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The role of different "media diets" on the perception of immigration: Evidence from nine European countries

Abstract: A better understanding of media effects on immigration attitudes is crucial for policy development and innovation. While many studies have focused on immigration discourses or the salience of this issue in print media and broadcast TV, few have looked at how different "media diets" influence immigration attitudes. Using two-wave panel data composed of 14,480 observations (7,240 individuals) from nine EU countries, this article specifically analyses the role of online and social media news consumption as well as media diet diversity on Europeans' perceptions of the economic and cultural impact of immigration. The results show that relying primarily on online or social media (compared to print newspapers) to get news, consuming news less frequently, or having a less diverse media diet all significantly and negatively influence people's perceptions of the impact of immigration. Results and implications are discussed in light of today's changing media landscape and news consumption habits.

Keywords: media effects, media exposure, media diet diversity, social media, immigration attitudes, panel data

1 Introduction

Over the past decades, intensified migration flows to more developed countries have brought the issue of immigration to the fore in political debates and in the media. In Europe, it has been – and still is – a polarizing issue used by a rising wave of populist nationalist parties to gain increasing support through fearmongering and anti-immigration discourse (Goodwin and Milazzo, 2017). While the economic, sociocultural, and labor-market benefits of immigration are well-documented (IOM, 2019; OECD, 2014; Oxford Economics, 2018), negative views and perceived threats are still commonplace in the public opinion on this issue. Such views are often based on significant misperceptions. Indeed, several studies have shown that

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immigrants are believed to be more numerous, culturally distant, unemployed, and less educated than they actually are (Alesina, Miano, and Stantcheva, 2018; Banulescu-Bogdan, 2018). In an era of rampant misinformation and fake news (Vosoughi, Roy, and Aral, 2018), and given the gap between official reports and public views on immigration, it is essential to study media effects on Europeans' perceptions of immigration. This is important for public opinion research, as well as to better understand current trends – and their evolution – in immigration attitudes and policy.

Much of the extant research that tries to explain attitudes towards immigration has revolved around perceived economic and cultural threats. Indeed, the more positive or negative character of these attitudes can be related to the extent to which individuals perceive immigrants as a new source of competition for available jobs (economic threat) or as jeopardizing the dominance, legitimacy, and stability of the host nation's norms and values (cultural threat). While factors like education, financial security, or media framing have often been pointed to as some of the determinants of immigration attitudes, few studies have quantitatively and comparatively analyzed the role of different "media diets" – including social media news consumption and media diet diversity – on people's perceptions of immigration. Aside from content analyses of (social) media coverage and discourse in relation to immigration and the refugee crisis (e. g., Bennett, 2016; Boukala and Dimitrakopoulou, 2018; Heidenreich, Eberl, Lind, and Boomgaarden, 2020; Heidenreich, Lind, Eberl, and Boomgaarden, 2019), the comparative analysis of media effects – including online and social media – on the perception of immigration has been, up until recently, largely neglected in the scientific literature (Eberl et al., 2018). With some exceptions (see De Coninck, Matthijs, Debrael, De Cock, and d'Haenens, 2019; De Coninck, Mertens, d'Haenens, 2021; Meltzer et al., 2020), most existing media effects studies are single-country studies (Arendt, 2010; Czymara and Dochow, 2018) or do not take into account social and online media (Theorin, 2019). This study contributes to filling these gaps, an endeavor that is all the more important in light of the ever-increasing proportion of people who rely – sometimes exclusively – on social media for news consumption (Pew Research Center, 2018; We Are Social, 2021), and the spread of fake news online (Carr, Liliana, Sanchez, and Daros, 2019; Vosoughi et al., 2018). By taking into account online and social media use, this study captures an often neglected – and increasingly important – part of media reality that Europeans rely on in their daily lives.

The main objective of this study is thus to provide a comprehensive account of the role of different media diets on Europeans' perceptions of the economic and cultural impact of immigration on host societies, considering respondents' main media platform used for news, frequency of news consumption, and level of media diet diversity (the use of different media platforms, as opposed to sources). To do

so, I used two random-effects Ordinary Least Squares (OLS) models. The first one considers the perception of the economic impact of immigration, while the second one focuses on the perception of the cultural impact of immigration. The analysis is based on two-wave panel data consisting of 14,480 observations collected through online surveys in nine European countries between April and December 2018, and between April and July 2019. This study provides a multifaceted and European perspective on the role of different media diets on immigration attitudes, comparatively illustrating the important influence of media diet diversity and of relying primarily on online and social media. The results show, first, that having a less diverse media diet and consuming news less frequently is significantly and negatively associated with people's perception of the economic and cultural impact of immigration. Second, they show that relying primarily on social media or news websites (compared to print newspapers) to get news is significantly and negatively associated with the perception of the economic and cultural impacts of immigration.

2 Perceived threats, media diets, and immigration attitudes

Drawing on the theoretical foundations of intergroup threat theory (Esses, Jackson, and Armstrong, 1998; Stephan and Stephan, 2000; Tajfel, 1981), attempts to make sense of attitudes towards immigration are often articulated around two main types of perceived threat, one of an economic and the other of a cultural nature (Esses, Hamilton, and Gaucher, 2017; Meltzer et al., 2017).

As described below, differences in the *perception* of these threats – and in individuals' attitudes towards immigrants – can be due to a diverse range of factors, among which media exposure, education, financial security, and political orientation.

As most people do not personally experience immigration and intergroup relations, the media play a crucial role in the construction of users' mediated lifeworlds (Mathieu and Pavlíčková, 2017; Ortiz and Harwood, 2007). A growing number of studies on the representation of immigration in the media have concluded that media content and frames significantly influence beliefs about immigration. Indeed, the framing of immigration around negative stereotypes often related to physical, economic, or cultural threats has been shown to elicit negative attitudes towards immigration (Boomgaarden and Vliegenthart, 2009; Eberl et al., 2018; Igartua, Barrios, and Ortega, 2012; Igartua and Cheng, 2009; Mauro, 2020; van Klingeren, Boomgaarden, and De Vreese, 2017). However, the positive framing of immi-

gration has been shown to reduce negativity towards immigration as well as over-estimations of the actual size of the population of "illegal" immigrants (Blinder and Jeannet, 2018; van Klingeren, Boomgaarden, Vliegenthart, and de Vreese, 2015).

Main media used for news consumption

While the above studies were primarily interested in the impact of news content and framing on immigration attitudes, less attention has been given to the impact of different types of media, specifically to how relying primarily on different media platforms (a measure of media diets in this study) influences people's perceptions of immigration. Some studies found a significant relationship between exposure to commercial broadcasting (as opposed to public service broadcasting) as well as alternative, non-traditional media, and negative attitudes towards immigrants (Beyer and Matthes, 2015; Jacobs, Meeusen, and d'Haenens, 2016; Štětka, Mihelj, and Tóth, 2020; Theorin and Strömbäck, 2020), or that the increasingly sensationalist nature of mass media coverage reinforced negative perceptions of immigration (Battegay and Boubeker, 1993; Benson, 2002). Television news tends to frame immigration more negatively – and to lead to less accurate perceptions of the immigrant population size – than print newspapers (Herda, 2010; Igartua, Muñiz, Otero, and De la Fuente, 2007). However, individuals who get more news through newspapers and radio (compared to other media) have been shown to hold a more positive opinion on the economic impact of immigration (Héricourt and Spielvogel, 2013). When it comes to online and social media news consumption, the expectation is that these contribute to anti-immigration attitudes. This can be due – in part – to the imperative of the social media business model to attract clicks (often through dramatic and attention-grabbing content), as well as to the open and participatory nature of social media and the absence of journalistic gatekeeping, which makes them a fertile ground for the spread of fake news and anti-immigrant and extremist content (Carr et al., 2019; Ekman, 2019; Nichols, 2017). In this sense, I hypothesize that using social media as a main source of information will be associated with a more negative perception of the impact of immigration (H1).

Media diet diversity

Another important and related factor in the formation of public opinion and perceptions of immigration is media diet diversity (a measure of media diets in this study). People can access information on social and political matters through a multitude of media, including television, social media websites, news websites,

radio, and traditional newspapers. As with different news outlets, they can choose to combine these but can also rely on one or some of them exclusively (Yuan, 2011). Individuals exposed to more than one newspaper were found to perceive ethnic minorities as less threatening than those who only read one newspaper (Vergeer, Lubbers, and Scheepers, 2000). People's knowledge of political and current affairs has been shown to be related to the number of sources that they use – with more sources making individuals more knowledgeable (Kohut, Morin, and Keeter, 2007). The assumption is that a more diverse news diet (in our case through the use of several media platforms) is more enlightening and broadens the range of contents and perspectives that people are exposed to, thereby reducing the likelihood of media "echo chambers", in which users are mostly exposed to content that matches their political views and confirms pre-existing opinions (Dubois and Blank, 2018). This is an issue that is most commonly associated with social media and online news aggregators (e. g., Aragó, Kappler, Kaltenbrunner, Laniado, and Volkovich, 2013; Barberá 2015; Conover, 2011) and that represents a serious concern, given that deliberation and awareness of different political opinions represent cornerstones of a healthy democracy (Mouffe, 1999). In this echo chamber scenario, pro-immigration users would likely gradually adopt an increasingly pro-immigration stance, and vice-versa, contributing to more polarization. However, this depends on the extent to which these users find themselves in echo chambers (e. g., depending on their media diet diversity both within and across platforms) as well as on the immigration narratives that are dominant on social media. One could imagine that a sensationalist online information environment privileging emotions over information and accuracy (García Orosa, Gallur Santorun, and López García, 2017) and prone to extremist content (Carr et al., 2019; Nichols, 2017) would contribute to the development of anti-immigrant sentiment.

Technically, news consumers could also find themselves in cross-platform echo chambers. However, this is unlikely as the use of more platforms will increase the likelihood of incidental exposure to different types of content (Dubois and Blank, 2018). Indeed, by switching platforms, one might, for instance, be exposed to right-wing content posted by a Facebook friend, browse a general news site tackling a diversity of issues in a non-partisan way (Weeks, Ksiazek, and Holbert, 2016), and watch a TV debate between ideologically discordant politicians. Highlighting the relevance of media platforms in news exposure, a study found that users who rely on the same news outlet but on different platforms have a different perception of the most important political issues their country faces (Althaus and Tewksbury, 2002). Although the following assumption has recently been challenged in a specific single-country study focusing on the 2019 elections in the Czech Republic (Štětka et al., 2020), I hypothesize in this paper that having a more diverse media diet (relying on more media platforms to get news) and consuming (political) news more

frequently (regardless of the media platform used) are both associated with a more positive perception of the impact of immigration (H2). Media diet diversity favors fact-checking practices (Dubois and Blank, 2018) and informed reasoning on social and political issues, potentially reducing confirmation bias, a process whereby individuals stick to information that confirms pre-existing views (Nickerson, 1998).

Other influencing factors are considered as mediating the effects of media exposure on immigration attitudes. These include education (Héricourt and Spielvogel, 2013; Matthes and Schmuck, 2015; Vergeer et al., 2000), economic vulnerability (Atwell Seate and Mastro, 2016; Gang, Rivera-Batiz, and Yun, 2002; Schmuck and Matthes, 2017), and political orientation (Jost, Federico, and Napier, 2009; Lahav and Courtemanche, 2012; Pardos-Prado, 2011).

In recent years, there have been significant changes in the media landscape, characterized by high choice, increased news avoidance (Neuman, 2018; Prior, 2007), and the rise of a new generation of news consumers bypassing print newspapers and favoring online platforms – sometimes exclusively (Karlsen, Beyer, and Steen-Johnsen, 2020; Papathanassopoulos et al., 2013). It is thus essential and timely to further our understanding of the effects of consuming news primarily through online and social media as well as of having a more or less diverse news diet on public opinion and on perceptions of immigration.

The determinants of immigration attitudes – including media consumption – have been the subject of much research. However, this is the first study that, based on two-wave panel data from nine European countries, comparatively analyzes the role of exposure to different types of media (including social media), frequency of news consumption, media diet diversity, as well as a series of socioeconomic and demographic variables, on the perception of immigration.

3 Methodology

Data

This study is based on panel data from a two-wave survey conducted in nine European countries (namely France, Germany, Greece, Italy, Poland, Spain, Sweden, Switzerland, and the United Kingdom). It should be mentioned here that the media landscape across these countries is comparable. They share similarly high levels of media pluralism (Media Pluralism Monitor, 2020) and internet access (Statista, 2019). Although these countries have different histories – more or less recent – of immigration, in recent years this issue has been both salient and sensitive across Europe as a whole (European Commission, 2018).

By having repeated observations, panel data analyses allow for robust and accurate inference and provide several advantages over time-series or cross-sectional data for capturing the complexity of human and social phenomena (Hsiao, 2007). The data used for this paper were collected by the specialized polling agency Qualtrics through online surveys administered from April to December 2018 and April to July 2019. The sample was built using quotas for gender, geographical location (regional level), education, and age. It should be noted here that wave 1 included an oversample of respondents between 18 and 35 years old, making the sample slightly younger than the European average. A total of 27,446 respondents participated in wave 1. The sample size per country in wave 1 ranged between 3,018 and 3,080. The average age in wave 1 was 33 (SD = 14.90). 7,240 respondents completed the survey in wave 2 (retention rate ranges from 16.3 % to 32.8 %). The sample size per country in wave 2 ranged from 499 to 997. The average age in wave 2 was 42 (SD = 17.25). There were 50 % female respondents in both waves. As shown in Table A5 (see Appendix), and as is often the case in observational studies, attrition was not entirely random. In this case, it seems to have been driven notably by age. It is expected that this age difference explains differences in media diets between drop-outs and non-drop-outs (e. g., younger respondents – who were more likely to drop out – display less media diet diversity, consume news less frequently, and rely more on social media than their older counterparts). The dataset used in this analysis (see Appendix, Table A1) is composed of 7,240 individuals (14,480 observations including both waves).

Variables

The concept of media diet and its operationalization have been – and are still – debated, partly due to the inaccuracy of self-reports, in part due to social desirability bias, which is believed to lead survey respondents to overreport news exposure (Prior, 2009). Among the advanced solutions, Andersen, De Vreese, and Albæk (2016) indicate a need to broaden the scope of media types included in survey questions, as well as to include a measure of frequency of exposure. Based on the survey data at hand, this article refers to media diets as encapsulating respondents' main sources of information/media used for news consumption (including not only TV and print newspapers but also social media, news websites, and radio), frequency of (political) news consumption, and level of media diet diversity (the number of media platforms that they – more or less frequently – rely on in their news consumption habits). The variables included in this study are described below. All of the corresponding questions were asked in both wave 1 and wave 2.

Dependent variables

Perception of the economic impact of immigration. This variable was measured using a 10-point scale (0 = bad, 10 = good). Participants were asked: "Would you say it is generally bad or good for your country's economy that people come to live here from other countries?" (M = 5.15, SD = 2.69).

Perception of the cultural impact of immigration. This variable, too, was measured using a 10-point scale (0 = undermined, 10 = enriched). Participants were asked: "Would you say that your country's cultural life is generally undermined or enriched by people coming to live here from other countries?" (M = 5.45, SD = 2.78).

Independent variables

Media diet diversity (number of media used). This variable was measured based on a five-item question using a 5-point scale (1 = every day, 5 = never). Participants were asked how often they get news through each of the following: print newspapers, TV, radio, news websites, and social media. The number of media for which participants did not reply "never" was then summed, providing a measure of respondents' media diet diversity, ranging from 0 to 5 media (M = 3.36, SD = 1.67).

Frequency of news consumption. This variable was measured by asking participants "How often do you consume political news?" A 5-point frequency scale was pooled to ensure a more balanced distribution. Resulting categories include "every day", "frequently" (i. e., at least once a week), and "rarely or never" (i. e., less than once a week or never) (see Appendix, Table A2 for statistics on media diets by country).

Main source of information. This variable was measured by asking participants "What is the main way you get your news?", using five items: TV, news websites, radio, print newspapers, and social media (see Appendix, Table A2 for statistics on media diets by country).

Economic prospects. To measure individuals' perceived economic prospects, a 10-point scale was used (0 = much worse, 10 = much better). Participants were asked: "Do you expect the financial situation of your household in the near future to be better or worse than it is now?" (M = 5.31, SD = 2.18).

Economic strain. To measure participants' recent/current economic strain, they were asked whether they had experienced real financial difficulties (e. g., not being able to afford food, rent, electricity) in the past 12 months (0 = no, 1 = yes) (proportion = 24 %).

International mobility (born in country of residence). This variable, which allows to control for immigrant background, was measured by asking participants if they were born in their country of residence (0 = no, 1 = yes) (proportion = 93 %).

Political orientation. To measure respondents' political orientation, they were asked: "People sometimes talk about the Left and the Right in politics. Where would you place yourself on the following scale where 0 means 'Left' and 10 means 'Right'?" (M = 4.90, SD = 2.38).

Demographics. The analysis controlled for age, gender, education, employment status, and country (see descriptive statistics in table A1).

Models

To study the role of different media diets on the perception of the economic and cultural impact of immigration, two Ordinary Least Squares (OLS) models were used. In the first model, the dependent variable corresponds to the perception of the impact of immigration on the economy, while in the second model it corresponds to the perception of the impact of immigration on culture. While the adequacy of different modelling strategies (e. g., fixed effects vs. random effects) is still debated (Bell, Fairbrother, and Jones, 2019; Vaisey and Miles, 2017), given the short time lag and low expected variation on the dependent variables between wave 1 and 2 and the desire to estimate the effects of time-invariant factors, a random-effects approach was favored, controlling for individual, country, and wave random effects. Some advantages of random-effects (over fixed-effects) frameworks include the ability to generate narrower confidence intervals, to estimate the effect of time-invariant variables and to allow for more degrees of freedom (Bell et al., 2019; Clarke, Crawford, Steele, and Vignoles, 2010).

Both models can be described as

$$
\begin{aligned}
y_{iw} = {} & \alpha_{iw} + \beta_1\, number\_media_{iw} + \beta_2\, frequency\_news_{iw} + \beta_3\, main\_infosource_{iw} + \\
& \beta_4\, economic\_prospects_{iw} + \beta_5\, economic\_strain_{iw} + \beta_6\, pol\_orientaion_{iw} + \\
& \beta_7\, education_{iw} + \beta_8\, employ\_status_{iw} + \beta_9\, intl\_mobility_i + \beta_{10}\, country_{iw} + \\
& \beta_{11}\, gender_{iw} + \beta_{12}\, age_{iw} + \beta_{13}\, wave + \mu_{iw}
\end{aligned}
$$

where i = individuals and w = wave 1 and wave 2.

As the random-effects estimator is a weighted average of the within and between estimators, I isolated within- and between-effects to evaluate whether the effects in the models are driven by longitudinal or cross-sectional differences. This was done by running separate within- (fixed) and between-effects analyses, shown in Tables A3 and A4, respectively (see Appendix). These analyses show that the observed effects in the models are mostly driven by cross-sectional differences, which is

likely due to the short time lag and the subsequently small within-individuals variance between both waves. Therefore, time-constant unobserved heterogeneity cannot be ruled out.

To address selection bias in the estimates, I used weights and propensity score matching (PSM) (Rosenbaum and Rubin, 1985). The aim of PSM is to control for potential confounding by comparing treated and untreated individuals on the observed characteristics. In this case, matching was used to compare (i) individuals who rely on more than one medium (2 or more) to those that do not (0 or 1 medium) as well as (ii) individuals who rely on social media as their main source of information to those that do not. Propensity scores were estimated based on all controls (economic prospects, economic strain, political orientation, education, employment status, born in country of residence, country, gender, and age). As shown in Table A6 (see Appendix), for the independent variables of interest (media diet diversity and main source of information), the propensity score matching test shows bias figures under 3–5 %, which is considered a sufficient balance in matching analyses (Caliendo and Kopeinig, 2008).

4 Results

Table 1 presents the results for both models, taking into account respondents' perception of the economic (model 1) and cultural (model 2) impact of immigration. Overall, the results highlight the significant role of media exposure – along with other key factors – on people's perception of the impact of immigration.

Supporting H2, the results show that individuals who have a more diverse news diet (i. e., relying on a higher number of media platforms to get informed) have a more positive perception of the economic and cultural impact of immigration. The results are highly statistically significant, and we see that relying on more media platforms increases the correlation coefficient (see Figure 1).

Also in support of H2, the results show that consuming (political) news more frequently is associated with a more positive perception of the economic and cultural impact of immigration. It is worth noting here that this was only significant when having either newspapers, radio, or news websites as a main source of information (see Appendix, Table A8).

In line with H1, and controlling for news consumption frequency and media diet diversity (among others), the results show that, compared to having print newspapers as a main source of information, relying primarily on TV, social media, or news websites to get news significantly and negatively influences individuals' perception of the economic and cultural impact of immigration (see Figure 2).

Table 1: OLS estimation results (random effects). Determinants of the perception of the impact of immigration on the economy and culture.

VARIABLES	Model 1 (economy)	Model 2 (culture)
Number of media		
0 (base)		
1	0.102	0.114
	(0.0892)	(0.0970)
2	0.136	0.187**
	(0.0903)	(0.0931)
3	0.300***	0.315***
	(0.0890)	(0.0933)
4	0.316***	0.308***
	(0.0910)	(0.0961)
5	0.454***	0.406***
	(0.0886)	(0.0938)
Frequency of news consumption		
Rarely or never (base)		
Frequently	0.112*	0.082
	(0.0596)	(0.0609)
Every day	0.250***	0.247***
	(0.0682)	(0.0698)
Main source of information		
Print newspapers (base)		
TV	−0.314***	−0.400***
	(0.0970)	(0.102)
News websites	−0.172*	−0.194**
	(0.0992)	(0.105)
Radio	−0.0702	−0.089
	(0.123)	(0.130)
Social media websites	−0.295***	−0.347***
	(0.118)	(0.125)
Economic prospects		
0 – Much worse (base)		
1	0.298	0.421**
	(0.184)	(0.192)
2	0.403***	0.444***
	(0.154)	(0.158)
3	0.856***	0.976***
	(0.142)	(0.142)

Table 1 (continued)

VARIABLES	Model 1 (economy)	Model 2 (culture)
4	1.083***	1.074***
	(0.138)	(0.138)
5	1.215***	1.270***
	(0.132)	(0.132)
6	1.377***	1.396***
	(0.136)	(0.136)
7	1.646***	1.640***
	(0.138)	(0.139)
8	1.857***	1.911***
	(0.146)	(0.146)
9	2.111***	2.041***
	(0.175)	(0.179)
10 – Much better	2.117***	2.120***
	(0.193)	(0.189)
Economic strain		
No (base)		
Yes	−0.204***	−0.149***
	(0.0514)	(0.0546)
Political orientation		
0 – Left (base)		
1	−0.0718	0.0120
	(0.150)	(0.157)
2	−0.262**	−0.145
	(0.127)	(0.133)
3	−0.387***	−0.420***
	(0.125)	(0.130)
4	−0.593***	−0.709***
	(0.131)	(0.134)
5	−1.130***	−1.236***
	(0.124)	(0.128)
6	−1.072***	−1.326***
	(0.131)	(0.135)
7	−1.357***	−1.664***
	(0.134)	(0.137)
8	−1.696***	−2.002***
	(0.141)	(0.147)
9	−1.820***	−2.063***
	(0.183)	(0.180)
10 – Right	−2.282***	−2.670***
	(0.180)	(0.182)

Table 1 (continued)

VARIABLES	Model 1 (economy)	Model 2 (culture)
Education		
Primary education or vocational school (base)		
High school or higher certificates	0.196***	0.235***
	(0.0575)	(0.0590)
First-level university degree	0.477***	0.540***
	(0.0680)	(0.0699)
Postgraduate or PhD	0.613***	0.725***
	(0.0873)	(0.0924)
Employment status		
Full-time employment (base)		
In education	0.467***	0.464***
	(0.0743)	(0.0815)
Other	−0.0164	0.0954
	(0.106)	(0.104)
Part-time employment	0.175***	0.221***
	(0.0650)	(0.0681)
Retired/permanent incapacity	0.217***	0.126
	(0.0836)	(0.0891)
Unemployed	0.0991	0.0855
	(0.0777)	(0.0791)
Born in country of residence		
Yes (base)		
No	0.458***	0.291***
	(0.101)	(0.110)
Gender		
Female (base)		
Male	0.238***	0.0425
	(0.0522)	(0.0545)
Non-binary/third gender	0.276	0.547
	(0.537)	(0.432)
Age	0.000321	−0.000442
	(0.00209)	(0.00222)
Country random effects	Yes	Yes
Wave random effects	Yes	Yes

Table 1 (continued)

VARIABLES	Model 1 (economy)	Model 2 (culture)
Constant	3.739***	4.585***
	(0.239)	(0.244)
Sigma μ	1.7630429	1.9010479
Observations	14,480	14,480

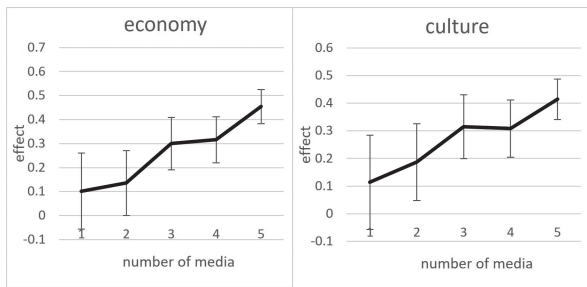Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficients are unstandardized.

Figure 1: Effect of media diet diversity on the perception of the economic and cultural impact of immigration.
Legend: Effect of the number of media on the perception of the economic and cultural impact of immigration (reference group: 0 media). 95 % confidence intervals.

Above all, we see that individuals who mainly rely on TV or social media (compared to print newspapers) to get news tend to have a more negative perception of immigration. Using radio (compared to print newspapers) as a main source of information does not seem to significantly influence the dependent variables.

Taking into account country differences (see Appendix, Table A7), we see that the effect of relying on social media as a main source of information (compared to print newspapers) on the perception of immigration loses significance in various countries. However, it remains negative and significant in the case of Italy (culture), Poland (culture), and Sweden (both economy and culture). This is also the case for news websites as a main source of information in Poland (culture) and Sweden (culture). This suggests that the effects observed in Table 1 are mostly driven by these countries, in which strong political and online anti-immigrant rhetoric has been on the rise in recent years (Askanius and Mylonas, 2015; Ekman, 2019; Krzyżanowska and Krzyżanowski, 2018). However, we see that the role of media
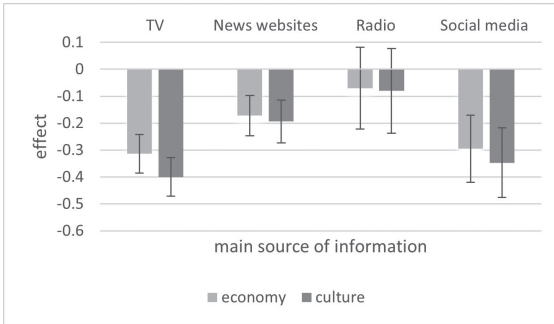
Figure 2: Effect of main source of information on the perception of the economic and cultural impact of immigration.
Legend: Effect of individuals' main source of information on the perception of the economic and cultural impact of immigration (reference group: print newspapers). 95 % confidence intervals.

diet diversity on the perception of the economic and cultural impact of immigration remains positive and significant across most countries, except for Italy, France, and Poland. For most countries, consuming news more frequently is significantly associated with a more positive (except for Germany) perception of the impact of immigration. Unlike in previous studies (Heidenreich et al., 2020), country differences in this analysis do not seem to reflect differences between so-called "receiving" and "non-receiving" countries. For example, in both Poland and Sweden, relying primarily on social media to get news is significantly associated with a more negative perception of the cultural impact of immigration, despite the fact that these two countries had, at the time of the analysis, very different proportional migrant stocks (Migration Data Portal, 2021).

5 Discussion and conclusion

In this section, the results will be discussed before presenting some concluding thoughts and limitations. This analysis highlights the important role of media exposure and of different media diets on individuals' perceptions of immigration. Although there is no clear and universally accepted definition of what media diet diversity is (and should be), the 5-point scale variable used in both models clearly illustrates the cumulative effect of using multiple media on people's perception of immigration. As described above, the more diverse the news diet, the more positive the perception of immigration. A possible explanation is that people who are exposed to a larger number of media develop a more sophisticated and multifac-

eted view of the world, whereas single-media users are more likely to align their view of social reality with what they find on the media platform in question (see Gerbner, Gross, Morgan, and Signorielli, 1986; Morgan, Shanahan, and Signorielli, 2015). Also, as suggested in the theoretical framework, a more diverse media diet – through exposure to a broader range of topics, frames, and arguments – can help avoid media echo chambers, facilitate fact-checking practices and informed reasoning, and reduce confirmation bias (Dubois and Blank, 2018).

Regarding respondents' main source of information, the analysis showed that, compared to print newspapers, relying primarily on TV, social media, or news websites to get news negatively affects individuals' perception of immigration. The negative correlation between relying primarily on TV for news consumption and the perception of immigration could be related to the very characteristics of television news programs. Indeed, compared to print newspapers, television news broadcasts tend to adopt a sensationalist approach (Kleemans, Hendriks Vettehen, Beentjes, and Eisinga, 2017), appealing to our dramatic instincts; they are based on images, which more easily trigger emotional responses, and they provide a shallower coverage of social and political issues. This negative correlation might also be related to the way issues are framed on TV. According to previous studies (e. g., Igartua et al., 2007), television news programs tend to portray immigration and immigrants in a more negative light than print newspapers.

When it comes to the finding that consuming news primarily on social media or news websites negatively affects individuals' perception of immigration, a few elements can be advanced by way of interpretation. While print newspapers are usually broader in scope and provide more in-depth analyses, news content on social media and search engines is more easily curated and narrowed down (cf. filter bubbles/echo chambers) as well as often presented in a dramatic and provocative way, following the imperative of the business model to attract more clicks, and the fact that more extreme and dramatic content is more likely to be noticed and circulated on social media (Hong and Kim, 2016). This practice is often referred to as "clickbait" and usually privileges curiosity and emotions over information and accuracy, to the detriment of traditional journalistic values (Blom and Hansen, 2015; García Orosa et al., 2017). Also, the participatory nature of social media, and their lack of editorial oversight, make them fertile grounds for the spread of misinformation, anti-immigrant and extremist content (Carr et al., 2019; Nichols, 2017). The social architecture and technological affordances of social media facilitate the large-scale diffusion of affective communication and xenophobic comments. User interactions on these platforms can contribute to the normalization of previously unacceptable discourse, which likely further strengthens anti-immigration attitudes (Ekman, 2019). Looking at the role of media diet diversity and social media news consumption can be disquieting in light of current trends in news consump-

tion, whereby people (especially younger generations) increasingly inform themselves through social media (Pew Research Center, 2018), sometimes exclusively. In this survey, one third (33 %) of respondents under 25 years old reported relying exclusively on social media to get news.

This study makes several contributions. It provides a multifaceted and European perspective on the role of different media diets on immigration attitudes. Related to issues such as online echo chambers, fake news, and the ramifications of social media news consumption (Carr et al., 2019; Jacobs et al., 2016; Nichols, 2017), the results show the important role of media diet diversity and of relying primarily on online and social media in shaping immigration attitudes and public opinion in Europe. This is particularly relevant at a time of significant changes in media consumption, including increased news avoidance (Neuman, 2018; Prior, 2007), readily available entertainment content that directs attention away from political concerns (Kim, Chen, and Gil De Zúñiga, 2013; Prior, 2005), and the rise of new generations bypassing traditional media, instead relying, sometimes exclusively, on online and social media (Karlsen et al., 2020; Papathanassopoulos et al., 2013).

Beyond theory building, the results of this article highlight the need for a fact-based and solution-oriented narrative about immigration, addressing both its challenges and benefits. They also provide additional evidence for the importance of education (including on ICT and social media use) as well as diverse and high-quality information in contemporary European societies. Education not only contributes to better economic prospects but also improves cognitive skills and critical processing of information. A better informed citizenry could – among many other things – lead to more accurate and constructive perceptions of immigration, which is in the interest of natives and immigrants alike, and which could help devise innovative integration policies aimed at maximizing the benefits of immigration for all.

This study is not without limitations. First, as mentioned previously, random-effects models – unlike fixed-effects models – do not allow to control for unobserved time-invariant variables (e. g., cognitive abilities, genetic disposition) and will tend to introduce some bias in the estimates. Second, the use of survey data to measure media exposure is not devoid of measurement and accuracy issues, including respondents' believed tendency to overreport news exposure. Finally, the way media diets are measured in this article does not incorporate individuals' source diversity within these different media. The data do not allow for an assessment of the role of specific media content or media outlets on immigration attitudes.

Today's high-choice media environment requires methodological adaptation and innovative ways of measuring exposure to political information in the media. Being able to link survey data with specific media content could allow future studies to develop a deeper understanding of the role of media exposure on the perception of immigration and public opinion more broadly.

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