
Original Article

Do information-rich contexts reduce knowledge inequalities? The contextual determinants of political knowledge in Europe

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Abstract This article makes a contribution to the study of the determinants of political knowledge from a comparative perspective. Along with the usual suspects explaining knowledge at the individual level (that is, individual differences in motivation, ability and exposure to political news in the media), this article analyses the extent to which socio-economic, political and communicational contexts affect what people know about politics. More importantly, the article analyses whether information-rich contexts contribute towards reducing inequalities in knowledge. The results are obtained via two-level hierarchical linear models using the 2009 European Election Studies, Voter Study and confirm that citizens' levels of political knowledge are driven by the context. They also demonstrate that information-rich environments crucially narrow knowledge inequalities between high- and low-status citizens. These findings thus suggest that socio-economic policies have the capacity to alter the balance between the information-rich and the information-poor.

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Introduction

Research on public opinion and voting behaviour from Converse (1964, 1970) onwards often indicates that the overall level of information, knowledge and understanding of politics among the average citizen is relatively poor. This political resource is also unevenly distributed, and the unequal distribution of knowledge is as troubling as the low average levels of political literacy. Moreover, citizens with fewer resources (such as income or education) appear to be both less informed about politics and less politically active. For this

sector of the public, it is particularly important not to reinforce broader inequalities in political life (Delli Carpini and Keeter, 1996).

These concerns about the political ignorance of the public, and their consequent incompetence in democratically meaningful contexts such as voting or other possibilities of participation in political life, have induced a general pessimism in the academic literature. Moreover, the conventional wisdom is that political ignorance and the unequal distribution of political knowledge among the public is mainly a product of its capabilities and motivation. Inequalities in abilities and motivation are often viewed in the literature as essentially social constants, with very little likelihood of change in the long term. In contrast, some academics argue that what citizens know about politics is a function not only of their capabilities and motivation but also of their contextual opportunities of becoming informed about politics (Gordon and Segura, 1997; Berggren, 2001; Grönlund and Milner, 2006; Iyengar *et al.*, 2010).

In line with this literature, this article makes a contribution to the study of the determinants of political knowledge from a comparative perspective. Along with the usual suspects explaining knowledge at the individual level (that is, individual differences in motivation, ability and exposure to political news in the media), this article analyses the extent to which socio-economic, political and communicational contexts affect what people know about politics. More importantly, the article analyses whether information-rich contexts contribute towards reducing inequalities in knowledge. The results show that citizens' levels of political knowledge are driven by the context, and they therefore confirm previous findings. They also demonstrate that information-rich environments crucially narrow knowledge inequalities between high- and low-status citizens. These findings thus suggest that socio-economic policies have the capacity to alter the balance between the information-rich and the information-poor.

Individual and Contextual Determinants of Knowledge: How the Context Can Reduce Inequalities in Knowledge

Previous research has demonstrated that some people tend to be more politically informed than others. This variance is unevenly distributed, with the greatest degree of political knowledge being concentrated among the economically and socially advantaged. This is referred to in the communication literature as 'the knowledge gap' between different socio-economic status groups (Kwak, 1999). While a significant majority of previous studies have explained this finding on the grounds of the educational differences among citizens, others claim that knowledge inequalities can be due to differences in personal motivation (Kwak, 1999). In sum, much of the empirical variation



in the propensity to know about politics is explained in the literature by individual differences in motivation and ability (Luskin, 1990; Bennett, 1995; Delli Carpini and Keeter, 1996, Althaus, 2003).

Whereas there is an uncontested agreement about the influence of these two factors on political knowledge in the existing literature, the debate is more open about the potential effects of the mass media on what citizens know about politics. In principle, a higher level of political knowledge is expected among citizens who declare themselves to be intensively exposed to media news. Nevertheless, the informative effects of the media depend very much on the contents of the news programming and whether the media offers a preponderance of soft- or hard-news programming (Curran *et al.*, 2009; Iyengar *et al.*, 2010). Moreover, the amount, prominence and quality of the political information offered by the various media can produce different effects on the public's level of knowledge. Previous studies have shown the informative effects of newspaper reading and the negligible effects of exposure to television (Delli Carpini and Keeter, 1996; Newton, 1999; Eveland, 2001, 2004; Craig *et al.*, 2005). However, recent comparative research on the topic has found that public broadcasting news has significant informative effects (Holtz-Bacha and Norris, 2001; de Vreese and Boomgaarden, 2006; Curran *et al.*, 2009; Iyengar *et al.*, 2010). For reasons of space, I limit the role of exposure to media news in the research design of this study to one of control, as the focus of this article is to analyse the contextual factors explaining citizens' political knowledge, and the extent to which these contextual factors contribute towards narrowing knowledge inequalities between citizens.

The previous literature has pointed to the importance of certain contextual frameworks in influencing the motivation and abilities of citizens to obtain and process political information. More specifically, the literature has previously suggested the existence of three different dimensions that can influence political knowledge at the contextual level: first, institutional factors (Gordon and Segura, 1997); second, the degree of equality in the distribution of the socio-economic resources (Milner, 2002; Grönlund and Milner, 2006); and third, the media system where the information is made available to citizens (Iyengar *et al.*, 2010; Norris, 2010).

With regard to institutional factors, two main characteristics are put forward: the electoral and the party system. According to Gordon and Segura (1997), the decision to acquire political information can be seen as a cost-benefit calculation for citizens. Downs (1957) argued that politics is far too complicated and remote from daily experience and that the cost of acquiring political information is not worth the ensuing benefit. This logic appears, however, to be mediated by institutions. Furthermore, certain institutional contexts can contribute to increasing the amount of political information available to everyone, thereby changing the calculus in favour of the acquisition of

political information. Some institutional contexts provide an incentive for the relevant political actors to produce and disseminate political information to citizens. As a result, a greater number of citizens decide to pay the cost of searching and obtaining political information. For instance, citizens living in a multiparty system will feel more motivated to obtain political information than they do in a two-party system. This is because in multiparty systems the degree of available political information is greater, given that in the process of pursuing political power the leaders have additional incentives to produce free information so as to differentiate themselves from the other potential leaders (Gordon and Segura, 1997; Berggren, 2001). However, this effect may decline as the number of parties increases, when this number climbs significantly the distinction between all of them becomes particularly difficult to draw. Knowledge requires not only available information but also the time to assimilate, understand and retain such information and to store it in the long-term memory. It is also possible that the surplus information available in the context of a multiparty country (and with a huge number of different parties) prevents citizens from selecting the information they really want to obtain, given the lack of available time to do so.

Another important contextual feature is the degree of proportionality of the electoral system, or, in other words, the extent to which the electoral system creates significant seat/vote disparities. The usefulness of becoming informed about politics decreases as the disproportionality of the electoral system grows, thereby reducing the incentives of citizens to collect information (Gordon and Segura, 1997). This is mainly a question of motivation: when the information to cast a meaningful vote is not useful to translate the vote into a seat then the individual will have no incentives to be fully involved in the electoral process. Previous studies on electoral turnout have shown that this is the case (see, for instance, Jackman and Miller, 1995). Therefore, citizens living in countries where their electoral preferences are reflected in the composition of parliaments might have greater incentives to obtain and process information about politics than citizens living in polities where their electoral preferences do not correspond to the composition of their parliament.

These two examples of institutions influencing the incentives of citizens to obtain political information at the aggregated level gain special relevance in the context of the elections and, more specifically, in the political campaign. In this respect, the empirical evidence analysed here can be considered as especially suited to contrast with this hypothesis, as the data consist of post-electoral surveys that were carried out immediately after the European elections took place in all the countries considered.¹

A second set of contextual factors relates to the socio-economic resources available in a given society. Milner (2002) pointed to the fact that societies characterised by high levels of civic literacy are those with a firm set of social



policies aimed at the redistribution of economic and cultural resources. Why is such the case? My argument here is that the greater the effort of political actors to redistribute economic and cultural resources, the higher the number of opportunities for citizens to acquire information and experience as citizens using social services, asking for their social rights, paying taxes and so on. And in turn, the higher the level of political knowledge.

The third contextual dimension affecting political knowledge is related to the media system where the information is provided to citizens. The importance of the news media in a democratic society is beyond discussion. The media constitutes the main intermediary between actual events and public opinion, and is the primary way by which people obtain political information (Graber, 2009). Moreover, the information provided by the media can be fundamental for citizens' understanding and analysis of political issues. Therefore, the media potentially contributes to increasing the amount of political information available to all citizens. Again, a greater amount of available information can potentially change the calculus to favour the acquisition of political information. Therefore, when the media is trustworthy, and it distributes credible and comprehensible information, the context will favour the acquisition of information to the citizenry.

In sum, the incentive to collect, process and retain political information appears to be a factor of the socio-economic, political and communicational contexts in which citizens develop their daily lives. According to the existing literature, all the contextual factors identified at this point can potentially influence levels of knowledge by producing varying levels of free information on which citizens can draw. The general expectation, therefore, is that citizens living in information-rich contexts will have greater incentives to obtain political information than citizens living in information-poor environments.

Nevertheless, the main argument of this article is that the context can also influence knowledge in a mediated way. Whereas many people appear to be ignorant about politics, others appear to be relatively well informed. As previously mentioned, this unequal distribution of political knowledge is explained on the grounds of socio-economic and/or motivation differences among citizens. Do contextual factors affect the existing socio-economic and/or motivation inequalities in knowledge? This article claims that information-rich contexts not only accentuate the abilities and willingness of their inhabitants to pay the cost of becoming informed about politics (that is, they have a direct effect on knowledge, as the previous literature has shown). Information-rich contexts might also reduce the influence of socio-economic status and motivation differences in political knowledge (that is, they might well have a conditioning effect on the influence of education and/or political interest on knowledge). This implies that information-rich contexts might contribute to a reduction of the inequalities in knowledge.

There is an important link between abilities, motives and opportunities (Gordon and Segura, 1997; Berggren, 2001). For instance, as opportunities to accumulate and process information become scarce (that is to say, in information-poor contexts), the motivation and abilities required to do so increase, which means that the magnitude of the effect of abilities and motivation on political knowledge might be high. By contrast, when the opportunities to process information are abundant (that is to say, in information-rich contexts), the motivation and abilities required to do so might decrease, which in turn implies that the size of the effect of abilities and motivation on knowledge might be low.

We have seen that the socio-economic resources of a given citizen affect her or his abilities and motivation to become informed about politics. As socio-economic resources are unevenly distributed throughout society, information-rich environments might affect to a greater extent the decision of those citizens with fewer socio-economic resources to become informed about politics, while individuals with greater economic resources are likely to have sufficient abilities to obtain and process political information independently of their informational context. In contrast, the influence of an informational-rich environment can be decisive in the decision to pay the cost of becoming informed about politics for citizens with low socio-economic status. Previous research on this topic has found that the importance of abilities (Berggren, 2001) and motivation (Iyengar *et al.*, 2010) in explaining political knowledge varies across contexts, being less important in information-rich environments, but especially relevant in information-poor contexts.

To summarise, the present article aims to contribute to understanding the extent to which information-rich environments reinforce or weaken the relationship between both socio-economic status and political knowledge, and between political interest and political knowledge. This is a question that at this point remains largely unanswered by the previous literature. Exceptions are Berggren (2001) and Iyengar *et al.* (2010). However, both these articles limit their analysis to a single contextual factor. Berggren (2001) focuses on institutions, whereas Iyengar *et al.* (2010) concentrates on the type of media system (that is, the contrast between market-based and public-service-oriented systems). This study, in contrast, simultaneously considers three contextual factors: institutions, socio-economic policies and the media system where the information is made available to citizens. It also analyses the extent to which these three factors can affect the existing socio-economic and motivation inequalities in knowledge by reducing them in information-rich contexts.

Two main expectations are, then, tested in this paper. The first states that citizens living in information-rich contexts will present higher levels of political knowledge. The second states that information-rich contexts might contribute to a reduction of both the education and motivation inequalities in knowledge.



Data and Operationalization

One reason explaining the lack of attention given to context in explaining political knowledge (with the exceptions of Gordon and Segura, 1997; Berggren, 2001; Grönlund and Milner, 2006 and Lesson, 2008) might have to do with the scarcity of comparative data that contains enough information to be able to construct valid indexes of political knowledge comparable across countries. To date, only the Comparative Study of Electoral Systems data contain three questions about democratic institutions, leading politicians and the national parties. Regrettably, there is a lack of standardisation in the political information questions used in the national surveys. This makes the cross-country comparison of the level of long-term political knowledge problematic (Grönlund and Milner, 2006).

In contrast, the 2009 European Election Studies, Voter Study (EES)² provides a unique opportunity to study the determinants of political knowledge from a comparative perspective for two reasons. First, there are up to seven questions about the functioning of EU institutions and national political actors included in the survey, and the questions vary in their level of difficulty. This allows the construction of reliable and valid indexes of political knowledge. Second, the content of these factual political questions are standardised across countries, allowing for a cross-country comparison, not only of the determinants of political knowledge but also of the differences in the levels of political knowledge between them. Moreover, the items included in the questionnaire were specifically designed to ensure that the same question implies the same level of difficulty for interviewers to respond to across countries.³

The EES Voter Study includes up to seven questions (using a true/false format) that relate to various aspects of citizens' knowledge on the EU (for example, countries that are part of the EU, rules of the 'democratic game' in the EU and so on) and on national politics (for example, the name of a minister and the rules of the 'democratic game' of each respective country) that are equally difficult/easy to answer across countries. The Appendix (Table A2) contains the exact wording of the seven questions considered here. With this evidence, I have constructed an index of political knowledge by following the convention, that is, an additive measure of correct answers to factual knowledge questions, where 1 refers to a correct answer and 0 to an incorrect or DK response. The index of political knowledge varies from 0 correct answers to 7 correct answers.⁴

Figure 1 shows the mean value of the index across countries. There is an important degree of empirical variation in what citizens appear to know about politics across polities. Moreover, the mean value of political knowledge ranges from almost five correct answers in Denmark and Luxemburg to less

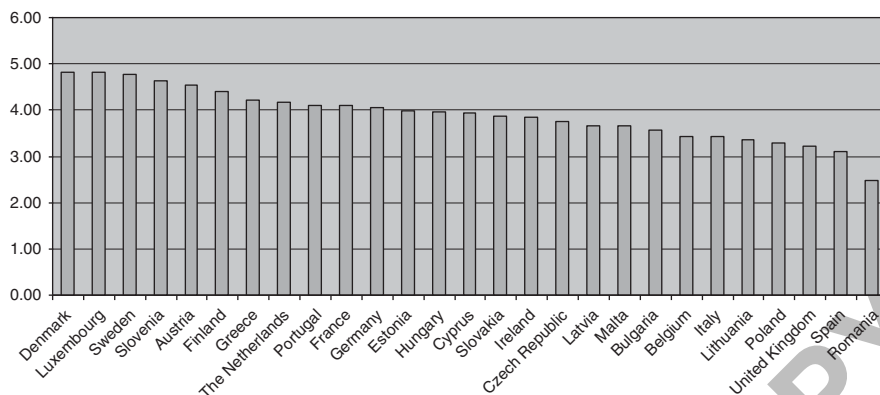


Figure 1: Cross-country variation in political knowledge.

Source: My elaboration on EES Voter Study (Advanced Release, July 2010). Countries are ordered from the highest to the lowest mean value of the Political Knowledge Index.

than three questions correctly answered in the case of Romania. However, there is no clear pattern of variation at the aggregated level. Moreover, the group of polities presenting the highest level of political knowledge appears to be very heterogeneous (in this group, there are Scandinavian countries such as Denmark, Sweden and Finland; some centre-European countries such as Luxemburg, Austria and the Netherlands; and finally two Eastern European countries, Slovenia and Estonia). And the same is true for the group of polities presenting the lowest levels of knowledge (that includes Southern European countries such as Italy and Spain, East European countries such as Poland and Romania and the United Kingdom).

To test the two hypotheses, I consider one indicator for each of the contextual dimensions previously discussed (that is, political institutions, socio-economic context and media system). Regarding the institutional and political environment, I use a variable measuring the number of effective parties. I have calculated this by following the standard formula of Laakso and Taagepera (1979), with the most recent information about the number of parties in each democratic system to the date of the data collection of the survey (June 2009), provided in www.parties-and-elections.de.⁵ With respect to the socio-economic context, I use government expenditure on Social Protection as a percentage of GDP in 2007 as given by the contextual data set of the ESS Voter Study. Other indicators can also operationalise this dimension of the size of the state, and all of them turned out to be statistically significant in the earlier tests I performed.⁶

Finally, regarding the media system, and following Norris's (2010), I have rejected the use of conceptual typologies of media systems. All qualitative



typologies proposed to date have become obsolete over time. Moreover, the best-known typology of Hallin and Mancini (2004) is difficult to use with the ESS 2009 data set, as there are a significant number of polities that cannot be classified according to their main typology, which distinguishes between liberal (Anglo American countries such as Britain, Canada, Ireland and the United States), democratic corporatist (Northern and Central Europe: Austria, Belgium, Denmark, Finland, Germany, the Netherlands, Norway, Sweden and Switzerland) and a polarised pluralist model (Mediterranean Europe).⁷ Therefore, I have used an indicator of what Norris (2010) calls the 'Regulatory Framework of Media systems' (based on the policies, rules and laws regulating political communications within each country). It is not easy to find reliable indicators comparable across all 27 countries analysed here. However, even if far from perfect for the purposes of this article, the most recently available annual index of Press Freedom constitutes a proxy indicator of quality, diversity and informativeness of the media systems. Freedom House assigns points to countries on the basis of three equally weighted categories related to the media's independence from government and market monopolies. Together, these categories create a composite score of media freedom, which I have rescaled to range from 0 (completely unfree) to 15 (completely free).⁸

Moreover, this index includes: (i) the legal environment (including laws, statutes, constitutional provisions and regulations) that enables or restricts the media's ability to operate freely in a country; (ii) the political environment, which evaluates the degree of political control over the content of news media in each country (such as editorial independence, official or unofficial censorship, harassment or attacks against journalists); and (iii) the economic environment, which includes the structure of media ownership, media-related infrastructure, its concentration, the impact of corruption and bribery on news media content, and the selective withholding or bestowal of subsidies or other sources of financial revenue on some media outlets by the state. The media that this index considers include TV, radio, newspaper and the Internet. The quality of the media system should be higher, the higher its degree of autonomy from political and market monopolies (Lesson, 2008), and the higher the quality of the media system, the greater the degree of information and the higher the diversity of the interpretation of the facts provided to the audiences. Compare, for example, the contextual information surrounding citizens in Romania and Finland. In Romania, many media outlets owe back taxes to the government, putting them under pressure to bias their coverage if they wish to remain in business. The Romanian government also regulates the media through licensure and has historically controlled important media-related inputs, such as distribution networks for newspapers (Lesson, 2008). In contrast, in Finland, generous subsidies are provided to the press, including fiscal advantages and

regulatory relief. Among the diverse rationales given for this support, it is worth highlighting the requirement to promote political discussion and debate. Specifically, this means providing political parties and other political groups with support for their provision of information activities or support for party-affiliated newspapers. In addition, press subsidies are designed to prevent newspaper mortality, as newspapers are considered to be socially desirable and to serve important social functions. As a result, Finland is still one of the top five countries in the world where the circulation of dailies per person is highest (Herkman, 2008, p. 149). In sum, it is reasonable to expect that the degree of information and diversity in the coverage of hard news by the media outlets is higher in Finland when compared with Romania.

I also consider several variables measured at the individual level and representing the antecedents of political knowledge, as argued in the extant previous literature. That is, individual differences in motivation and ability as well as self-reported exposure to the news in general and to both television and newspapers (Luskin, 1990; Bennett, 1995; Delli Carpini and Keeter, 1996, Althaus, 2003). In addition, I control by gender, age and income. All these independent variables at the individual level have been recoded to go from 0 to 1 in order to make the magnitudes of the coefficients comparable.⁹

Descriptive statistics regarding all these variables measured both at the contextual and at the individual level are given in Appendix, Table A1.

Results

Table 1 provides explorative evidence about the existence of a knowledge gap between both different socio-economic status groups (here measured through the contrast between low-educated citizens versus high-educated citizens) as well as motivated and non-motivated citizens. The second column of Table 1 shows the mean value of knowledge for the interested citizens minus the mean value of knowledge for the non-interested citizens across countries. The clearest result is that the size of the motivation gap is sizeable. Moreover, a measure of the magnitude of the motivation gap in the mean value of knowledge is that, on average, interested European citizens offered 1.17 more correct responses than non-interested citizens (recall that the indicator of political knowledge ranges from 0 to 7). These differences are statistically significant in all 27 nations, although with different magnitudes. Nevertheless, almost all the countries present differences of around one additional correct answer with the sole exception of Estonia (which shows differences of a half additional correct answer).

And the same is true with respect to the education knowledge gap. On average, highly educated citizens (those above the mean value of education in

**Table 1:** Motivation and education knowledge gap in Europe, 2009

	<i>Motivation knowledge gap</i>	<i>Education knowledge gap</i>
Austria	0.88***	0.67***
Belgium	0.89***	0.77***
Bulgaria	1.35***	2.31***
Cyprus	0.87***	1.30***
Czech Republic	1.09***	0.82***
Denmark	1.02***	0.77***
Estonia	0.51***	0.78***
Finland	0.87***	0.79***
France	1.27***	0.81***
Germany	1.39***	1.33***
Greece	0.80***	0.89***
Hungary	0.98***	0.85***
Ireland	1.08***	0.74***
Italy	1.00***	0.96***
Latvia	0.97***	0.75***
Lithuania	0.93***	1.29***
Luxembourg	1.17***	0.73***
Malta	0.81***	1.27***
The Netherlands	1.23***	0.96***
Poland	1.25***	1.27***
Portugal	1.31***	1.38***
Romania	1.10***	2.04***
Slovakia	1.00***	1.14***
Slovenia	0.90***	1.12***
Spain	1.42***	1.31***
Sweden	1.03***	0.34*
The United Kingdom	1.28***	0.64***
Total	1.17***	0.97***

Note: Superscripts indicate statistically significant differences between values for both motivated and non-motivated citizens and low and highly educated citizens within each country, * $P < 0.001$; ** $P < 0.001$; *** $P < 0.0001$.

Source: My elaboration on 2009 EES Voter Study (Advanced Release, July 2010). Entries are: for the first column, the mean value of knowledge for the interested citizens minus the mean value of knowledge for the non-interested citizens; and for the second column, the mean value of knowledge for the highly educated citizens (above the mean value of education for the whole sample) minus the mean value of knowledge for the low-educated citizens (below the mean value of education for the whole sample).

the pooled sample) offered 0.97 more correct responses than low-educated citizens (below the mean value of education in the pooled sample). Again, these differences are statistically significant in all 27 nations, although with different magnitudes. For instance, countries such as Bulgaria and Romania present differences of around two additional correct responses. In contrast, the

education gap in knowledge is smaller in the case of Sweden. The other countries present significant differences that are about one additional correct answer.

The question is whether these knowledge gaps remain when we consider the other main determinants of political knowledge both at the individual and at the country level. Table 2 provides a summary of the results of the prediction of the expected value of the index of political knowledge across individuals and countries. The equation is estimated through multilevel regression. Equation 1 shows the empty model with no independent variables. Equation 2 contains all individual predictors, whereas Equation 3 adds the three contextual variables simultaneously (Number of effective parties, Social Protection and Press Freedom) to the initial equation.

A comparison of the goodness of fit of the three estimated equations summarised in Table 2 suggests that the inclusion of both individual-level and country-level variables contribute to reduce the error term at the country level (σ_u) from 0.57 (in the empty model) to 0.29 (recall also that in the model with only individual level variables, the error term is 0.42). In contrast, the reduction of the error term at the individual level (σ_i) is modest but still relevant (from 1.78 to 1.58).¹⁰

The results of Equation 3 in Table 2 demonstrate significant socio-economic and motivational differences in the levels of political knowledge of European citizens even after controlling for the other suspects in predicting knowledge. However, what is more important for the purposes of this article is that the results of Equation 3 effectively suggest that citizens living in information-rich contexts have greater incentives to obtain political information than citizens living in information-poor environments, and that they therefore present higher levels of knowledge. Accordingly, the coefficients corresponding to each of the three contextual variables used here turned out to be statistically significant, and with the expected sign.

To better illustrate the size of the effect of the three contextual factors on citizens' knowledge, the graphs included in Figure 2 shows fitted political knowledge scores for citizens throughout the range of the number of effective parties, Government Expenditure on Social Policies and Press Freedom. The predictions are shown with a measure of the uncertainty around them (see the grey area around the fitted line that provides 95 per cent confidence intervals).¹¹

To begin with the number of effective parties, the first graph of Figure 2 confirms the hypothesis that citizens living in countries with more than two parties encounter a higher degree of available political information. Moreover, comparing a country with the minimum number of effective parties (two in Malta) with a country with a medium number of effective parties (five, as, for instance, in Finland) and all other things being equal, the average political

**Table 2:** Individual and contextual determinants of political knowledge, Europe 2009. Multi-level estimation

	<i>Equation 1</i>	<i>Equation 2</i>	<i>Equation 3</i>
General exposure to media	—	0.58*** (0.04)	0.56*** (0.04)
Exposure to television news	—	-0.13*** (0.04)	-0.11*** (0.04)
Exposure to newspapers' news	—	0.54*** (0.05)	0.55*** (0.05)
Level of education	—	1.52*** (0.05)	0.28*** (0.04)
<i>Subjective Income Level:</i> ^a			
From poor to medium	—	0.28*** (0.04)	0.28*** (0.04)
Medium	—	0.34*** (0.04)	0.33*** (0.04)
From medium to rich	—	0.34*** (0.04)	0.33*** (0.04)
Others	—	-0.08 (0.09)	-0.09 (0.09)
Male	—	0.64*** (0.02)	0.64*** (0.02)
Age	—	1.81*** (0.18)	1.80*** (0.18)
Age squared	—	-1.52*** (0.22)	-1.51*** (0.22)
Political interest	—	0.59*** (0.02)	0.60*** (0.02)
Voted last election	—	0.26*** (0.02)	0.26*** (0.02)
Having ideology	—	0.59*** (0.03)	0.58*** (0.03)
Number of effective parties	—	—	0.43*** (0.08)
Number of effective parties squared	—	—	-0.05*** (0.01)
Social protection	—	—	0.03*** (0.01)
Press freedom	—	—	0.03*** (0.01)
Intercept	3.89*** (0.11)	0.48*** (0.10)	-1.00*** (0.22)
σ_u	0.57	0.42	0.29
σ_e	1.78	1.60	1.58
R^2 within	0.00	0.18	0.19
R^2 between	0.00	0.41	0.58

Table 2 *Continued*

	<i>Equation 1</i>	<i>Equation 2</i>	<i>Equation 3</i>
R^2 overall	0.00	0.20	0.22
N Level 1	27 069	25 737	25 737
N Level 2	27	27	27

^aReference category: poor.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Dependent variable is the Index of Political Knowledge (number of correct answers, from 0 to 7), independent variables at the individual level are all re-codified from 0 to 1. More details about all the independent variables and their descriptive statistics are given in the Appendix and final Note 9 in the main text.

Source: My elaboration on 2009 EES Voter Study (Advanced Release, July 2010). Standard errors in parentheses.

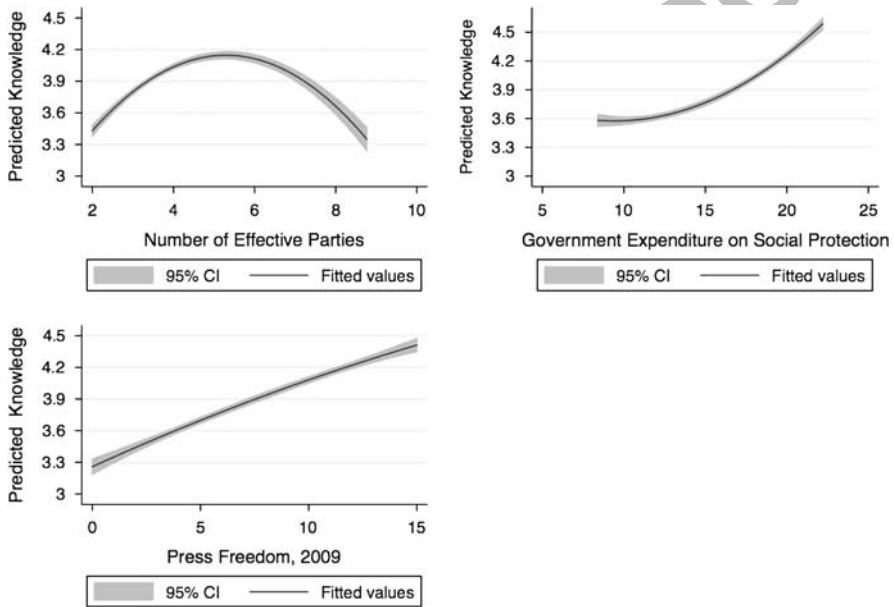


Figure 2: Fitted Political Knowledge by Contextual Variables: Number of Effective Parties, Social Protection and Media Freedom (reversed).

Source: My elaboration on EES Voter Study (Advanced Release, July 2010). Calculations made on the basis of Table 2 (Equation 3).



knowledge is of around 0.8 greater in Finland,¹² which means almost one additional question correctly answered (out of the seven possible survey questions). This effect, however, is limited to a certain number of parties. As the first graph of Figure 2 shows, there is an inflation point in the effect of the number of effective parties on knowledge so that from five parties onwards the higher the number of effective parties the lower the predicted value of citizens' political knowledge. Again, comparing a citizen living in a country with five parties such as Finland with a citizen living in a country with more than eight parties (Belgium) and all other things being equal, the average political knowledge is of around 0.8 greater in Finland. These results confirm what previous studies have shown about the higher degree of available political information in countries with multiparty systems (Gordon and Segura, 1997; Berggren, 2001). However, these findings also show that when the number of effective parties is too large, the distinction between all of them becomes particularly difficult. Therefore, the effect on knowledge become negative, as the surplus information available in the context of a country with a huge number of different parties prevents citizens from selecting the information they really want to obtain, given the lack of available time in which to do so.

Regarding expenditure on social protection, the results show (see the second graph in Figure 2) that the predicted level of knowledge increases the higher the degree of social protection. Moreover, if we compare, for example, Romania with Denmark (which present the lowest and highest values of Expenditure on Social Protection, respectively), there is a difference of one unit in the scale of political knowledge between the two polities. This substantively means a difference of one additional question correctly answered. Again, this confirms the hypothesis that the higher the degree of social protection, the higher the presence of the state in the daily life of citizens, and the higher the opportunities of them to acquire information and experience as citizens in using social services, asking for their social rights, paying taxes and so on. This is why more egalitarian societies produce better-informed citizens (Milner, 2002).

Finally, the difference in the expected value of political knowledge between, for example, Romania (the country presenting the lowest degree of Press Freedom) and Finland (with the highest degree of Press Freedom) is of about one unit on the index (3.3 versus 4.4, see the corresponding graph in Figure 2). This again means one additional question correctly answered in Finland in comparison with Romania, thereby confirming Norris's (2010) argument with respect to the importance of the regulatory framework of media systems in determining the media effects upon citizens' knowledge, cultural attitudes and behaviour.¹³

Up to this point it has been demonstrated that all contextual factors influence political knowledge by producing different levels of free information that citizens can draw on, thereby changing the calculus to favour the decision

to become informed about politics. These findings are in line with the previous literature (Gordon and Segura, 1997; Grönlund and Milner, 2006; Lesson, 2008) and confirm the importance of context in explaining individual-level differences in political knowledge. However, the main argument of this article is that information-rich environments can crucially affect knowledge by reducing the effects of abilities and motivation in explaining differences in knowledge at the individual level (Hypothesis 2).

This second hypothesis is tested by specifying the interaction terms of each of the contextual factors considered with both citizens' level of education and political interest. These two variables constitute the principal indicators previously used in the literature to demonstrate the knowledge gap (Kwak, 1999). The results of this exercise are summarised in Table 3. The first column (education knowledge gap) shows the results corresponding to the interaction term of each of the contextual factors with citizens' education, whereas the second column (motivation knowledge gap) shows the results corresponding to the interaction term of each of the contextual factors with citizens' political interest.

Starting with the education knowledge gap, two out of the three interaction terms turned out to be statistically significant and with the correct (negative) sign, indicating that the positive and significant effect of education on knowledge is smaller in magnitude as the level of expenditure on social protection and the degree of freedom of the press increase.

It is important to emphasise that the magnitudes of the interaction estimates are quite substantial, thereby confirming Hypothesis 2, which states that the context can crucially reduce education inequalities in the political knowledge of European citizens. To gain a better sense of these magnitudes, Figure 3 shows the marginal effect of citizens' level of education on their political knowledge as the two contextual factors change.¹⁴

The solid sloping line denotes the marginal effect, and the dashed lines indicate a 95 per cent confidence interval based on the estimates of Equation 1 (Education knowledge gap) of Table 3. When both the upper and lower bounds of the confidence interval are located above the zero line, the marginal effect is statistically significant. As can be seen, the marginal effect of education on knowledge is always significant but it decreases to a great extent (from 2.22 to 1.65) when expenditure on social protection increases from its lowest to its highest level. In addition, the effect of education on what people know about politics significantly decreases from 2.58 to 1.45 when Press Freedom increases from its lowest to its highest level.

In contrast, not one of the interaction terms of the contextual variables with citizens' declared political interest turned out to be statistically significant (with the sole exception of social protection, which, however, is significant only at the $P=0.05$ level), suggesting that the context does not seem to affect the

**Table 3:** Contextual factors conditioning the knowledge gap. Multi-level estimation

	<i>Education knowledge gap</i>	<i>Motivation knowledge gap</i>
General exposure to media	0.56*** (0.04)	0.57*** (0.04)
Exposure to television news	-0.11*** (0.04)	-0.11*** (0.04)
Exposure to newspapers' news	0.53*** (0.05)	0.54*** (0.05)
Level of education	2.47*** (0.19)	1.50*** (0.05)
<i>Subjective Income Level:</i> ^a		
From poor to medium	0.27*** (0.04)	0.28*** (0.04)
Medium	0.31*** (0.04)	0.33*** (0.04)
From medium to rich	0.32*** (0.04)	0.33*** (0.04)
Others	-0.10 (0.09)	-0.09 (0.09)
Male	0.64*** (0.02)	0.64*** (0.02)
Age	1.84*** (0.18)	1.81*** (0.18)
Age squared	-1.55*** (0.22)	-1.52*** (0.22)
Political interest	0.60*** (0.02)	0.38*** (0.08)
Voted last election	0.26*** (0.02)	0.26*** (0.02)
Having ideology	0.57*** (0.03)	0.59*** (0.03)
Number of effective parties	0.44*** (0.10)	0.41*** (0.10)
Number of effective parties squared	-0.05*** (0.01)	-0.04*** (0.01)
Social protection	0.05*** (0.01)	0.02* (0.01)
Press freedom	0.06*** (0.01)	0.03** (0.01)
Number of effective parties * education	-0.01 (0.01)	—
Social protection * education	-0.04*** (0.01)	—
Press freedom * education	-0.06*** (0.01)	—
Number of parties * political interest	—	-0.00 (0.00)

Table 3 *Continued*

	<i>Education knowledge gap</i>	<i>Motivation knowledge gap</i>
Social protection * political interest	—	−0.02* (0.01)
Press freedom * political interest	—	0.00 (0.01)
Intercept	−1.58*** (0.28)	−0.86** (0.27)
σ_u	0.14	0.15
σ_e	1.57	1.59
R^2 within	0.21	0.20
R^2 between	0.60	0.59
R^2 overall	0.24	0.22
N Level 1	25 737	25 737
N Level 2	27	27

^aReference category: poor.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

Dependent and independent variables are exactly the same as in Table 2 (except for the interactions included here).

Source: My elaboration on 2009 EES Voter Study (Advanced Release, July 2010). Standard errors in parentheses.

motivation knowledge gap. These findings have important implications for the study of political sophistication and the pessimistic conclusions that the conventional literature from Converse (1964, 1970) onwards has put forward.

Conclusions

Conventional studies of what people appear to know about politics have been generally pessimistic due to concerns about the lack of citizens' abilities to be informed and to know about politics (an exception is Berggren, 2001). The average citizen has often been presented as politically ignorant, with a very low level of understanding of politics. The main explanation for this finding is based on the literature related to the two most important determinants of political knowledge at the individual level: capabilities and motivation. Inequalities in levels of abilities and motivation are often seen as an essentially social constant in the literature, with very few possibilities of change in the future. Though this literature has generated important insights, these findings are limited to single-country studies (especially the United States, but also Canada and the Netherlands). As others have argued (for instance,

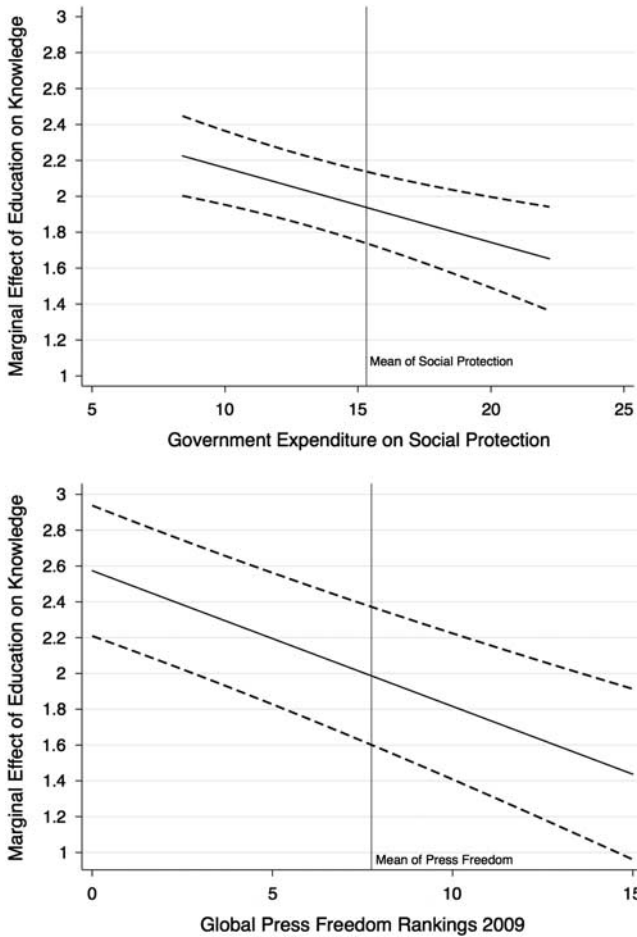


Figure 3: Conditional Effects of Contextual Variables on the Education Knowledge Gap.

Source: My elaboration on EES Voter Study (Advanced Release, July 2010). Calculations made on the basis of Table 3 (Equation 1. Education Knowledge Gap).

Iyengar *et al.*, 2010; Norris, 2010), more research is needed in different contexts apart from that of the United States. In contrast to the above, in this article I have argued that what people appear to know about politics is not only a function of their capabilities and motivation but also of their contextual opportunities to become informed about politics. The findings shown here (Table 2, Equation 3) confirm this first hypothesis by using recent European data that are especially suited to comparing cross-country levels of political knowledge.

In addition – and perhaps even more importantly – free information produced in certain socio-economic and communication circumstances potentially benefit less socio-economically advantaged citizens to a greater extent than the more advantaged. And this is exactly what the results presented in Table 3 (education knowledge gap equation) imply. The real importance of the contextual factors lies not only in their additive (direct) effects on political knowledge but also in their conditioning influence on the effect of abilities (here measured through education) on knowledge. In short, information-rich environments can crucially reduce the existing education differences in political knowledge, thereby confirming Hypothesis 2. In contrast, information-rich environments do not appear to condition the motivation-knowledge gap.

These findings together suggest that the unequal distribution of knowledge in societies will not necessarily perpetuate over time. Whereas it is hard to increase the abilities and motivations of citizens, political and socio-economic circumstances could, at least potentially, be changed by politicians while in government.

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2012. 'Economics and Elections in Spain (1982–2008): Cross-Measures, Cross-Time'. *Electoral Studies* 31 (pp. 485–490).

2011. 'Widening or reducing the knowledge gap? Testing the media effects on political knowledge in Spain (2004–2006)'. *International Journal of Press/Politics* 16 (pp. 163–184).

Notes

- 1 There are other variants of the potential impact of the institutional design on what citizens know about politics such as: the type of democratic system (that is, the contrast between presidential, semi-presidential and parliamentary systems), the degree of competitiveness of



- elections and the existence of compulsory voting (Gordon and Segura, 1997); but as explained later in the article, none of them appear to show a significant effect on what people know about politics in Europe.
- 2 I use the EES, European Parliament Election Study 2009, Voter Study, Second Pre-Release, 23 June 2011. Data collection was started on the first working day following the 2009 European Parliament elections (from 4 to 7 June 2009). Intended sample size was 1000 successful interviews with each EU member state. Data collection was done by CATI phone interview. More detailed information about the EES 2009 Voter study can be found in www.piredeu.eu.
 - 3 It is true that using post-electoral surveys can be problematic for measuring political knowledge. Moreover, there is a risk of overestimating levels of knowledge because during electoral campaigns voters receive the highest degree of political information of the whole legislature. Acquiring information at those times is less costly than in the middle of a mandate. Nevertheless, for the purposes of this article, the potential overestimation of knowledge is likely to affect all countries equally and therefore comparisons of the levels of political knowledge across countries is not seen as problematic.
 - 4 I am aware that there is a debate in the specialised literature about the difficulties in constructing valid indexes of factual political knowledge (see, for instance, Mondak, 1999). Consequently, I tried alternative measures of political knowledge, for example, by counting the number of 'incorrect' and 'DK' answers. However, these alternative indexes almost seem to work identically to the conventional index that simply counts the number of correct answers. As a result, I have preferred to use this conventional index, as its format makes it directly comparable with previous studies on other democracies. The index has a value of Cronbach's $\alpha = 0.625$.
 - 5 Alternative indicators used by previous studies (Gordon and Segura, 1997) such as the degree of proportionality of the national electoral system or the existence of compulsory voting did not turn out to be statistically significant according to the previous tests I performed. Results are available on request from the author.
 - 6 I have tried alternative measures such as: (i) Tax revenue of social security funds as a percentage of total taxation, and as a percentage of GDP; (ii) Government expenditure on Education as a Percentage of GDP (2007); (iii) Government expenditure on Health as a Percentage of GDP (2007); (iv) The Gini Index (I used an alternative data set for this variable): (Democracy Cross-national Data, Release 3.0 Spring 2009 from www.pippanorris.com/). All of them turned out to be statistically significant with the expected direction: that is, the higher the size of the state, the higher the value of knowledge. This provides additional evidence in favour of the robustness of the results presented here.
 - 7 Hallin and Mancini deduce this typology from a careful comparison of four main media system dimensions: the degree of state intervention in the media system, the degree of autonomy of media from partisan dictates, the historical development of media markets and the degree of professionalism in journalism (note that the discussion of these four dimensions is beyond the scope of this study; for a full discussion, see Hallin and Mancini, 2004).
 - 8 Recall that this is a rating (not a ranking score) variable.
 - 9 The specific variables used are as follows: General exposure to the Media ('In a typical week, how many days do you follow the news?' From 0 to 7 days, then recoded from 0 to 1); Exposure to the main channels of each country TV news (from 0 to 7, then recoded from 0 to 1); Exposure to the main newspapers' news in each country (from 0 to 7, then re-coded from 0 to 1); Education (from 0 to 6, recoded from 0 to 1); Subjective income level: (specified with four dummy variables coming originally from the question: 'Taking everything into account, at about what level is your family's standard of living?'); Male (1 for male, 0 for female); Age (in years, recoded from 0 to 1); Political Interest (1 for those who declare to be very and quite interested in politics, 0 for those who are not interested in politics); Voted (1 for those who

- voted in past election, 0 for those who did not vote); Ideology (1 for those declaring a position on the ideological scale, 0 for those who did not).
- 10 Additional indicators of the convenience to adopt a multilevel model estimation are the three R^2 . More specifically, R^2 between increases from 0.41 in Equation 2 to 0.58 in Equation 3. Both the R^2 within and the R^2 overall also increases, but to a lesser extent. I also performed a Likelihood Ratio Test of the null hypothesis that no multilevel estimation was needed. The result is that we can reject this hypothesis, with a χ^2 value = 2368.92 ($P=0.0000$) for the null model (Equation 1 in Table 2) and with a χ^2 value = 1646.75 ($P=0.0000$) for the model including only the independent variables measured at the individual level (Equation 2 in Table 2).
 - 11 Fitted values of political knowledge in Figure 2 are calculated from Equation 3 in Table 2, and with all predictors (except the one of interest in each case: number of effective parties, government expenditure on social protection and Press Freedom) set to their typical values (that is, means for quantitative variables and proportions for categorical variables).
 - 12 The predicted value of knowledge for a citizen living in a country with two parties is equal to 3.35, whereas this number increases up to 4.15 for a citizen living in a country with five parties (the given difference then is: $4.15 - 3.35 = 0.80$).
 - 13 A recent article by Lesson (2008) also show the significant influence of Media Freedom on what people declare that they know about politics.
 - 14 Graphs in Figure 3 were created following Brambor *et al* (2006).

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Appendix

Table A1: Descriptive statistics

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Political knowledge	27 069	3.89	1.87	0.0	7.0
General exposure	26 893	0.84	0.26	0.0	1.0
Exposure to television news ^a	27 069	0.41	0.29	0.0	1.0
Exposure to newspapers news ^b	27 069	0.22	0.21	0.0	1.0
Education level	26 206	0.57	0.23	0.0	1.0
Subjective income	27 069	2.00	0.98	0.0	4.0
Male	27 069	0.44	0.49	0.0	1.0
Age	26 763	0.40	0.21	0	1.0
Political interest	26 978	0.54	0.50	0.0	1.0
Voted last election	27 069	0.71	0.46	0.0	1.0
Ideology	27 069	0.87	0.33	0.0	1.0
Number of effective parties	27 069	4.01	1.46	2	8.76
Social protection	27 069	15.34	4.10	8.4	22.2
Press freedom	27 069	7.74	4.16	0.0	15.0

^aTo create the variable Exposure to the Main Television channels' news in each country, I used the information given in: q8_a q8_b q8_c q8_d in the questionnaire. It provides the number of days a week that a person declares that they watch news on all main channels in each country (for each respondent, I counted the number of days a week for each channel, if more than one is declared). I then recoded the variable from 0 to 1.

^bTo create the variable Exposure to the Main Newspapers' news in each country, I used the information from the variable q12_a q12_b and q12_c and the information from q15_a to q15_d in the questionnaire. The variable provides the number of days a week that a person declares that they dedicate to reading news in newspapers (for each respondent, I counted the number of days a week for each newspaper, if more than one is declared). I then recoded the variable from 0 to 1.

Source: My elaboration on EES Voter Study (Advanced Release, July 2010).



Table A2: Details of the original coding of the variables used to construct the index of political knowledge (the dependent variable)

The measure of political knowledge used here ranges from 0 to 7, reflecting the correct true/false answers given by each respondent (Cronbach's $\alpha = 0.63$). 'Don't Know' answers were coded as incorrect answers. Original wording:

- Q92. Switzerland is a member of the EU: True/False
 - Q93. The European Union has 25 member states: True/False
 - Q94. Every country in the EU elects the same number of representatives to the European Parliament. True/False
 - Q95. Every 6 months, a different Member State becomes president of the Council of the European Union. True/False
 - Q96. The [Specific Minister] is [Correct name]. True/False
 - Q97. Individuals must be 25 or older to stand as candidates in [COUNTRY] elections. True/False
 - Q98. There are [150 per cent of real number] members of the [COUNTRY Parliament]. True/False
-

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