocratic regimes. Recognition of this potential threat may explain the attempts of authorities in Turkey, Russia, Venezuela and other fragile democracies to assert control over the local online news market. Based on the above, we derive the main hypothesis of this paper is that protest participation to some extent is associated with higher online news consumption:

*Hypothesis 1a: The more citizens exposed to online news the higher the probability of their participation in protests.*

This effect might be biased due to the problem of self-selection (Prior, 2007: 94-101; 2013; Knobloch-Westerwick and Johnson, 2014): Citizens interested in politics might choose higher involvement into information flows. Thus protest participation could be in fact caused by interest in politics, but not by news consumption. However, if the latter has its own influence, not politically interested news consumers would be still more inclined to protest than non-consumers, and, furthermore, those who are both politically interested and consume online news would be most of all inclined to protest. Thus, interest in politics and online news consumption would interact. To test this proposition, we derive the following sub-hypothesis:

*Hypothesis 1b: Individuals interested in politics and online news will be more likely participate in protests than individuals who are interested in politics but not exposed to online news.*

Finally, drawing upon the theoretical underpinnings of the first hypothesis, we expect that the political regime might affect an individual's online news consumption, thus determining the magnitude of its effect on protest participation. Specifically, in consolidated democracies individuals might receive news online from the same media companies that had dominated the market before the emergence of the Internet, and additionally both offline and online media enjoy a visible and comparable degree of press freedom. The implication is that the effect of online news consumption on protests will correlate with traditional media and will not be particularly strong. On the other hand, in fragile democracies, the governments usually effectively control offline media since pre-internet times, while they fail to enforce their control over the Internet as effectively (Bodrunova and Litvinenko, 2013; Howard, 2011). Hence, in those societies the discrepancy between the offline and online news will be maximal, which is why we expect to observe the strongest association between protest participation and online news consumption. By contrast, consolidated autocracies control all media markets including online outlets (Lorenzen, 2014; Coffé, 2017). Therefore, individuals are less likely to obtain any alternative information and the analysis might show no or little evidence that protest activity is associated with online news consumption. Accordingly, we derive the following hypothesis:

*Hypothesis 2: Compared to consolidated democracies and even more to autocracies, the magnitude of the effect of online news on protest participation is greater in transitional regimes where all media, except the Internet, are expected to be controlled.*

## **Data and measurements**

To test our hypotheses, we draw on the international database, the World Values Survey (WVS)<sup>4</sup>, sixth wave. Because of our theoretical setup, we used WVS data for 2010-2014, the time when the Internet was available in all countries included in our sample. That is, the choice of time was

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<sup>4</sup> WVS has been exploring people's values and beliefs across over the past decades. The database provides survey data from 1981 to 2014, which constitutes six waves. Each wave covers from 10 to 100 countries (over 1,000 cases for each) and includes from 100 to 400 variables.



a function of the Internet penetration in the countries. The unit of analysis is individuals (around 68,000 observations), hence, individual-level, and countries – aggregated-level (for a table with countries see Appendix).

### **Dependent variable: Protest participation**

We define *Protest Participation* of individuals as their answers to the question of WVS, on whether they have recently participated in peaceful political demonstrations: 1 — if an individual reported recent attendance of a demonstration, and 0 — otherwise<sup>5</sup>. We extracted this variable from the crosstable of two related variables: a question on protest participation at any time, and a question on recent participation among any-time participants. Thus, the independent variable opposes both non-participants and long-ago participants (0) to recent participants (1). As can be seen from the question wording, we do not distinguish between political protest and social or economic protests. We assume that any protest may change political regimes or decisions of national/local governments, therefore we define it as a political action (Lipsky, 1968). We use the WVS question related to peaceful demonstrations only since the question about illegal uprisings might have not received reliable answers due to potential legal repercussions. In addition, the frequency of protest participation might differ across nations, therefore we also apply random effects (i.e. “multilevel” model) to account for this heterogeneity across individuals and countries. Figure 1 shows the share of protesters in every country where the question was asked. As expected, the number of citizens participated in protests will not be large since in some states both due to the rarity of protests themselves, and as a result of the potentially costly repercussions of participation in these activities.

### **Independent variable: Online news**

Based on our testable implications derived above, we include a variable Online News, in our analysis. WVS has a direct question regarding online news consumption, asking respondents to report whether they use the Internet to obtain the news about their country or the world: 1 — yes, and 0 — otherwise<sup>6</sup>. Figure 2 shows the share of online news consumers in every country, where the question was asked. The variable can potentially account for reading online news on such

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<sup>5</sup> All questions from WVS and recoded variables that we used in this paper are described in Appendix.

<sup>6</sup> WVS also provides a question for e-mail as a news source that we do use in our analysis. Interestingly, users do not watch online news on the Internet, according to Digital News Report published by the Reuters Institute on Digitalnewsreport.org.

news websites as The New York Times, The Guardian, Google News, as well as on social media: Indirect evidence from the US demonstrates that according to public surveys of Pew Research Center in 2012, more than 49 percent of American adults read the news via social media such as Facebook, Twitter etc. This does not contradict our theoretical setup since the news on social media are mainly disseminated by professional online news organizations.

As mentioned above, the significance of the effect of online news on protest participation might be the effect of political interest of individuals: those interested in politics might be more likely to read news (Prior, 2013). If otherwise, interest in politics and news consumption should interact. To deal with this and, by extension to test Hypothesis 1a, we combine the variable *Online News* with the variable *Interest in Politics* (see Appendix for details). Thereby, the combined variable *Online News*  $\times$  *Interest in Politics* includes the following categories: 0 — not interested in politics and do not read online news, 1 — interested in politics and do not read online news, 2 — not interested in politics and read online news, 3 — interested in politics and read online news.

### **Control variables**

*Individual-level variables:* We relied on theory and previous research to select control variables (e. g. Кольцова & Киркиж 2016; Welzel and Deutsch, 2012). Only those that were significant in a large set of preliminary regression models were left for the final regression analysis: *Membership* as an index of active/inactive membership in political parties, charity organizations, environmental organizations, professional associations with the scale from 0 — not a member to 2 — active member; *Friends* as a source of the news, where 1 — receive the news about country or the world from friends, 0 — otherwise; *Employment* status (1 — employed, 0 — otherwise); *Education* (from 1 — no formal education to 9 — education level with a degree), *Gender* (1 — male, 2 — female). For robustness checks, we also created a model that included the media other than the Internet: *Newspapers* (1 — read the news, 0 — otherwise), *Radio* (1 — listen to the news, 0 — otherwise), *TV* (1 — watch the news, 0 — otherwise). We include these variables since in some less developed countries in our sample traditional media may exert stronger influence on public opinion than online media. The use of friends as news sources is also conceptually important: in some countries, they may be the only sources of alternative news at all.

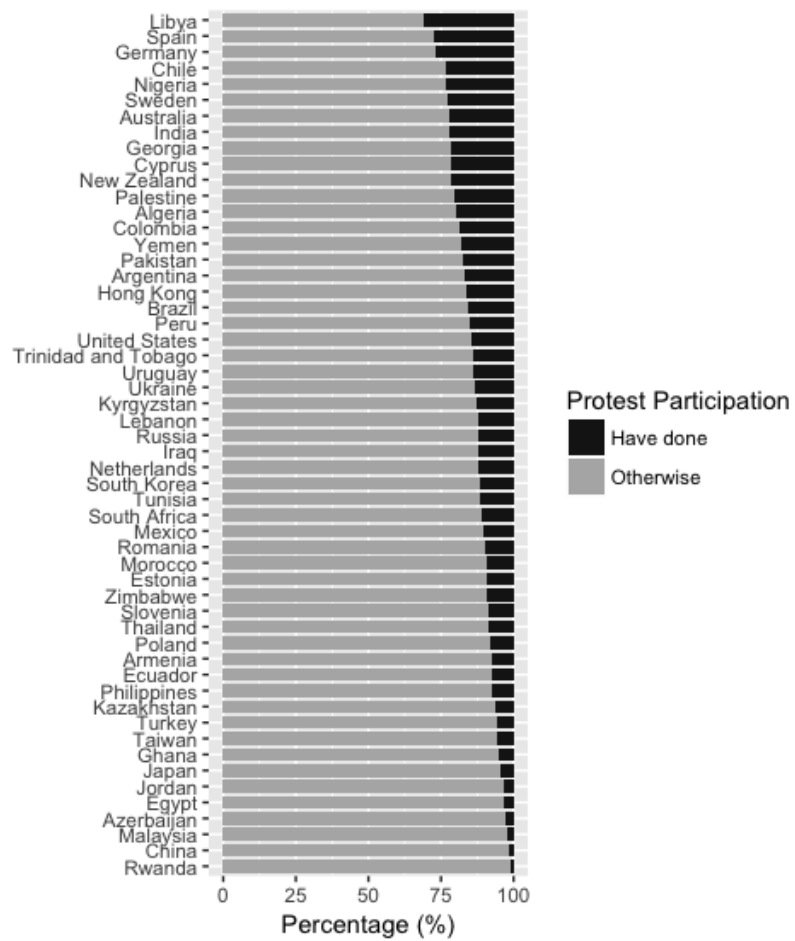


Figure 1. Share of protesters across countries (mean=15.40%), WVS 2013.

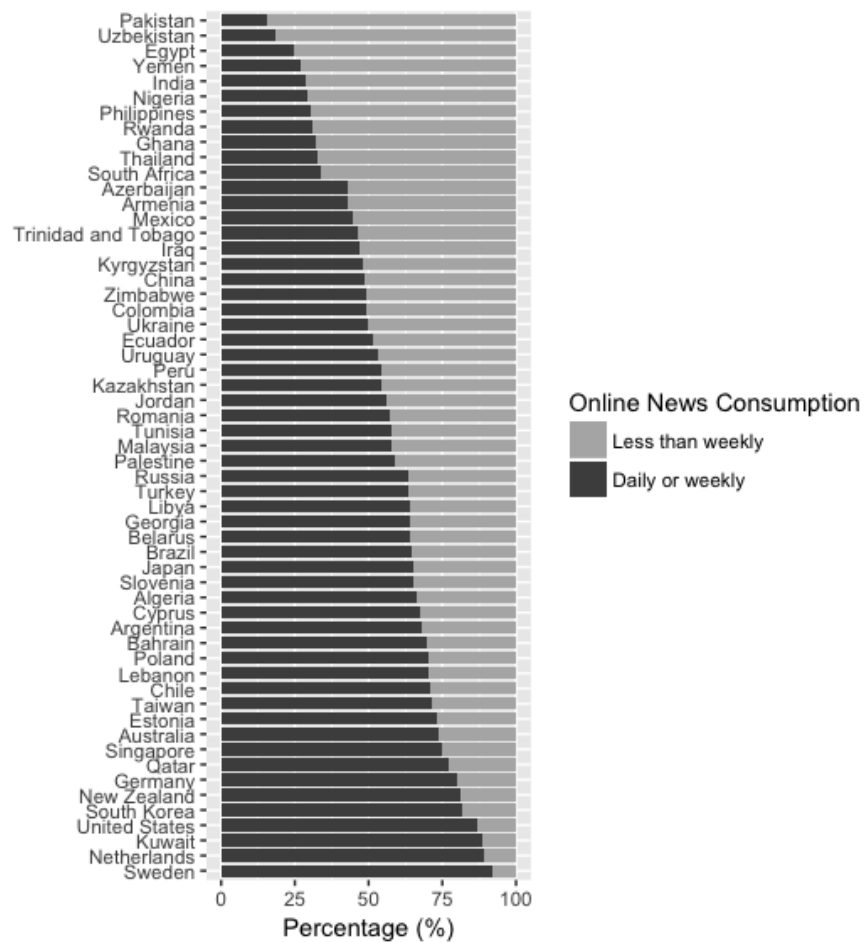


Figure 2. Share of online news consumers across countries (mean=59.22%), WVS 2013.

*Aggregated-level variables:* For the country-level analysis that Hypothesis 2 implies, we included two substantial variables that according to the existing research, have strong explanatory power (Bueno De Mesquita and Root, 2000: 197-204; Doucouliagos and Ulubasoglu, 2008; Treier and Jackman, 2008): *GDP* per capita from the World Bank data, and political regime based on the scale of the Polity IV project (Marshall et al 2016). With the latter variable, we follow Polity IV three-item classification of regimes offered on top of its 20-point scale: this is done to make the possible effect sounder. As a result, we form a three-category variable *Regime*, where 1 — democracy (+6 to +10), 2 — anocracy (-5 to +5) or transitional regime, and 3 — autocracy (-10 to -6). Based on Polity IV classification, countries in transitional state perform traits of both democratic and autocratic regimes in relation to a number of core regime components, such as executive recruitment or executive autonomy / constraints. Of special importance for us is the Polity IV *Political Competition and Opposition* component that involves suppression of oppositional media in transitional regimes, and absence of the former in consolidated autocracies. As internet is technically harder to control than traditional media, we expect the effect of online news on protests to be stronger in transitional regimes where we assume to find relatively free online outlets but censored traditional offline media (Hypothesis 2). For testing the hypothesis, we divided the sample into three groups of countries by *Regime* and applied pooled regression models with all of the aforementioned individual-level variables to each of the three groups since the number of observations is sufficient for such a division. We thus obtained three separate models for individuals from democracies, transitional regimes, and autocracies respectively.

## Results

### The effect of online news

The probability that an individual  $i$  in a country  $j$  answers that he or she participated in a protest is represented as a function of individual-level and country-level characteristics. In the first hypothesis, we suggest that probability of protest participation is associated with online news consumption on average across all countries. Since the dependent variable has Bernoulli distribution, we apply the formula for a logit model:

$$\pi_{ij} = [1 + \exp(-\chi_{ij}\beta)]^{-1}, \quad (1)$$

, where

$$\chi_{ij}\beta = \alpha_j + \beta_1 News + \beta_{1i} Controls \quad (2)$$

for individual  $i = 1, \dots, n$  in country  $j = 1, \dots, J$ . Equation 2 shows that *Online News* and *Controls* are individual-level covariates, and  $\alpha_j$  represents a country-level random effect that allows *Online News* to vary across countries. For robustness, we include a covariate *Regime* to see if there is heterogeneity across political regimes. Thereby, we set  $\alpha_j$  in the following way:

$$\alpha_j = \gamma_1 Regime, \sigma_\alpha^2. \quad (3)$$

In the interpretation of coefficients, our primary quantity of interest is the first difference (FD), which represents how the probability of protest participation changes as an explanatory variable moves from one substantively meaningful value to another (King, Tomz and Wittenberg, 2000).

According to Hypothesis 1a, *Protest Participation* is expected to be positively associated with *Online News*. Thus the effect of *Online News* should be positive and one-or-two standard errors greater than zero. Table 1 model 1 shows the results. Figure 3 illustrates the marginal effect of *Online News* for all countries: given an average shift from a category “Do not read online news” to “Read online news” the probability of protest participation increases by 1.8 percentage points (95% CI 0.01-0.02), almost doubling the effect. The effect remains positive and significant when we control for political *Regime* (model 2), *GDP* per capita (model 3), and variation of the effect across countries, namely random effect *Online News* as we predicted (model 4)<sup>7</sup>. To compare the effect of online news with news from other types of media, we include variables *Newspapers*, *Radio*, and *TV* into one of the models. Model 9 presents the results: *Online News* has a larger effect than *Newspapers* while the coefficients of *Radio* and *TV* are not significant<sup>8</sup>.

### The effect of interest in politics

Hypothesis 1b states that the positive relationship between protest participation and an individual’s interest in politics will be confined by online news consumption. In other words, we

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<sup>7</sup> Note that we did not report results for a model with included Age as the variable did not perform significant coefficient.

<sup>8</sup> We exclude GDP per capita from further analysis for other hypotheses as its coefficient was not significant.

expect to observe a stronger positive relationship between protest participation and interest in politics of a respondent given that he or she reads online news. The hypothesis can be written as:

$$\chi_{ij}\beta = \alpha_j + \beta_{1i}Politics + (\gamma_{1i} + \gamma_{2i}Politics)News + \beta_{2i}Controls, (4)$$

where  $\alpha_j$  is also a group predictor for every country. Equation (4) also includes the interaction term that we model through a combination of variables *Online News* and *Interest in Politics*. Due to the nature of these two variables, the resulting variable is not linear, but nominal. The equation (4) defines that the effect of *Interest in Politics* on *Protest Participation* is conditioned on *Online News*. Figure 4 shows that the interest both in politics and in online news demonstrates the largest effect. In particular, this effect is more pronounced than that of interest in politics when not combined with exposure to online news: on average, the probability of protest participation increases by 3 percentage points (95% CI 0.021-0.039) when shifting from the latter to the former. Interestingly, the effect of belonging to the category “interested in politics but do not read online news” is larger than the effect of belonging to those who are “not interested in politics but read online news”. A move from one to the other results in the decrease of protest probability by 1 percentage point (95% CI 0.007-0.013). Finally, moving from the category “no politics and no online news” to “not interested in politics but read online news” leads to a 2 percentage point increase in the probability of protest participation (95% CI 0.012-0.023). Overall, the variable *Interest in Politics*×*Online News* demonstrates that news consumption is quite strongly associated with the interest in politics. However, the results show that individuals, who read online news but are not interested in politics, are more likely to participate in protest than those, who are both not exposed to online news and politics. Hence, the effect of online news is significant for all consumers, and not restricted to those who are already predisposed to political participation (model 5).

### **Effect of political regime**

As we pointed out earlier, media consumption differs across political regimes because of local law, policies, political and civil liberties. Hence, the impact of online news on protest participation might change depending on a country and its political climate. Based on this theoretical consideration, we test the second hypothesis that has a form of a model with the individual level only:

$$\chi_{i, Democracy} \beta = \beta_{1i} News + \beta_{1i} Controls \quad (5)$$

$$\chi_{i, Transitional} \beta = \beta_{1i} News + \beta_{1i} Controls \quad (6)$$

$$\chi_{i, Autocracy} \beta = \beta_{1i} News + \beta_{1i} Controls \quad (7)$$

We exclude country-level predictors since the subsamples we use include too few countries: 30 democracies (Polity IV score +6 to +10), 12 transitional regimes (-5 to +5) and 5 autocracies (-10 to -6). Models 6-8 in Table 1 illustrate the results (table with countries and full version of tables with regression results see in Appendix). The effect of online news consumption on protest participation is still positive and significant although its values vary across political regimes. In particular, *Online News* performed the largest magnitude of the effect in autocracies rather than in transitional regimes contrary to what had been expected.

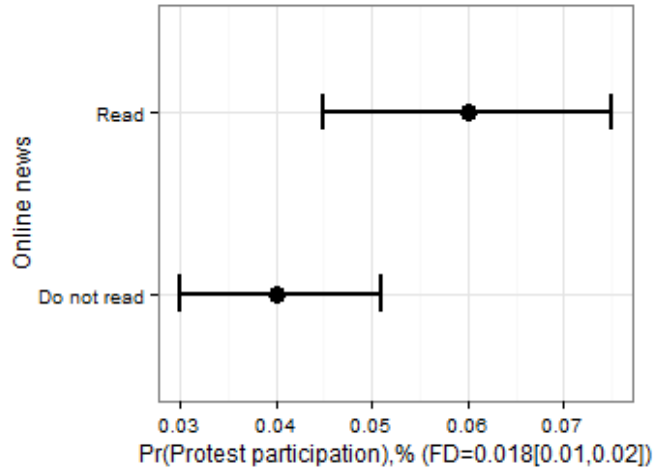


Figure 3. Marginal Effects for Online News for All Countries



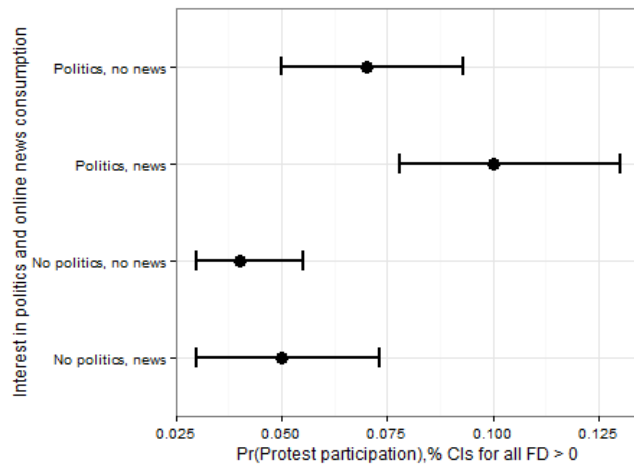


Figure 4. Marginal effects for online news combined with interest in politics for all countries

## Conclusion

In this paper we have demonstrated that distinguishing online news consumption from the general Internet use and plugging it into a political context provides new empirical evidence on the debated role of the Internet in protest behavior. The exposure to online news is positively associated with participation in demonstrations across all countries on an individual level, and especially in autocracies, on an aggregated level of analysis. We therefore demonstrate the universal character of Internet influence on protests with the focus specifically on online news exposure, in contrast to most other studies which focused on social media or on generalized Internet use in separate countries. Our result is stable when a large number of country-level and individual-level control variables are added. Online news exposure turns out to be more important than reading newspapers that have been traditionally associated with critically thinking audiences, which marks the shift of such audiences from print to online media. The effect of online news consumption is weaker than that of interest in politics, however, none of them is fully caused by the other, and when combined together they reinforce each other and push individuals towards protest participation with a greater power than when they occur separately.

Additionally, we find that the effect of online news consumption is strongest in autocracies and weakest in transitional regimes, a finding which goes against one of our hypotheses. This result demands further research: first, it is necessary to test the significance of the difference between these effects, and second, a theoretical interpretation is needed. Different country groupings may yield somewhat different results in the future, however, in any case the assumption of transitional regimes being the most vulnerable to online news influence does not hold. Another direction for future research is conducting cross-country surveys specifically aimed at capturing protest participation, with protesters being oversampled to overcome the rare-event effect. Such surveys will be more suited for testing various relevant hypotheses, in particular those about explanations of country variance.

Further, although we find that the effect of online news is significant and has the same direction in all countries, its overall magnitude is modest. This is consistent with the observation of Boulianne (2009) made in her meta-analysis of similar papers, but it nevertheless gives rise to further doubts and reflections. First, this counter-intuitive result may indicate the need for a more nuanced research of different types of news obtained through the Internet. As different social media platforms have different effects on political knowledge

(Reuter and Szakonyi, 2015), different types of political information, too, may affect protest behavior differently. As Little (2015) claims in his formal model, if obtained information reveals low level of protest support, whether true or false, it may in fact discourage protest participation. Likewise, Brundidge et al. (2014) find that only pro-attitudinal news encourages political engagement, while counter attitudinal news does not, meaning that encouragement happens only if the political positions of the news item author and the reader coincide. The importance of the knowledge about the number of the like-minded people and the level of protest support has been, in fact, underlined in many theoretical and empirical, albeit non-news-centered works (Castells, 2012; Earl and Kimport, 2013). Thus, the situation calls for differentiated approach to news content when predicting protests.

Second, as online news consumption does not take place in vacuum, it may affect protest participation in a more complex way than directly galvanizing readers into action, while non-readers stay at home. Koltsova & Selivanova 2015 find that more active and more numerous online communities of the same social movement are associated with much higher offline turn out to contentious actions in respective neighborhoods, but, paradoxically, offline protesters are not necessarily those who are most involved in online communities. Two other findings complement this study to lead us to further interpretations. First, as we find in this research, getting news from friends affects protest participation with nearly the same magnitude as online news reading. Second, Schlussman and Soule (2005) found that the best predictor of protest participation is in fact being asked to participate. From this, we can assume that online news can transfer into protest participation in two-step manner outlined by Lazarsfeld and his colleagues (Lazarsfeld and Katz, 1955) back in mid-20<sup>th</sup> century: from online news readers to their non-reading friends via face-to-face contact or via other forms of interpersonal communication (e.g. mobile phones). This effect may have obscured the true significance of online news consumption for protests in our research, as well as significance of other forms of online behavior addressed in other studies. As this effect might be expected to be stronger in small and tightly connected neighborhoods, such as rural communities, our last suggestion for further research would be to attempt examining relationship between news flows and protest participation separately in rural and urban areas.

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Table 1. Regression results for Hypotheses 1-2 with different set of controls, and other robustness checks

	Dependent variable:								
	Protest participation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Online news	0.408 <sup>***</sup> (0.033)	0.398 <sup>***</sup> (0.034)	0.402 <sup>***</sup> (0.034)	0.411 <sup>***</sup> (0.070)	0.322 <sup>***</sup> (0.050)	0.344 <sup>***</sup> (0.042)	0.299 <sup>***</sup> (0.069)	0.554 <sup>***</sup> (0.102)	0.386 <sup>***</sup> (0.034)
		Controlling for political regime	Controlling for GDP per capita	Controlling for political regime	Controlling for self-selection	Only Democracies	Only Transitional regimes	Only Autocracies	Controlling for newspapers, TV, and radio
N	67,841	65,981	65,981	65,981	65,981	41,451	15,488	7,861	65,981
Country effect	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Random effect	No	No	No	Online news	No	-	-	-	No
Country	48	48	48	48	48	-	-	-	48
Log Likelihood	-18,478.00	-17,797.96	-17,693.47	-17,749.88	-17,795.82	-11,714.06	-4,031.15	-1,589.17	-17,688.40

*Note:* Models in this table are presented in reduced form. For extended versions of models see Appendix. Covariates in models (1-4, 6-7): interest in politics, communications with friends, membership in social organizations, employment status, gender, education. Covariates in model (5) are the same as in model (2), and three categories of individuals: who “read online news and interested in politics”, “interested in politics but do not read online news”, “not interested in politics and do not read online news”, and “not interested in politics but read online news” is a predictor of interest whose coefficient we report. Apart from controls mentioned above, every model includes variables that we specify under each coefficient according our theoretical framework. Level of significance: \*p<0.01 \*\*p<0.05 \*\*\*p<0.01.

## Appendix

**Table A1. Regression results for Hypothesis 1a**

<i>Dependent variable:</i>				
Protest participation				
	(1)	(2)	(3)	(4)
Online news	0.408*** (0.033)	0.398*** (0.034)	0.402*** (0.034)	0.411*** (0.070)
Politics	0.661*** (0.030)	0.648*** (0.031)	0.644*** (0.031)	0.650*** (0.031)
Friends	0.327*** (0.040)	0.339*** (0.041)	0.333*** (0.041)	0.351*** (0.042)
Membership	0.998*** (0.034)	1.008*** (0.034)	1.011*** (0.035)	1.015*** (0.035)
Gender	-0.307*** (0.028)	-0.300*** (0.029)	-0.302*** (0.029)	-0.295*** (0.029)
Employment	-0.137*** (0.049)	-0.129*** (0.050)	-0.130*** (0.050)	-0.107** (0.050)
Education	0.094*** (0.007)	0.095*** (0.007)	0.094*** (0.007)	0.089*** (0.007)
Hybrid regime		0.233 (0.294)		0.259 (0.293)
Autocracy		-0.771* (0.422)		-0.765* (0.421)
log(GDP)			0.007 (0.109)	
Constant	-3.595*** (0.150)	-3.626*** (0.176)	-3.613*** (0.267)	-3.647*** (0.176)
Observations	71,355	69,495	68,314	69,495
Fixed effect	Country	Country	Country	Country
Random effect	No	No	No	Online News
Country	48	48	48	48
Log Likelihood	-18,478.000	-17,797.960	-17,693.470	-17,749.880

*Note:*

\*p<0.01 \*\*p<0.05 \*\*\*p<0.01

**Table A2. Regression results for Hypothesis 1b**

<i>Dependent variable:</i>		
Protest participation		
	Coef.	S.E.
Politics, no News	0.583***	(0.044)
no Politics, News	0.322***	(0.050)
Politics, News	1.028***	(0.046)
Friends	0.341***	(0.041)
Membership	1.008***	(0.034)
Gender	-0.299***	(0.029)
Employment	-0.129***	(0.050)
Education	0.095***	(0.007)
Hybrid regime	0.234	(0.295)
Autocracy	-0.771*	(0.423)
Constant	-3.590***	(0.177)
Observations	69,495	
Country	48	
Log Likelihood	-17,795.820	
<i>Note:</i>	* ** *** p p p<0.01	

**Table A3: Question wording and variables**

Variable	WVS question	Original WVS coding	Recoded variable
Protest participation	<p>I'm going to read out some forms of political action that people can take, and I'd like you to tell me, for each one, whether you have done any of these things, whether you might do it or would never under any circumstances do it:</p> <p>"Attending peaceful demonstrations"</p> <p>Tell me for each of these activities how often you have done it in the last year (Only to those who said they "have done" the given protest activity):</p> <p>"Attending peaceful demonstrations"</p>	<p>1=Have done 2=Might do 3=Would never do</p> <p>1=Not at all 2=Once 3=Twice 4=Three times</p>	<p>1 (1-2,1-3,1-4) =Have done 0 (1-1,2,3) =Otherwise</p>
Online news	<p>People learn what is going on in this country and the world from various sources. For each of the following sources, please indicate whether you use it to obtain information daily, weekly, monthly, less than monthly or never:</p> <p>"Internet"</p>	<p>1=Daily 2=Weekly 3=Monthly 4=Less than monthly 5=Never</p>	<p>1=Read online news 0=Otherwise</p>
Interest in politics	How interested would you say you are in politics?	<p>1= Very interested 2=Somewhat interested 3= Not very interested 4= Not at all interested</p>	<p>1=Interested 0=Otherwise</p>
Online news and interest in politics	Crosstable of two previous variables.	<p>1=Read online news 0=Otherwise 1=Interested 0=Otherwise</p>	<p>0=No news, no politics 1=Politics, no news. 2=No politics, new 3=Politics, news</p>
Friends	<p>People learn what is going on in this country and the world from various sources. For each of the following sources, please indicate whether you use it to obtain information daily, weekly, monthly, less than monthly or never:</p> <p>"Talk with friends or colleagues"</p>	<p>1=Daily 2=Weekly 3=Monthly 4=Less than monthly 5=Never</p>	<p>1=Read online news 0=Otherwise</p>
Membership	<p>Now I am going to read off a list of voluntary organizations. For each organization, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?</p> <p>"Political party", "Environmental organization" "Professional association", "Humanitarian or charitable organization"</p>	<p>3=Active member 2=Inactive member 1=Not a member</p>	<p>1=Member 0=Otherwise</p>
Gender	Respondent's gender by observation	<p>1=Male 2=Female</p>	<p>1=Male 2=Female</p>
Employment status	Are you employed now or not? If yes, about how many hours a week? If more than one job: only for the main job.	<p>1=Full time 2=Part time 3=Self employed 4=Retired 5=Housewife 6=Students 8=Other 7=Unemployed</p>	<p>1=Employed 0=Otherwise</p>

**Table A4. Regression results for democracies**

<i>Dependent variable:</i>				
Protest participation				
	(1)	S.E.	(2)	S.E.
Online news	0.344***	(0.042)		
Politics	0.655***	(0.038)		
Politics, no News			0.627***	(0.057)
No Politics, News			0.314***	(0.061)
Politics, News			0.989***	(0.058)
Friends	0.307***	(0.049)	0.308***	(0.049)
Membership	0.983***	(0.042)	0.983***	(0.042)
Gender	-0.156***	(0.035)	-0.156***	(0.035)
Employment	-0.126**	(0.062)	-0.126**	(0.062)
Education	0.122***	(0.009)	0.122***	(0.009)
Constant	-3.958***	(0.151)	-3.944***	(0.152)
Observations	41,451		41,451	
Log Likelihood	-11,714.060		-11,713.840	
<i>Note:</i>		* p<0.01	** p<0.05	*** p<0.01

**Table A5. Regression results for transitional regimes**

	<i>Dependent variable:</i>			
	Protest participation			
	(1)	S.E.	(2)	S.E.
Online news	0.299***	(0.069)		
Politics	0.735***	(0.063)		
Politics, no News			0.636***	(0.081)
no Politics, News			0.143	(0.107)
Politics, News			1.023***	(0.092)
Friends	0.378***	(0.089)	0.381***	(0.089)
Membership	1.061***	(0.077)	1.063***	(0.077)
Gender	-0.541***	(0.063)	-0.541***	(0.063)
Employment	-0.146	(0.097)	-0.143	(0.097)
Education	0.077***	(0.014)	0.077***	(0.014)
Constant	-2.850***	(0.202)	-2.792***	(0.204)
Observations	15,488		15,488	
Log Likelihood	-4,031.152		-4,029.283	
<i>Note:</i>	*p<0.01    **p<0.05    ***p<0.01			

**Table A6. Regression results for autocracies**

<i>Dependent variable:</i>				
Protest participation				
	(1)	S.E.	(2)	S.E.
Online News	0.554***	(0.102)		
Politics	0.331***	(0.097)		
Politics, no News			0.062	(0.139)
no Politics, News			0.226	(0.159)
Politics, News			0.804***	(0.141)
Friends	0.443***	(0.163)	0.454***	(0.163)
Membership	0.752***	(0.119)	0.747***	(0.120)
Gender	-0.788***	(0.096)	-0.789***	(0.097)
Employment	-0.071	(0.185)	-0.057	(0.185)
Education	0.046**	(0.021)	0.048**	(0.021)
Constant	-3.583***	(0.350)	-3.473***	(0.352)
Observations	7,861		7,861	
Log Likelihood	-1,589.167		-1,585.581	
<i>Note:</i>		* p<0.01	** p<0.05	*** p<0.01

**Table A7. Regression results with traditional media controls**

<i>Dependent variable:</i>		
Protest participation		
	Coef.	S.E.
Online news	0.386***	(0.034)
Newspapers	0.104***	(0.033)
Radio	0.057*	(0.033)
TV	0.006	(0.052)
Politics	0.637***	(0.031)
Friends	0.325***	(0.042)
Membership	0.998***	(0.035)
Employment	-0.134***	(0.050)
Education	0.092***	(0.007)
Gender	-0.293***	(0.029)
Regime	0.261	(0.296)
Regime	-0.749*	(0.424)
Constant	-3.696***	(0.181)
Observations	69,180	
Country	48	
Log Likelihood	-17,688.400	
<i>Note:</i>	* p<0.01	** p<0.05 *** p<0.01



**Table A8. Country-level data**

<b>Country</b>	<b>Year</b>	<b>(N)</b>	<b>Polity IV</b>	<b>GDP per capita</b>
Algeria	2014	1,2000	2	5.4
Argentina	2013	1,030	8	14.4
Armenia	2011	1,100	5.5	3.4
Australia	2012	1,477	10	67.6
Azerbaijan	2011-2012	1,002	-6.5	7.3
Brazil	2014	1,486	8	11.3
Chile	2011	1,000	10	14.5
China	2012	2,300	-7	6.2
Colombia	2012	1,512	7	7.8
Cyprus	2011	1,000	10	31.8
Egypt	2012	1,523	-3	3
Estonia	2011	1,533	9.5	17.4
Georgia	2014	1,202	6	3.6
Germany	2013	2,046	10	46.4
Ghana	2011	1,552	8	1.5
India	2012	4,078	9	1.5
Iraq	2013	1,200	3	6.8
Japan	2010	2,443	10	42.9
Jordan	2014	1,200	3	5.4
Kazakhstan	2011	1,502	-6	11.3
Kyrgyzstan	2011	1,500	7	1.1
Lebanon	2013	1,200	6	9.9
Libya	2013	2,131	-7	9.8
Malaysia	2011	1,300	6	10.4
Mexico	2012	2,000	8	9.7
Morocco	2011	1,200	-4	3
Netherlands	2012	1,902	10	49.4
New Zealand	2011	841	10	37.8
Nigeria	2011	1,759	4	2.5
Peru	2012	1,210	9	6.3
Philippines	2012	1,200	8	2.6
Poland	2012	966	10	13.1
Romania	2012	1,503	9	8.5
Russia	2011	2,500	4	13.3
Rwanda	2012	1,527	-3	0.6
Singapore	2012	1,972	-2	54.5
Slovenia	2011	1,069	10	24.9
South Africa	2013	3,531	9	6.8
South Korea	2010	1,200	8	22.1
Sweden	2011	1,206	10	59.5
Thailand	2013	1,200	7	6.2
Tunisia	2013	1,205	-4	4.3
Turkey	2011	1,605	7	10.5
Ukraine	2011	1,500	6	3.5
United States	2011	2,232	10	49.7
Uruguay	2011	1,000	10	14.1
Yemen	2013	1,000	3	1.4
Zimbabwe	2011	1,499	4	0.7

**Table A9. Descriptive statistics**

Variable	N	Mean	St. Dev.	Min	Max
Member	61,127	0.19	0.37	0.00	2.00
Protest participation	61,127			0	1
Online news	61,127			0	1
Interest in politics	61,127			0	1
Friends	61,127			0	1
Employment status	61,127			0	1
TV	61,127			0	1
Radio	61,127			0	1
Newspapers	61,127			0	1
Age	61,127	38.42	13.28	18	65
Sex	61,127	1.52	0.50	1	2
Education	61,127	5.75	2.38	1	9
GDP	61,127	12.95	15.80	0.60	67.60
Polity IV	61,127	5.46	5.20	-7.00	10.00

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