REMINDER

ROLE OF EUROPEAN MOBILITY AND ITS IMPACTS
IN NARRATIVES, DEBATES AND EU REFORMS

Education Moderating Media Effects on Free Movement Attitudes

WORKING PAPER

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Education Moderating Media Effects on Free Movement Attitudes

A Comparative Approach

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Abstract

Free movement within the EU is one of EU citizens' central rights. An increasing number of EU countries are questioning this right. Media is likely to play a central role when forming (and holding) political attitudes, including attitudes toward free movement within the EU. Yet, recipient characteristics might moderate media effects. Education is perceived as one of the most important moderators of media effects. In this study, we look at the moderating effect of education in the context of media messages related to immigration on attitudes toward free movement. We investigate this with a panel analysis in seven European countries. Analysis shows that free movement attitudes are highly stable over time. Hungary seems to be an exceptional case. Here, valence of migration-related news affected free movement attitudes over time (i.e. those who receive negative migration-related news developed more negative free movement attitudes over time). In this country, specifically the moderately educated are affected by the news media's sentiment, as opposed to the high and low educated. In all other countries under investigation, we find no direct nor moderated effect of education on the impact of media on attitudes toward free movement.

Please note, all results and conclusions presented in this paper are preliminary and may be subject to change after further in-depth analysis.

Introduction

At present, free movement of citizens, one of the fundamental pillars of European integration and a foundational right for EU citizens, appears increasingly to be questioned across the European Union (EU). This seems to be closely linked to public opinion toward immigration, as consequences of intra-EU movement are a form of immigration. In the context of Brexit, political actors in the UK made immigration (Walter 2019) and the free movement of workers (Vasilopoulou and Talving 2018) core issues in the referendum, and anti-immigration sentiment was an essential driver for the Brexit movement (Goodwin and Milazzo 2017). Several other EU member states have also called for more restricted access of EU workers to welfare benefits (Ruhs 2017).

Perceptions of and attitudes toward EU-related issues are influenced by several factors (e.g., Vasilopoulou and Talving 2018; Hakhverdian et al. 2013; Losito et al. 2016). Yet, the media is likely to play a central role. For many EU citizens, media is the primary source of political information (Shehata & Strömbäck 2014). News media are an important source regarding EU fellow citizens and non-EU migrants, as direct interactions are limited due to geographic distance, language barriers, or otherwise limited opportunities for direct contact (Walter 2019; Boomgaarden and Vliegenthart 2009). It is thus not surprising that research has shown news media to play a central role in shaping EU citizens' immigration attitudes (e.g., Beyer and Matthes 2015; Boomgaarden and Vliegenthart 2009; Czymara and Dochow 2018, Schemer 2012), attitudes toward the EU and EU policies (e.g., Vliegenthart et al. 2008), and voting intention for anti-immigrant and Eurosceptic parties (Boomgaarden and Vliegenthart 2007; van Spanje and de Vreese 2014; for a recent overview see Boomgaarden and Song 2019).

However, there are only few studies focusing directly on free movement within the EU. Empirical evidence indicates that individuals who support free movement also have more favourable attitudes towards migration in general (Vasilopoulou and Talving 2018). Further, identification with the EU helps explain support for EU mobility (Blinder and Markaki 2019). This suggests not only that media coverage exerts an effect on free movement attitudes, but that also that certain recipient characteristics might moderate this effect. One crucial moderator of media effects in the context of political and immigration related attitudes is education. First, education is linked with immigration attitudes directly, as lower-educated

individuals are more likely to hold anti-immigration attitudes compared to higher-educated individuals (Vergeer et al. 2000). Second, education affects how individuals process media information and messages (Vergeer et al. 2000; Schemer 2012). Last, education might be linked to opportunities to migrate from one EU country to another (Vasilopoulou and Talving 2018), which might affect related attitudes. Based on this, the present study looks at the moderating role of education in media effects on citizens' policy preferences towards free movement.

Media Effects on Immigration and Migration Policy-Related Attitudes and Preferences

First, we will first discuss theoretical approaches to the question of how the media affects immigration-related and EU-related attitudes in general, as we perceive attitudes about mobility as relating to both domains. In the second section, we will identify the potential moderating role of education.

Media Effects in the Context of EU- and Immigration-Related Attitudes

Attitude toward EU mobility can be understood as a form of EU attitude, as well as an attitude toward (intra-EU) migration. Research has shown that media plays a role with respect to both kinds of attitudes. There are different theoretical approaches to the question of why media can affect immigration-related attitudes (for a recent overview see Eberl et al. 2018). In short, agenda setting proposes that salient topics in the media (media agenda) are transferred to the audience (audience agenda). In this way, the media shows the public which topics should be considered important (McCombs 1977). Indeed, research has shown that increased media coverage about immigration leads to increased public awareness of the issue of immigration (Dunaway, Branton, and Abrajano 2010). Since media also tend to portray immigrants and immigration in a threatening way (Eberl et al. 2018), media salience of immigration, immigrant actors, or immigration-related media frames might also raise anxiety regarding migrants and thus increase anti-immigration sentiment (Czymara and Dochow 2018; Dunaway et al. 2011; Sniderman, Hagendoorn, and Prior 2004; Van Klingeren et al. 2015). For example, in a recent study, Harteveld, Schaper, De Lange, and van der Brug (2017) find that visibility of the 'refugee crisis' in European media increased citizens' Euroscepticism.

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The second theoretical strand explaining why media can exert an effect on immigration-related attitudes is framing. Briefly, to frame means to select some aspects of (a perceived) reality and make them more salient than others in a communication context. When doing so, implicitly or explicitly media promote a particular problem definition, causal interpretation, or moral evaluation (Entman 1993). Consciously or unconsciously, journalists frame what the news is *about*, using certain keywords, stereotyped images, and sentences that provide reinforced clusters of facts. In the context of migration, media often frame immigrants with respect to economic, welfare, and security threats to the host nation (Eberl et al. 2018; Heidenreich et al. 2019). For example, in the UK press, Baker et al. (2008) find that the term 'migrants' is closely associated with the frame of economic threat (which is a term that might apply to intra-European mobility), while as the term 'refugee' or 'asylum seeker' was associated with welfare system burdens. In Eastern European countries, immigrants seem to be connected to welfare burdens as well, and are framed in the context of welfare chauvinism (the political notion that welfare benefits should be restricted to natives; Balch and Balabanova 2016). It is likely, especially in rich member states, that increased intra-EU mobility will lead to increased public discussion, and hence to media coverage dealing with potential effects of immigration. Much less is yet known about the framing of immigration and mobility in Eastern European countries. In a comparative media content analysis of five European countries during the so called 'refugee crisis', Heidenreich and colleagues (2019) look at the framing of coverage related to immigrants and refugees in Germany, Hungary, UK, Sweden, and Spain. Hence, this analysis is concerned with extra-EU, rather than intra-EU, migration. Yet, as the media often do not distinguish between intra-European mobility and migrants from outside of the EU (e.g., Walter 2019), we take this analysis into consideration at this point. In the UK, the 'refugee camps' frame was strongest, while in Spain the framing was rather leaning towards a common EU refugee policy. In Hungary, the only Eastern European country under investigation, the authors find media coverage framing refugees as a problem of national security, especially after refugees arrived in greater numbers to the country (Heidenreich et al. 2019). This border-control frame is also salient in Germany, one of the largest receiving countries in the EU, but not in Sweden, where they found the 'human interest' frame to be the most salient one. In a recent report on Swedish news coverage between 2010 and 2015, Strömbäck, Andersson, and Nedlund (2017) find that news media are problem-orientated and tend to focus on the perspective of the authorities. Yet, news coverage about immigrants in

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Sweden still tends to be more positive than in other EU countries (Berry, Garcia-Blanco, and Moore 2016). Overall, research indicates that there tends to be a more diverse set of media frames used in receiving compared to sending EU countries (Heidenreich et al., 2019).

Thus, research indicates that media framing differs across EU countries, with receiving countries in particular framing refugees in a rather negative way. Heidenreich and colleagues (2019) also consider geographical differences as an explanatory factor. Here the results show that media in countries closer to the 'Balkan route' (Hungary and Germany) framed the height of the 'refugee crisis' as a border security issue, while media in countries farther away focused on other frames. For an in-depth analysis of the media landscape in the seven countries under investigation, please see forthcoming REMINDER Deliverable 8.3 by Eberl et al.

On a more general level, a number of studies show that media framing affects immigration attitudes. For example, Igartua and colleagues (2009; 2011) find that positive economic media framing of immigration leads to more positive responses concerning immigration. Conversely, negative framing (in this case related to crime) resulted in more negative attitudes. As another example, research suggests that triggering perceptions of economic competition with migrants leads to anti-immigrant attitudes and support for restrictive immigration policies (Costello and Hodson 2011; Jackson and Esses 2000; Esses et al. 2001). It has also been shown in a panel study that repeated exposure to news portrayals of social groups in relation to economic or security threats increased prejudice over time (Schemer 2012, 2014).

Looking specifically at EU mobility in the context of the REMINDER project, it has been shown in a comparative panel study that the salience of labor market and security frames in the media and their respective valence affect free movement attitudes (Eberl et al. 2018). If respondents' media diets were characterized by positive sentiments about labor market or security concerns in the context of migration, those respondents were more likely to agree with the statement that the movement of individuals between EU countries should not be restricted. The inverse was also true: i.e., those who were exposed to negative sentiments about the effects of migration were more likely to agree with restriction of free movement.

Education as Moderator of Media Effects on Free Movement Attitudes

On a general level, education is perceived as an important moderator for media effects, as it affects how individuals seek and process media messages. In the context of immigration attitudes, it is established that lower education is associated with stronger anti-immigrant attitudes. Some researchers even consider formal education as the most important individual-level characteristic in perceiving threats from immigrants (Vergeer et al. 2000). It is likely that anti-immigrant attitudes are related to mobility attitudes in general, as intra-EU mobility is a form of migration (Blinder and Markaki 2019; Vasilopoulou and Talving 2018). It has also been shown that higher education is associated with more positive attitudes toward free movement (REMINDER D9.3). Thus, education is associated with pre-existing attitudes toward migration and mobility. Such attitudes might also affect how media messages are processed. For instance, processes of counter-arguing might occur if individuals with a positive attitude towards migration and mobility receive negative news about immigration (Petty, Tormala, and Rucker 2004). Concerning intra-EU mobility, it is especially the lower and moderately educated that might feel threatened by immigrants, as they might compete for jobs. The educated elite, on the other hand, tend to profit from immigration, as highly-skilled citizens have the cognitive, professional, and behavioural skills to successfully compete in changing environments (Vasilopoulou and Talving 2018). Further, immigration inflows might lower the wages of low-skilled workers and raise the wages of high-skilled ones (Scheve and Slaughter 2001; Walter 2010). Taken together, this suggests that the lower educated might be more receptive to negative information on immigration and mobility, and less receptive to positive information, whereas it might be the other way around for the higher educated individuals. Hence, especially in the context of migration and intra-European mobility, education might moderate the effect of media.

Research has also shown that lower-educated individuals are particularly susceptible to populist messages (Bos, Van der Brug, and de Vreese 2013; Matthes and Marquart 2015; Matthes and Schmuck 2015). One reason might be that those with lower education levels might seek 'salvation' in simple messages that promise a clear identity and protection from change (Mudde 2007). Moreover, populist messages often refer to the 'common man' (Bos, Van der Brug, and de Vreese 2013). Thus, specific (populist or simplistic) media messages might affect lower educated more than higher educated people. Attributing blame to culprit

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others – for instance immigrants – is also a central part of political populism (Hameleers and Schmuck 2017).

It has further been shown that political knowledge plays a crucial role in the effect of political (media) messages. Education can be understood as a specific form of knowledge (Matthes and Schmuck 2015), as the better educated tend to pay more attention to politics and are better informed about it (Zaller 1992). In a panel study, Schemer (2012) for example finds that knowledgeable individuals were more resistant to media influence in terms of both positive and negative portrayals of immigrants. This is supported by experimental research by Matthes and Marquart (2013), who show that lower-educated individuals were more easily persuaded by right-populist media messages than those with higher educational levels. One key reason is that knowledgeable individuals use their knowledge to defend their own pre-existing attitudes (Biek, Wood, and Chaiken 1996). Further, people with higher political knowledge are better equipped to distinguish relevant from irrelevant messages. In the case of (attitude-)relevant messages, better-informed individuals they are more likely to change their opinion than those who are less well informed (Delli Carpini 2000). Hereby, they take into consideration the quality of message content (e.g., whether the arguments are strong or weak, whether the source of the arguments are credible), while individuals with lower levels of knowledge are more likely to rely on different cues such as messages length (Wood, Kallgren, and Preisler 1985) or emotionality (Matthes and Marquart 2013). Further, issue-specific knowledge increases critical processing of media messages related to that issue. Education equips individuals not only with knowledge but also with the cognitive skills to acquire such knowledge in the first place (Matthes and Schmuck 2015; Zaller 1992).

Education also affects real world experiences with EU mobility. It is the highly educated in particular who tend actively to profit from intra-EU mobility. Vasilopoulou and Talving (2018) show that, between 2008 and 2015, the education levels of those who moved from one EU member state to another were primarily medium and high. Low-educated individuals made up only about one fifth of EU migrants. Thus, not only do the higher-educated have more sources of information and knowledge about elite discourses than the low educated, they are also more likely to have real-world experience with EU mobility. This again limits the potential effect of media (Meltzer 2017). Further, higher-educated individuals are more likely to receive media messages about immigration and mobility than lower-educated individuals (Zaller

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1992). Yet, at the same time, as outlined above they are less likely to be influenced by such messages, due to more stable pre-existing attitudes and knowledge, critical evaluation of the media messages, and counter-arguing processes. Thus, it is not to be expected, that education is a moderator of media effects for the highly educated. On the other hand, those who process no or very little information about politics, which is more likely to be the lower educated, will most likely not be affected by elite discourse distributed via mass media. As outlined above, it is those who *do* receive some input from the media, and at the same time do not hold attitudes so stable that they cannot be changed, who should be affected the most by the media. Thus, *we expect a moderating effect of education specifically for the moderately educated* (*hypothesis 1*).

It is important to note, however, that national prosperity might moderate the link between education and media effects on freedom of movement attitudes. Specifically, in countries that do not fare well economically, those with lower education might benefit from emigration to a richer EU country where they will receive job and welfare opportunities. Thus, freedom of movement might be perceived as a chance for the lower educated to pursue a better future. In fact, intra-EU mobility has primarily taken place from poorer towards richer countries, with labour market factors such as seeking better job opportunities being a key driver (Vasilopoulou and Talving 2018). This could lead to differential effects in sending and receiving countries. The labor market competition hypothesis suggests that individuals assess whether immigration affects the wages of similarly-skilled nationals (Scheve and Slaughter 2001). It is possible that, in receiving countries, intra-EU mobility could potentially lower the wages of low-skilled workers, as it leads to more competition from immigrants and threatens nationals' status. At the same time, highly-educated citizens might benefit from international competition and have more flexibility to move (Vasilopoulou and Talving 2018). Thus, particularly in receiving countries, the media could affect the lower educated and higher educated differently. On the other hand, it is possible that media leads to mainstreaming effects. Mainstreaming is based on the assumption that different parts of the population hold different views of reality. This, however, is 'evened out' by media use (Gerbner et al. 1982). From this perspective, although the higher and lower educated have different fears, media consumption leads to a 'mainstreaming' of their attitudes toward migration and mobility. We

thus ask: *How does the moderating effect of education on media effects differ in sending and receiving countries? (RQ1)*

Data and Methods

To test the hypothesis and examine the research question above, we combine media content and panel survey data. The media analysis consists of all immigration-related news coverage in the most relevant online news outlets for seven European countries (Spain, UK, Germany, Sweden, Poland, Hungary, and Romania). This content data was linked to the general population in each of these countries using two waves of a three-wave online access panel survey. All data focus on the period between December 2017/January 2018 (wave 1) and October 2018 (wave 3).

Panel survey

Sample

For the panel survey, we relied on an online panel. As such panels rely on non-probabilistic sampling procedures, in which potential respondents voluntarily sign up to participate in the survey, such panels might suffer from self-selection bias. In order to limit such bias, an effective sampling procedure was set up. More specifically, quotas for general population of each country, based on gender, age, and region, were designed to ensure that survey results could serve as basis for accurate estimations on the target populations. Several further steps have been taken to ensure the quality of the sample. Respondents were excluded who exhibited very short response times (i.e., interview duration 20% below the median time per country), an unusual amount of 'don't know' answers (i.e., 40% of 'don't know' answers), as well as aberrant response patterns (i.e., straight-lining) as identified by the fieldwork company. Furthermore, we excluded respondents who (wilfully or by mistake) wrongly answered a trap question (i.e., a question asking the respondents to choose a specific answer from the questionnaire), while at the same time being unusually fast in filling out the questionnaire (i.e., interview duration 50% below the median time per country and per device). Based on these sampling and quality check procedures, the sample of participants in both panel waves is described in table 1.

Table 1: Sample

	DE	HU	PL	RO	ES	SE	UK
Gender %							
Male	53.6	54.5	54.6	54.5	55.7	52.7	49.4
Female	46.4	45.5	45.4	45.5	44.3	47.3	50.6
Age (yrs)	54.9	46.8	48.3	44.6	48.8	52.0	55.3
Education level [a] %							
0	0	0	0	0	0	0	1
1	0	0	1	1	2	2	1
2	25	15	1	2	5	12	25
3	33	32	36	27	6	36	37
4	12	11	12	9	30	13	3
5	6	9	-	4	16	16	5
6	11	20	10	39	29	14	18
7	13	12	37	19	10	6	9
8	1	1	2	1	2	2	1
Total	1109	965	1140	937	1166	926	990

[a] Education levels are based on ISCED Codes.
[b] The international education level is not comparable in category 5 for Poland.

Survey Measures

Our dependent variable *Policy preferences for free movement within the EU* was assessed with four items, tapping different aspects of free movement such as perceived impact on the economy, the labor market, and the welfare system ('The movement of individuals between EU countries should be restricted to help fight crime'; 'The movement of individuals between EU countries should be free to increase mutual understanding'; 'The movement of individuals between EU countries should be restricted to protect native workers'; 'The movement of individuals between EU countries should be free to promote economic growth') on a five-point scale. They were added up to form a composite index (negative items reverse coded; high values indicating favourable attitudes toward free movement; M_{W1} = 3.28, α_{W1} = .84; M_{W3} = 3.30, α_{W3} = .83).

Education was assessed based on the international standard classification of education (levels 0-8; 0 = Early childhood education, 8 = Doctoral or equivalent). To differentiate

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between moderate vs. low/high education, education was first centered and squared in a next step. Thus, we created a new metric measure ranging from moderate to high and low education.

Two additional controls were assessed in wave 1. *Support of EU* was assessed with one item. Respondents could indicate whether they generally think that their country's membership in the EU was a good thing ($M = 3.53$; 5 = it is a very good thing). To assess *ideology*, respondents should place themselves on a scale ranging from 0 = left to 10 = right ($M = 5.14$).

General *media use* to get information about political events was assessed with one item each for online news use, social media use, television news use, and printed newspapers, on a 5-point scale (from 1 = never to 5 = almost every day).

Content Analysis and Linkage Approach

To test the hypotheses and examine the research question, we combine media content and panel survey data. The media analysis consists of immigration-related news coverage in the most relevant online news outlets for seven European countries (Spain, UK, Germany, Sweden, Poland, Hungary, and Romania). This content data was linked to the general population in each of these countries using two waves of a three-wave online access panel survey. All data focuses on the period between December 2017/January 2018 (wave 1) and October 2018 (wave 3).

The media sample contains a great number of different types of print and online news outlets selected based on circulation figures, genre, and national and regional distribution. The print outlets' material was collected from several media archives, namely *APA DeFacto*, *EMIS*, *LexisNexis* and *Webretriever*. For the online news coverage, each day at noon, the main website of each of the outlets was scraped and every article referenced on this main website was stored locally.

Table 2: Media Corpus

Country	Outlets	Number of migration related articles
Spain	20minutos.es, abc.es, El Mundo, El Pais, eldiario.es, elmundo.es, elpais.com, larazon.es, lavanguardia.com	14,646
UK	bbc.com, Daily Mail, Daily Mirror, dailymail.co.uk, express.co.uk, mirror.co.uk, The Daily Telegraph, The Guardian, telegraph.co.uk, theguardian.com, thesun.co.uk, thetimes.co.uk	27,911
Germany	Bild, bild.de, Die Welt, faz.net, Frankfurter Allgemeine Zeitung, Frankfurter Rundschau, spiegel.de, Süddeutsche Zeitung, sueddeutsche.de, taz, taz.de, welt.de, zeit.de	46,709
Sweden	Aftonbladet, aftonbladet.se, dn.se, etc.se, Expressen, expressen.se, friatider.se, Metro, metro.se, nyheter24.se, samnytt.se, svd.se, Svenska Dagbladet	14,595
Poland	Dziennik Gazeta Prawna, fakt.pl, Gazeta Wyborcza, gazeta.pl, onet.pl, rp.pl, Rzeczpospolita, se.pl, wp.pl, wyborcza.pl	9,601
Hungary	24.hu, blikk.hu, borsonline.hu, index.hu, Magyar Hirlap, magyarhirlap.hu, Magyar Idök, mno.hu, napi.hu, Nepszava, nepszava.hu, ripost.hu	19,704
Romania	adevarul.ro, click.ro, Evenimentul Zilei, evz.ro, Jurnalul National, jurnalul.ro, libertatea.ro, Romania Libera, romanialibera.ro, zf.ro, ziare.com, Ziarul Financiar	5,571

Migration-related articles were identified using a Boolean search string for each language.[1] To eliminate duplicate articles that may arise due to faulty archiving, regional mutations of news outlets, or archiving and updating of minimally-edited articles, a deduplication procedure was

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[1] Here is the English example of the search string used: asyl! OR immigrant! OR immigrat! OR migrant! OR migrat! OR refugee! OR foreigner! OR "undocumented worker!" OR "guest worker!" OR "foreign worker!" OR emigrat! OR "freedom of movement" OR "free movement". The search strings were validated based on a subsample of 1,200-3,400 news articles in each language. Their average Recall and Precision scores were R = 0.81 and P = 0.85, respectively, and therefore represent an appropriate tool for the identification of migration related news articles.

applied.[2] The following analyses are thus based on 138,737 immigration-related news articles (see table 2).

This information already represents the basis for one of our key variables, namely the ***relative visibility*** of migration coverage. Since we first identified the salience of migration-related news coverage in general, we can now put it in contrast to the full coverage within each outlet (i.e. also including news articles that are not migration-related). The value zero would mean that none of the articles in that outlet and period of time refer to migration and the value of 100 would mean that all of the articles in that outlet and period of time refer at least once to migration (M = 8.24, SD = 2.58).

In preparation for further automated annotation of the textual data (i.e. the application of an English-language keyword-based sentiment dictionary), we drew a random sample of 50% of all articles. From that sample, all non-English texts were machine translated into English (e.g., de Vries, Schoonvelde and Schumacher 2018). The possible alternative method, to construct multilingual dictionaries (i.e. keyword lists in different languages that measure the same concept), was in comparison a much more resource-intensive endeavor (see Lind et al. forthcoming). Hence, we decided to machine translate the corpus into one target language (English) using the Google Translate API (see also Lucas et al. 2015).

To quantify ***migration-related sentiment***, we use the pre-validated and frequently-used Lexicoder sentiment dictionary by Young and Soroka (2012). The dictionary measures sentiment on the basis of 4,567 predefined positively and negatively connoted words. It outperforms other known dictionaries in this field and was previously tested against a body of human-coded texts (ibid.). The Lexicoder dictionary fits our purpose perfectly as it is frequently used to measure sentiment in political texts (e.g., Balmas 2017; Soroka & Wlezien, 2018) and was already used for the analysis of migration-related texts in previous studies (Lawlor 2015; Lawlor and Tolley 2017). To measure migration-specific sentiment within an article, we first selected all sentences within that article containing migration-related words.[3]

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[2] While it is fairly easy to exclude exact replications of an article, dealing with slightly altered news items requires additional efforts. To detect highly similar texts (e.g., Pouliquen, Steinberger, Ignat, Käsper, & Temnikova, 2004), we relied on the frequently used cosine similarity measure. Comparing the textual content of two articles, this measure indicates and predicts their resemblance. Whenever an article exceeded such manually predefined and language specific thresholds, the shorter version of the article was excluded.

[3] According to the English language search string in Note 1.

All words within these sentences are then annotated based on the Lexicoder sentiment dictionary. Words that are not in the dictionary are assigned a neutral sentiment. Scores for each sentence are standardized according to the length of the sentence. Adding up all scores from words bearing positive sentiment (P_i), subtracting all scores from negative words (N_i), and dividing by the amount of words (W_i) in a document, we get a final score (S_i), revealing whether a sentence has a more positive or negative sentiment (e.g. Kouloumpis, Wilson & Moore, 2011):

$$S_i = \frac{\sum P_i - \sum N_i}{\sum W_i}.$$

A sentence's sentiment can thus theoretically range from -1 (all words within that sentence have a negative sentiment) to +1 (all words within that sentence have a positive sentiment), with zero referring either to a balance between positive and negative words or only neutral words within that sentence. Aggregated to the level of a specific outlet over a specific period of time, we compute the average of all the standardized sentiment scores per article within that outlet and that period of time (M = 0.024; SD = 0.11).

Finally, in order to link the outlet-specific content measures (i.e., relative visibility of migration and migration-related sentiment) to the respondents of the survey, we use their reported outlet-specific news exposure (days per week spent reading each news outlet, range 0-7). Using this data, we computed respondent i's *content* exposure for each frame j based on their *use* of different media outlets k: k: $content_{ij} = \frac{\sum_1^k (use_{ik} * content_{jk})}{\sum_1^k use_{ik}}$

Respondents who did not use any online news outlets were assigned the country-specific average scores of frame salience and frame sentiment, to keep them in the subsequent analyses.

Results

The findings from the *overall mode*l including all countries shows that higher educational degrees, being male, self-positioning on the left, and support of the EU are related to developing more positive free movement attitudes over time (table 3; unstandardized coefficients are shown, standard errors are cluster-robust). We find no effect of age in the overall model. The effect of the lagged dependent variable shows that free movement attitudes were highly stable between the two panel waves.

Looking at the influence of media, visibility of migration news improves attitudes toward free movement over time. Thus, the more respondents read about migration in the news, the more positive became their attitudes toward free movement. However, in the overall model we do not find an effect of sentiment. Whether news about migration was positive or negative did not affect attitudes toward free movement. In a next step, we look at the moderating effects of education. The significant interaction effect of education (E2; moderate vs. high/low) indicates that, for people with moderate educational degrees, exposure to positively-valenced migration news improves free movement attitudes over time. At the same time, people with moderate educational degrees who received negative news about migration became more negative over time. This however does not occur for the low and highly educated respondents. Hence, moderately-educated respondents are especially affected by the valence of the news they read about immigration. Since we cannot know whether the reported aggregate effects are homogeneous across countries we conducted a regression analysis for each of the seven countries separately (see table 4).

Table 3: Linear Regression for Media Effects on Policy Preferences towards Free Movement over time

	All Countries
Dependent variable: Policy Preferences in favour of Free Movement (Wave 3)	
Intercept	1.021 (.126)**
Education (low to high) (E1)	.018 (.003)**
Education (moderate vs. low/high) (E2)	-.004 (.005)
Gender (0 = male, 1 = female)	-.047 (.007)**
Age	.002 (.001)
Ideology (L/R)	-.021 (.008)**
Support of EU	.155 (.014)**
Policy Preferences pro Free Movement (Wave 1)	.547 (.032)**
Frequency Online media use	-.010 (.007)
Frequency Social media use	-.013 (.009)
Frequency Television use	-.002 (.013)
Frequency Print media use	-.001 (.005)
Visibility of Migration in News	.002 (.004)*
Frequency of exposure to positive vs. negative migration news (M)	.127 (.100)
E1 x M	-.038 (.047)
E2 x M	-.054 (.017)**
n of observations	6,013
LL	-5954.626

Note. Unstandardized coefficients are shown, standard errors are cluster-robust. To differentiate between low/high vs. moderate education, education was first centered and squared in a next step.
* $p < .05$, ** $p < .01$

Table 4a: Linear Regression for Media Effects on Policy Preferences towards Free Movement for each Country

Dependent variable: Policy Preferences in favour of Free Movement (Wave 3)	Germany	Spain	Sweden	UK
Intercept	1.136 (.332)**	1.061 (.241)**	.721 (.477)	-.343 (.644)
Education (low to high) (E1)	.121 (.133)	.011 (.015)	-.292 (.359)	.131 (.139)
Education (moderate vs. low/high) (E2)	-.056 (.096)	-.009 (.007)	.029 (.170)	.039 (.089)
Gender (0 = male, 1 = female)	-.079 (.043)	-.022 (.039)	-.037 (.049)	-.057 (.044)
Age	.002 (.001)	.003 (.001)*	.005 (.001)*	.001 (.002)
Ideology (L/R)	-.021 (.012)	-.037 (.009)**	-.030 (.009)**	-.010 (.011)
Support of EU	.146 (.022)**	.101 (.021)**	.119 (.023)**	.142 (.021)**
Policy Preferences pro Free Movement (Wave 1)	.556 (.028)**	.556 (.024)**	.643 (.030)**	.623 (.028)**
Frequency Online media use	-.020 (.016)	.021 (.018)	-.011 (.021)	-.016 (.016)
Frequency Social media use	.009 (.015)	.001 (.014)	-.016 (.018)	.013 (.016)
Frequency Television use	-.026 (.022)	-.001 (.021)	.005 (.026)	.030 (.018)
Frequency Print media use	-.001 (.017)	-.006 (.016)	-.014 (.020)	.001 (.017)
Visibility of Migration in News	.100 (.001)	.003 (.025)	.002 (.013)	.034 (.002)*
Frequency of exposure to positive vs. negative migration news (M)	2.096 (10.643)	-.026 (.159)	3.958 (.28.212)	-25.375 (.16.119)
E1 x M	2.701 (3.135)	-.097 (.105)	-9.036 (9.957)	3.348 (4.207)
E2 x M	-1.232 (2.255)	.081 (.049)	.502 (4.754)	1.518 (2.710)
n of observations	965	1006	767	794
Adj. R^2	.488	.428	.539	.628

Note. Unstandardized coefficients are shown. Standard errors are cluster-robust. To differentiate between low/high vs. moderate education, education was first centered and squared in a next step. * $p < .05$, ** $p < .01$

Table 4b: Linear Regression for Media Effects on Policy Preferences towards Free Movement for each Country

Dependent variable: Policy Preferences in favour of Free Movement (Wave 3)	Hungary	Poland	Romania
Intercept	3.538 (.772)**	.908 (.205)**	1.919 (.246)**
Education (low to high) (E1)	.388 (.308)	-.011 (.018)	-.006 (.021)
Education (moderate vs. low/high) (E2)	-.419 (.199)*	.015 (.010)	-.005 (.013)
Gender (0 = male, 1 = female)	-.028 (.048)	-.037 (.043)	-.079 (.052)
Age	.007 (.002)**	.007 (.001)*	.005 (.002)*
Ideology (L/R)	-.036 (.012)**	-.013 (.009)	.018 (.011)
Support of EU	.187 (.082)**	.157 (.024)**	.146 (.027)**
Policy Preferences pro Free Movement (Wave 1)	.362 (.031)**	.477 (.028)**	.367 (.033)**
Frequency Online media use	-.058 (.024)*	.003 (.020)	-.016 (.029)
Frequency Social media use	.024 (.019)	.001 (.016)	-.041 (.024)
Frequency Television use	.067 (.023)*	-.010 (.021)	-.018 (.031)
Frequency Print media use	.010 (.020)	-.007 (.019)	.015 (.022)
Visibility of Migration in News	-.003 (.008)	.011 (.013)	-.003 (.002)
Frequency of exposure to positive vs. negative migration news (M)	65.369 (22.451)**	-.035 (.428)	-.043 (.226)
E1 x M	11.791 (9.665)	.298 (.197)	.034 (.086)
E2 x M	-12.948 (6.285)*	-.025 (.110)	.062 (.059)
n of observations	769	927	785
Adj. R^2	.401	.447	.269

Note. Unstandardized coefficients are shown. Standard errors are cluster-robust. To differentiate between low/high vs. moderate education, education was first centered and squared in a next step.

* $p < .05$, ** $p < .01$

As shown by table 4 the results from the aggregate model suggests a mixture of different effects at the country level. Consistent effects occur for the attitude that the EU is a good thing and the lagged dependent variable. Put differently, across all countries support for the EU improves free movement attitudes over time. Additionally, the cross-lagged effect indicates a high stability of free movement attitudes over time. Positive age effects occur in five out of seven countries—exceptions are Germany and the UK. In the other countries, this means that free movement attitudes become more positive for the elderly. We find no effect of gender affecting free movement attitudes in the different countries. However, in Spain, Sweden, and Hungary respondents self-placement on the left-right spectrum affects their free movement attitudes. In these countries, left orientated respondents tend to have more favourable attitudes while those who tend to the right hold less favourable attitudes toward free movement over time. We do however find no such ideology effects in Germany, the UK, Poland, and Romania.

A closer look at the individual country regressions shows that the effect of exposure to news media coverage on migration shows no effect with the one exception of Hungary. Here, exposure to online media led to more negative attitudes toward free movement over time while exposure to television news lead to more positive attitudes.

Considering the linkage approach, visibility of migrants and migration in the news shows a significant effect only in the UK. Here, visibility of migrants and related topics led to more positive free movement attitudes. In all other countries, we find no such effects. In Hungary, exposure to positive portrayals of migration in the news increases the preference for free movement over time. At the same time, exposure to negative news led to less favourable attitudes. The significant interaction term indicates that this effect occurs only for people with moderate educational degrees, but not for Hungarians with higher and lower educational degrees. However, such a moderating effect of education occurred only in Hungary. Thus, our hypothesis that the media affect especially the moderately educated holds true in only one of our seven countries. At this point, we cannot really spot a difference between sending and receiving countries.

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Conclusion and Discussion

In this paper, we have looked at media effects on attitudes towards free movement within the EU. Specifically, we analysed the moderating role of education in this process (i.e. whether media effects are different for lower-educated than for higher-educated respondents). From a cognitive psychological perspective, it is likely that higher-educated respondents hold more skills and knowledge (Matthes and Schmuck 2015) and are thus more resistant to media influence than lower-educated individuals (Schemer 2012), as they are better able to defend their existing attitudes. At the same time, it has been argued that lower-educated respondents are less likely to receive political information at all (Zaller 1992). For this reason, we expected a moderating effect of education specifically for the moderately educated. We tested this hypothesis in a comparative linkage approach in seven EU countries (Spain, the United Kingdom, Germany, Sweden, Poland, Hungary, and Romania). Overall, we found attitudes toward free movement to be very stable over time. We observed only very few effects of migration-related media content on free movement attitudes in our sample and respectively few effects of education moderating these effects.

Over all countries, our analysis showed that support for the EU is strongly associated with positive free movement attitudes over time. This is in line with Blinder and Markaki (2019), who find that identification with the EU explains support for EU mobility. Thus, to perceive the EU as a good thing seems to be a main explanatory factor for positive free movement attitudes over time.

In the country comparison, Hungary stands out. First, it was only in this country that we found effects of media use. Frequency of online media use was negatively associated with free movement attitudes, whereas television use was positively associated with free movement attitudes over time. Second, in this country alone we found the sentiment (i.e. the frequency of exposure to positive vs. negative migration news) of migration-related news to affect free movement attitudes. This effect means that those who receive positive migration-related news develop more positive free movement attitudes, whereas those who receive negative migration-related news develop more negative attitudes to free movement over time. Looking at the media discourse in Hungary, research conducted in the REMINDER project shows that, during the so-called refugee crisis, migration-related coverage increased dramatically, and the sentiment of this coverage became extremely negative (Eberl et al. 2019). This applies to

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migration coverage in general, as well as to intra-EU migration specifically. Moreover, both intra-EU migration and migration in general are highly associated with the security frame in the Hungarian media. Migration-related media coverage eliciting threats is very likely in this context. While this might have changed towards a more neutral style of reporting, it is still likely that the effect in Hungary tends to be more in a negative direction (i.e., those who receive negative news developed more negative attitudes toward free movement). In Hungary, and only there, we also found the expected moderating effect of education: the moderately educated in particular were affected by the media.

A somewhat surprising finding is that visibility of migration related coverage showed a positive effect in the UK. Those who read more about migration in the news also developed more positive attitudes toward free movement over time. This effect is small yet significant. We can only speculate about the reasons at this point. One possible reason is that migration-related coverage does not play a major role in the UK any longer, as opposed to in the years 2015 and 2016 (see Eberl et al., 2019). However, looking at the framing of intra-EU migration, the economic frame played a major role in the UK during the lead-up to the referendum on Brexit. It is possible that, if the media reported on immigration-related topics at all, it was more in the light of migration being important for a thriving economy. However, in all other countries media effects concerning migration related news coverage and moderating effects of education did not seem to play a major role for attitudes toward free movement. Overall, these attitudes seem to be highly stable.

Finally, we need to address some limitations of the study. Using an online access panel, it is possible that the results are somewhat prone to self-selection bias. Although we tried to meet this limitation by adding a quota sample, it is likely that those who are more interested in politics were also more likely to participate twice in such a panel. This might have reduced the moderating effect of education. Second, although taking into account a large set of media outlets, we were not able to investigate respondents' complete media diet with the available data. This might have led to underestimation of media effects.

In this paper, we have looked at the valence of migration-related media coverage. It is possible that, with more detailed investigation into different thematic framing aspects (such as cultural, welfare, or security framing) of media coverage, we might find a more detailed

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picture of how media might shape attitudes toward free movement. Further, country-specific aspects (as the case of Hungary in this study), such as intra- and extra-EU migration flows, media systems, and economic prosperity should be taken into account in future studies.

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REMINDER

ROLE OF EUROPEAN MOBILITY AND ITS IMPACTS IN NARRATIVES, DEBATES AND EU REFORMS

The REMINDER project is exploring the economic, social, institutional and policy factors that have shaped the impacts of free movement in the EU and public debates about it.

The project is coordinated from COMPAS and includes participation from 14 consortium partners in 9 countries across Europe