Influence of the popular media on attitudes of pre-service primary school teachers in Spain towards refugees

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There are perceived economic and security concerns related to immigration and refugees among the population in many countries and the media sometimes convey an image of immigration and refugees as a social problem. It is therefore necessary to analyse that influence, especially in those who will have a direct relationship with the displaced, such as teachers. This study searched to determine the extent to which the frequency of use of different media influence attitudes towards refugees in 205 pre-service teachers, and to test whether attitudes related to cognitive factors influence affective attitudes towards refugees. A questionnaire has been used to measure the attitudes towards refugees in four dimensions: affective, economic labour, social, and immigration policy. The statistics used were descriptive analysis, analysis of variance (ANOVA) and analysis of simple and multiple linear regressions. The results suggest that cognitive factors such as attitudes towards economic labour, social, and immigration policy predict affective attitudes towards refugees. Regarding the use of media as a source of information about the refugee situation, the study indicates a clear influence of the media on attitudes in pre-service teachers, with more positive attitudes among those who did not use or made little use of the media.

Introduction

At present, new challenges arise from the recent financial crises and growing political instability in some countries, resulting in rising levels of displacement following the enforced hiatus caused by the Covid-19 pandemic and Russia's invasion of Ukraine. About the latter, the invasion has caused more than 5.5 million refugees to flee the country, to which must be added 7 million internally displaced persons (UNHCR, 2022). In the case of Spain, the latest information provided by government authorities indicates that some 35,000 students from Ukraine are enrolled in the Spanish education system (Borrás, 2022).

Increasingly, there are perceived economic and security concerns related to immigration among the population, which are sometimes reinforced through negative portrayals of migrants and refugees promoted by political leaders in some countries. It is therefore necessary to understand the psychological processes underlying attitudes towards migrants and refugees, the role of media portrayals of migrants, and the consequences of immigration attitudes and policies (Jetten & Esses, 2018). Although public opinion is found to be averse to the reception of migrants and asylum seekers, attitudes towards migrants and asylum seekers are multiple and multi-determined, with the theoretical literature pointing to, among other factors, ethnic or racial components, religious prejudice, or moral perceptions (Haslam & Holland 2012).

Several studies have examined European opinion based on public documents and surveys to try to determine what factors influence attitudes towards migrants and refugees. Thus, García-Faroldi (2017), after analysing *Eurobarometers* conducted by the European Commission in 11 countries, found that a large percentage of inhabitants felt that they had not benefited from their European Union membership, which may be related to the growth of extreme right-wing parties that adopt an anti-European and anti-immigrant stance. However, the results of his study confirm that there is a correlation between intercultural dialogue and tolerance, hence the relevance of studying national historical and cultural traditions in order to understand how prejudices develop (García-Faroldi, 2017). In this sense, in the midst of the economic crisis, a substantial increase in anti-foreigner sentiments was already observed after analysing the first three rounds of the European Social Survey, which was related to the group threat theory - that is, that increased immigration flows combined with more difficult economic conditions pose a threat to the host society, resulting in more negative attitudes towards immigration (Davidov & Meuleman, 2012).

The media sometimes convey an image of immigration and refugees as a social problem, linking both to insecurity and lack of employment, among other circumstances. The study conducted in Portugal by Padilla and Goldberg (2017) with university students shows that their representations of refugees are the product of ignorance and misinformation. At a time when the concept of *Fake News* has become globalised and is present in all media, it is necessary that phenomena such as immigration or refugees are dealt with in the classroom in ordinary teaching from an analytical perspective and absence of manipulation, which leads to the importance of teacher training from a socio-critical perspective. To this end, it is essential to detect possible negative attitudes towards migrants and refugees among teachers in order to implement awareness-raising programs. However, despite the role of teachers in the proper integration of migrants and refugees (Saldiray & Meydan, 2023), there are to date few studies that investigate attitudes towards migrants and refugees and the influence of the media on these attitudes in teachers and pre-service teachers. To address this issue, this research examines the attitudes towards refugees held by pre-service teachers at a Spanish university and the influence of the media on them.

Theoretical background

The role of false beliefs and perceived threat in attitudes toward refugees

Pedersen, Wat and Hansen (2006) stated that people who display negative attitudes towards asylum seekers tend to accept factually incorrect information (negative false beliefs). The results of their study showed that the total number of false beliefs correlated significantly with negative attitudes. The authors suggested that identifying and correcting false beliefs may have a significant effect on shifting these attitudes in a positive direction.

The existence of false beliefs towards asylum seekers and motivated reasoning, the idea that our judgment is based on our motivations, have also been linked. Croston and

Pedersen (2013) conducted an experiment in which participants were asked to read an article refuting false beliefs towards asylum seekers and then had to indicate their attitudes towards the author and their agreement or disagreement with the information provided. Those who disagreed with the author recalled the information less accurately, rating the author low on warmth and competence. Motivated reasoning therefore plays an important role in how stereotypes are applied, and information is processed. As the title of Croston and Pedersen's article aptly stated, "Tell me what I want to hear".

Renner et al. (2017) following their research with participants from Austria, Germany, and Slovakia, claimed that perceived cultural threat is the strongest predictor of individual differences in attitudes of the European native population towards forced migration, above perceived economic threat and racist attitudes. Culture shock or fear of the replacement of one's own culture by a foreign one certainly influences attitudes towards migration, even more so when significant differences are perceived between one's own culture and that of the migrants. Patriotism and threat have also been found to predict attitudes towards immigration, as patriotism influences the production of threat and threat drives anti-immigrant attitudes (Willis-Esqueda, Hazel & Pedroza, 2017).

The perception of refugees as a threat has also been studied in Turkey by Erisen (2015), finding that emotions trigger certain behavioural effects on political interest and threat perception, and these effects are influenced by the attributes of the individual's social network. A larger social network size (number of people with whom one debates) promotes greater interest in learning about the issue, as opposed to those who only socialise with ideologically similar individuals. Thus, the size of the social network conditions the influence of manipulated fear on the degree of perceived threat.

It is useful at this point to introduce the concepts of *realistic threat* and *symbolic threat*. Navas, Cuadrado and López-Rodríguez (2012) defined the former as "the perception of competition between ingroup and outgroup for scarce resources, such as employment, social services, education or healthcare", and with respect to the latter they pointed out that it occurs "because members of the ingroup perceive that the outgroup has different values, beliefs or attitudes that are not in line with their own and, therefore, these are in danger of being altered by those of the outgroup" (p. 477).

In Spain, attitudes towards refugees amongst future teachers have been analysed through the perception of real and symbolic threat and the affective reactions they experience (Cala, Soriano-Ayala & López-Martínez, 2018). While the results show indifference towards refugee-related issues, a correlation was observed between attitudes and inclusive European citizenship, with lower perceived threat appearing as a predictor of greater inclusive citizenship.

The economic crisis of recent years has also led to migrants and refugees being perceived as additional threats in the labour market for residents. However, Bello (2017) has investigated whether intercultural values can modify the effects of economic factors on prejudice in times of crisis, showing that interculturalism plays a much larger role than economic factors in influencing attitudes.

The influence of the media on attitudes towards refugees and migrants

Since 2013, print media, television, Internet, and social media have reflected the "refugee crisis" from different perspectives. Some research establishes that the media can have both a positive and negative influence on the processes of dialogue and interaction between the host community and migrants (Galikhuzina, Penkovtsev & Shibanova, 2016), finding a direct relationship between the frequency and forms of media consumption and attitudes towards immigration (Álvarez-Gálvez, 2014a; Álvarez-Gálvez, 2014b). Thus, it is noted that those who are more averse to immigration show a lower degree of media consumption and are more gullible to media information related to immigration, mostly recalling images of crime and problems caused by immigrants. Lower consumption would make them more manipulable in the face of media information on the subject.

On the other hand, the impact of negative comments about certain groups on the Internet seems to be evident. Ziegele, Koehler and Weber (2018) experimentally studied the effects of online users' negative and hateful comments about refugees on the amount of money readers donated to a refugee aid organisation and an organisation supporting homeless people. The results indicated that negative and hateful online comments have an indirect negative effect on the amount of money donated to refugees, resulting in less money being donated.

Perhaps the greatest illustration of media influence on attitudes towards refugees and immigration can be linked to the publication of photographer Nilüfer Demir's photograph of Alan Kurdi. Alan Kurdi was a three-year-old Syrian boy who died on 2 September 2015 trying to reach Europe in an inflatable boat (*The Guardian*, 2015). The photograph of his body on a Turkish beach literally went around the world through the media and social media, initiating a change in attitudes towards refugees, making the plight of migrants visible and driving a wave of solidarity towards them.

The worldwide media attention caused the photograph to go viral and the "refugee crisis" came to have a name and a face. Mangana (2017), argued that the image influenced media coverage of the refugee situation in the following moments, serving as a "wake-up image". While the photograph initially provoked humanitarian responses and political actions aimed at supporting refugees, memes based on the image later appeared online, as Durham (2018) pointed out.

Wallace (2018) has studied the treatment of the Syrian 'refugee crisis' in Canadian print media in the period from 2012 to 2016. The author noted that the treatment of the conflict dominated refugee coverage in the pre-election period but shifted after the publication of Alan Kurdi's photograph towards a more humanising portrayal of refugee families and the circumstances of their resettlement. Similar results were obtained by Boeva (2016), following analyses of the British and US liberal and conservative press in September 2015, with positive portrayals of refugees.

However, and as Streitwieser and Brück (2018) indicated for the case of Germany, if the reception of refugees had been characterised during late 2015 and early 2016 by media

support, when the number of refugees continued to increase, media language linked the reception to the concept of 'compassion fatigue' and later to that of a 'refugee tsunami'. Goodman (2017) analysed how constructions of events in major UK newspapers changed over the course of specific events in Europe. Initially the refugee situation was seen as 'problematic', shifting after the publication of Alan's photograph as positive, with refugees being worthy of inclusion. However, these representations were contingent on the unfolding of other events in Europe, such as the terrorist attacks in Paris on 13 November 2015.

Dempsey and McDowell (2019) examined the discourse and images shared by European media and social networks between January 2015 and December 2016. If refugees were initially portrayed as human beings migrating to Europe, some media quickly equated their arrival with natural disasters and, eventually, geopolitical security threats, representing them as the 'Other' and as threatening non-human entities.

Smets and Bozdağ (2018) pointed out that social perception is shaped by the interaction of online and traditional media representations. Media representations also influence public perceptions of immigrants and refugees, as well as immigration policies. Recent research reveals how the media portray migrants and refugees today. Wren (2017) highlighted the media's portrayal of refugees as economic migrants, asylum seekers, health tourists and bogus asylum seekers, incentivising a threatening view of refugees.

Esses, Medianu and Lawson (2013) suggested that the media can exploit uncertainty related to immigration to create a crisis mentality, in which migrants and refugees are portrayed as "enemies at the gates" seeking to invade Western nations. The results of their analysis of different media reveal that they are portrayed as a potential threat to society, as transmitters of disease or as terrorists, leading to both their dehumanisation and their justification. It has also been observed how the crisis discourse obscures the real reasons for migration, shifting the focus to the supposed advantages or disadvantages refugees bring to their host country in terms of three issues: economic productivity, state security and gender relations (Holzberg, Kolbe, & Zaborowski, 2018). Kadianaki et al. (2018) also noted the media construction of migrants in economic and humanitarian terms, portraying them as victims and assets to the economy in favourable representations and as a threat to the nation's own economy, security, culture, and existence. In relation to this, Jacobs et al. (2018), warned that covering information on immigration from an economic or security perspective has consequences for public opinion, as some citizens may be strengthened in their beliefs that the presence of migrants leads to insecurity, risk, and erosion of the economy.

On the other hand, social networks and their response to social events are characterised by the anonymity of uninhibited personal expressions. Nerghes and Lee (2018) argued that media, political statements, and social media discussions about the 'refugee crisis' shape the ways in which individuals and societies respond to the plight of displaced people. In their analysis of the social network *Twitter*, they observed that the *hashtags* "refugee" and "immigrant" are used interchangeably to refer to the same groups of people, with the tweets related to the hashtag "refugee" being more positive. The same results

were obtained by the same authors when analysing hashtags on the social network *YouTube*. The authors pointed out that the labels "refugee" and "immigrant" become social categorisation devices to delimit "the population" from "the others", and to distinguish between those who deserve welcome and those who constitute a threat to be rejected.

Given the current emergency in Ukraine, it is necessary to investigate the possible factors that influence attitudes towards refugees in different sectors of the population, especially those who will have a direct relationship with the displaced, such as teachers. Therefore, the main objectives of this study are as follows:

1. To determine the extent to which the use and frequency of use of different media (TV, press, web sites, *YouTube*, *Twitter* and *Facebook*) influence attitudes of pre-service teachers towards refugees.
2. To test whether attitudes related to cognitive factors in the economic labour, social, and immigration policy dimensions influence pre-service teachers' affective attitudes towards refugees.

Materials and methods

Participants

The participants in the study were 205 students of the bachelor degree in Primary Education at the University of Oviedo (Spain). In terms of gender, 139 were women and 66 were men. The large difference in participation according to gender is explained by the high representation of female students in this degree in Spanish universities, with 67.8% females in the 2020-2021 academic year according to official data (MU, 2022). Two age groups were established: 126 of the participants were aged between 18 and 20, and 79 of them were aged 21 or over. Regarding pre-university education, 139 studied in public schools while 66 studied in private or state-subsidised schools. The research was carried out during the 2018-2019 academic year, specifically in February.

Procedure

To conduct the research, permission was sought from the ethics committee of the Faculty of Teacher Training and Education of the University of Oviedo and the personal permission of the participating students for the use of the data, given that they were of legal age. The questionnaires were submitted in physical paper format and were completed in pen.

Instrument

A questionnaire on student perception of and attitudes towards refugees (PREFSIR-1), consisting of three blocks of questions, has been used as a measurement instrument and has already been shown to be valid (San Pedro & López, 2017). Block A, called "Attitudes", comprises 24 items associated with students' perceptions of refugees and their situation in terms of affective, economic labour, social and immigration policy. The items

are answered on a five point Likert-type scale, with 1= *strongly disagreeing* and 5= *strongly agreeing.*

The items in group A have been grouped into four dimensions called "Affective", "Economic labour", "Social" and "Immigration policy" (see Appendix). The "Affective" dimension measures students' attitudes towards refugees from the point of view of personal relationships. The "Economic labour" dimension includes a series of items related to the possible scenarios that may arise after the arrival of refugees in the labour market and in the context of the economic crisis. This dimension should be related to the concept of perceived real threat discussed above. The "Social" dimension measures students' perceptions of the level of integration of refugees from a social and cultural point of view. This dimension is related to the concept of symbolic threat. The last dimension, "Immigration policy", groups together different items referring to students' beliefs about what the role of different countries should be in terms of refugee reception policies. Negative statements were reverse-coded and then averaged with the positive ones. Thus, higher values on the scale indicate more positive attitudes towards refugees.

Block B, called "Media", includes six items investigating the sources of the information students receive about refugees and their respective frequency, considering television, the press, Internet websites, *YouTube, Twitter,* and *Facebook.* The items were also answered on a Likert-type scale of 1 to 5, with 1 being *not at all* and 5 being *very much,* to find out the personal perception of the time spent using the media for information. Finally, Block C is made up of social and personal questions regarding age, type of school where compulsory education was studied and place of residence.

Statistical analysis

Once the items in Block A had been grouped into the four dimensions mentioned above, a descriptive analysis was carried out at, applying tests of central tendency and dispersion (mean, standard deviation, variance, skewness, and kurtosis). Simple and multiple linear regression analyses were performed to check whether the attitudes related to the "Economic labour", "Social" and "Immigration policy" dimensions predict the "Affective attitudes" dimension.

An analysis of variance (ANOVA) was also conducted to find out whether the frequency of use of the different media influenced the scores on the different dimensions related to attitudes. For the application of the ANOVA, the media items were readjusted into three groups: those who stated that they do not use the media (*None*), those who consider that they consult them moderately (*Somewhat*), and those who consider that they use them a lot or quite a lot (*A lot*). This grouping into three was done for operational reasons and to simplify the data.

Cohen's *d* was also used to determine the effect size, considering *d* = small effect (>=.15 and <.40), medium effect (>=.40 and <.75), large effect (>=.75 and <1.10), and very large effect (>=1.10 and <1.45).

The data were processed and analysed using the *SPSS.27* statistical package for *Windows* and *G*Power 3.1* for statistical power and effect size estimation.

Results

Analysis of the influence of the media on attitudes towards refugees

An analysis of variance (ANOVA) was conducted to find out whether the personal perception of the frequency of media use had any influence on the participants' responses with respect to the four dimensions studied.

TV Influence
Results related to the frequency of use of TV as a source of information about refugees show the existence of statistically significant differences between those who say they watch TV "None" and those who watch TV "A lot", in the dimension "Attitudes towards economic and labour issues", with those who say they watch TV "None" scoring higher ($F_{(3, 202)}$ = 14.821; $p < 0.05$; d = 1.46; MD = .791). Statistically significant results are also observed in the same dimension between those who watch TV "Somewhat" and "A lot", with those who say they watch TV "Somewhat" scoring higher ($F_{(3, 202)}$ = 14.821; $p < .05$; d = .75; MD = .431).

Continuing with the frequency of TV use, the results show statistically significant differences in the dimension "Attitudes towards Social" between those who watch TV "None" and "A lot", with those who say they do not watch TV scoring higher ($F_{(3, 202)}$ = 20.943; $p < .05$; d = 1.95; MD = .637). There are also statistically significant differences in this dimension between those who watch TV "Somewhat" and "A lot", with those who watch TV "Somewhat" scoring higher ($F_{(3, 202)}$ = 20.943; $p < .05$; d = .89; MD = .388).

As for the dimension "Attitudes towards Immigration Policy" and its relationship with frequency of TV viewing, the results show statistically significant differences between those who watch TV "Somewhat" and "A lot", with those who watch TV "Somewhat" scoring higher ($F_{(3, 202)}$ = 9.765; $p < .05$; d = .60; MD = .416). See Table 1.

Press influence
Relating to the press, the results indicate statistically significant differences in the dimension "Attitudes towards Economic labour" between those who read it "Somewhat" and those who read it "A lot", with those who read it "Somewhat" scoring higher ($F_{(3, 202)}$ = 7.075; $p < .05$; d = .69; MD = .409).

Statistically significant differences are observed in the dimension "Attitudes towards the Social" between those who read the press "Somewhat" and those who read it "A lot", with those who read it "Somewhat" scoring higher ($F_{(3, 202)}$ = 4.706; $p < .05$; d = .57; MD = .253). See Table 2.

Table 1: Statistically significant pairwise differences and
effect sizes according to the influence that television may present.

Dimensions	Pairs	$F_{(3, 202)}$	MD	p	d
Eco.Lab.	None[1] - Somewhat[2]		.359[1]	.699	
	None[1] – A lot[3]	148.21	.791[1]	.029	1.46
	Some[2] - A lot[3]		.431[2]	.000	.75
Social	None[1] - Somewhat[2]		.248[1]	.806	
	None[1] – A lot[3]	20.943	.637[1]	.015	1.95
	Somewhat[2] - A lot[3]		.388[2]	.000	.89
Immi.Pol.	None[1] - Somewhat[2]		.390[1]	.842	
	None[1] – A lot[3]	9.765	.806[1]	.082	
	Somewhat[2] - A lot[3]		.416[2]	.000	.60

Legend: F = Empirical ANOVA value (numbers in subscript the degrees of freedom); MD = Mean Difference (number in superscript indicates in favour of which variable the highest score is); p = Statistical probability assuming H_0 is true; d = Effect size (Cohen's d test, only in those comparisons where the p value has been statistically significant).

Table 2: Statistically significant pairwise differences and
effect sizes as a function of the influence that the press may present.

Dimensions	Pairs	$F_{(3, 202)}$	MD	p	d
Eco.Lab.	None[1] - Somewhat[2]		.147[2]	.493	
	None[1] – A lot[3]	7.075	.261[1]	.132	
	Somewhat[2] - A lot[3]		.409[2]	.001	.69
Social	None[1] - Somewhat[2]		.119[2]	.441	
	None[1] – A lot[3]	4.706	.134[1]	.538	
	Somewhat[2] - A lot[3]		.253[2]	.010	.57
Immi.Pol.	None[1] - Somewhat[2]		.012[2]	1.00	
	None[1] – A lot[3]	2.716	.283[1]	.204	
	Somewhat[2] - A lot[3]		.296[2]	.074	

Legend: F = Empirical ANOVA value (numbers in subscript the degrees of freedom); MD = Mean Difference (number in superscript indicates in favour of which variable the highest score is); p = Statistical probability assuming H_0 is true; d = Effect size (Cohen's d test, only in those comparisons where the p value has been statistically significant).

Internet sites influence
In relation to the use of Internet websites as a source of information about refugees, the results indicate statistically significant differences in the dimensions "Attitudes towards Economic labour", "Attitudes towards Social" and "Attitudes towards Immigration policy".

Regarding "Attitudes towards Economic labour", statistically significant differences can be seen between those who consult them "None" and those who consult them "A lot", with those who consult them "None" scoring higher ($F_{(3, 202)}$ = 12.773; $p < .05$; d = .90; MD = .495); and between those who consult them "Somewhat" and those who consult them "A lot", with those who consult them "Somewhat" scoring higher ($F_{(3, 202)}$ = 12.773; $p < .05$; d = .84; MD = .417).

With respect to "Attitudes towards Social issues", statistically significant differences are observed between those who consult them "None" and those who consult them "A lot", with those who consult them "None" scoring higher ($F_{(3, 202)}$ = 8.475; $p < .05$; $d = .86$; MD = .339); and between those who consult them "Somewhat" and those who consult them "A lot", with those who consult them "Somewhat" scoring higher ($F_{(3, 202)}$ = 8.475; $p < .05$; $d = .54$; MD = .242).

Finally, in relation to the dimension "Attitudes towards Immigration policy", statistically significant differences appear between those who consult them "None" and those who consult them "A lot", with those who consult them "None" scoring higher ($F_{(3, 202)}$ = 7.691; $p < .05$; $d = .69$; MD = .448); and between those who consult them "Somewhat" and those who consult them "A lot", with those who consult them "Somewhat" scoring higher ($F_{(3, 202)}$ = 7.691; $p < .05$; $d = .57$; MD = .397). See Table 3.

Table 3: Statistically significant pairwise differences and effect sizes according to the influence of Internet press sites on the influence of Internet press websites

Dimensions	Pairs	$F_{(3, 202)}$	MD	p	d
Eco.Lab.	None[1] - Somewhat[2]		.078[1]	1.00	
	None[1] – A lot[3]	12.773	.495[1]	.000	.90
	Some[2] - A lot[3]		.417[2]	.000	.84
Social	None[1] - Somewhat[2]		.097[1]	.784	
	None[1] – A lot[3]	8.475	.339[1]	.001	.86
	Somewhat[2] - A lot[3]		.242[2]	.004	.54
Immi.Pol.	None[1] - Somewhat[2]		.051[1]	1.00	
	None[1] – A lot[3]	7.691	.448[1]	.005	.69
	Somewhat[2] - A lot[3]		.397[2]	.002	.57

Legend: F = Empirical ANOVA value (numbers in subscript the degrees of freedom); MD = Mean Difference (number in superscript indicates in favour of which variable the highest score is); p = Statistical probability assuming H_0 is true; d = Effect size (Cohen's d test, only in those comparisons where the p value has been statistically significant).

YouTube influence
No statistically significant data are found to show an influence of frequency of *YouTube* use on attitudes towards refugees.

Twitter influence
The results show statistically significant differences relating frequency of use to higher scores on the dimensions "Attitudes towards Economic labour", "Attitudes towards Social" and "Attitudes towards Immigration policy".

With regard to the dimension "Attitudes towards Economic labour", statistically significant differences are observed between the participants who say that they consult it "None" and those who consult it "A lot", with those who consult it "None" scoring higher ($F_{(3, 202)}$ = 6.805; $p < .05$; $d = .53$; MD = .308); and between those who consult it "Somewhat" and those who consult it "A lot", with those who consult it "Somewhat" scoring higher ($F_{(3, 202)}$ = 6.805; $p < .05$; $d = .79$; MD = .468).

In the dimension "Attitudes towards the Social" statistically significant differences appear between those who consult it "Somewhat" and those who consult it "A lot", with those who consult it "Somewhat" scoring higher ($F_{(3, 202)}$ = 5.128; p < .05; d = .77; MD = .314).

Finally, in the dimension "Attitudes towards Immigration policy", the results show statistically significant differences between those who consult it "Somewhat" and those who consult it "A lot", with those who consult it "Somewhat" scoring higher ($F_{(3, 202)}$ = 4.452; p < .05; d = .65; MD = .445). See Table 4.

Table 4:. Statistically significant pairwise differences and
effect sizes as a function of the influence Twitter may present.

Dimensions	Pairs	$F_{(3, 202)}$	MD	p	d
	None[1] - Somewhat[2]		.160[2]	.323	
Eco.Lab.	None[1] – A lot[3]	6.805	.308[1]	.025	.53
	Somewhat[2] - A lot[3]		.468[2]	.001	.79
	None[1] - Somewhat[2]		.117[2]	.380	
Social	None[1] – A lot[3]	5.128	.197[1]	.084	
	Somewhat[2] - A lot[3]		.314[2]	.005	.77
	None[1] - Somewhat[2]		.127[2]	.840	
Immi.Pol.	None[1] – A lot[3]	4.452	.318[1]	.064	
	Somewhat[2] - A lot[3]		.445[2]	.011	.65

Legend: F = Empirical ANOVA value (numbers in subscript the degrees of freedom); MD = Mean Difference (number in superscript indicates in favour of which variable the highest score is); p = Statistical probability assuming H_0 is true; d = Effect size (Cohen's d test, only in those comparisons where the p value has been statistically significant).

Facebook influence
The results show statistically significant differences in the dimensions "Attitudes towards Economic labour", "Attitudes towards Social" and "Attitudes towards Immigration policy".

The results related to the dimension "Attitudes towards Economic labour" reveal statistically significant differences between those who say they consult it "Somewhat" and those who consult it "A lot", with those who consult it "Somewhat" scoring higher ($F_{(3, 202)}$ = 10.086; p < .05; d = .77; MD = .445).

With respect to the dimension "Attitudes towards the Social", statistically significant differences are observed between those who consult it "None" and those who consult it "A lot", with those who consult it "None" scoring higher ($F_{(3, 202)}$ = 11.204; p < .05; d = .51; MD = .219); and between those who consult it "Somewhat" and those who consult it "A lot", with those who consult it "Somewhat" scoring higher ($F_{(3, 202)}$ = 11.204; p < .05; d = .82; MD = .358).

Finally, with regard to the dimension "Attitudes towards Immigration policy", statistically significant differences were found between those who consulted it "Somewhat" and those who consulted it "None", with those who consulted it "Somewhat" scoring higher ($F_{(3, 202)}$

= 9.785; $p < .05$; $d = .42$; MD = .503); and between those who consult it "Somewhat" and those who consult it "A lot", with those who consult it "Somewhat" scoring higher ($F_{(3, 202)}$ = 9.785; $p < .05$; $d = .74$; MD = .503). Table 5 shows the statistically significant pairwise differences.

Table 5: Statistically significant pairwise differences and
effect sizes according to the influence that Facebook can present.

Dimensions	Pairs	$F_{(3, 202)}$	MD	p	d
Eco.Lab.	None[1] - Somewhat[2]		.226[2]	.094	
	None[1] – A lot[3]	10.086	.218[1]	.163	
	Somewhat[2] - A lot[3]		.445[2]	.000	.77
Social	None[1] - Somewhat[2]		[2]	.244	
	None[1] – A lot[3]	11.204	.219[1]	.034	.51
	Somewhat[2] - A lot[3]		.358[2]	.000	.82
Immi.Pol.	None[1] - Somewhat[2]		.321[2]	.029	.42
	None[1] – A lot[3]	9.785	.183[1]	.506	
	Somewhat[2] - A lot[3]		.503[2]	.000	.74

Legend: F = Empirical ANOVA value (numbers in subscript the degrees of freedom); MD = Mean Difference (number in superscript indicates in favour of which variable the highest score is); p = Statistical probability assuming H_0 is true; d = Effect size (Cohen's d test, only in those comparisons where the p value has been statistically significant).

Analysis of the influence of attitudes towards economic labour, social and immigration policy on affective attitudes

Simple linear regression
The first analysis revealed that "Attitudes towards Social" predicts "Affective Attitudes" with $R^2 = .40$, indicating a good linear relationship.

The second analysis shows that "Attitudes towards Immigration policy" predicts "Affective Attitudes" with $R^2 = .42$, with a good linear relationship.

The third analysis indicates that "Attitudes towards Economic labour" predict "Affective Attitudes" with $R^2 = .33$, with a good linear relationship.

Multiple linear regression
The following regression analysis has been a stepwise multiple regression, introducing as predictor variables, "Attitudes towards Immigration policy", "Attitudes towards Social" and "Attitudes towards Economic labour", and as dependent variable "Affective Attitudes". The results show that the best fitting model is the third one (all three variables) with $R^2 = .54$. See Table 6.

Table 6: Linear regression taking attitudes towards immigration
policy, attitudes towards social and attitudes towards economic
labour as predictor variables and affective attitudes as dependent variable

	β	t	p
Attitude towards immigration policy	.343	5.077	.000
Attitude towards the social	.346	5.771	.000
Attitude towards economic and labour issues	.172	2.640	.009

Legend: β = beta; *t* = empirical Student's *t-value*; *p* = statistical probability assuming H_0 is true.

Discussion

The objectives of this study were to determine, on the one hand, the influence of the frequency and use of the media on the attitudes of pre-service teachers towards refugees and, on the other hand, to test the influence of attitudes towards economic labour, social and immigration policy on affective attitudes towards refugees. The results suggest that cognitive factors such as attitudes towards economic labour, social and immigration policy predict affective attitudes towards refugees, in line with Croucamp et al. (2017). In the present study, attitudes towards social predict affective attitudes over attitudes towards economic labour, which would indicate that the perceived cultural threat, related to symbolic threat, that had been associated with this dimension would be the strongest predictor of differences in population attitudes and forced migration, as indicated by Renner et al. (2017). However, the results suggest that the best predictive model of affective attitudes is the one formed by attitudes towards economic labour, social, and immigration policy as a whole.

Regarding the use of media as a source of information about the refugee situation, our study indicates a clear influence of the media on attitudes, which aligns with the results of the first study conducted (San Pedro & López, 2017). Students who reported more favourable attitudes towards refugees in the pre-test questionnaires did not use or made little use of the media considered (television, newspapers, *YouTube*, Internet websites, *Twitter,* and *Facebook*) as a source of information to approach the topic of refugees. This result partly contradicts the study by Álvarez-Gálvez (2014b), which indicated a lower use of the media among people who are more reluctant towards the phenomenon of immigration.

YouTube appears to have no effect on students' affective attitudes towards refugees, with the media with the least influence on these attitudes being the press. The questionnaire did not indicate any differentiation between print and online press, although given the different results obtained in the two dimensions, students may have related it to the former. The other media considered in the study, TV, Internet, *Twitter* and *Facebook*, do show a clear influence on attitudes towards economic labour, social and immigration policy, with students who do not consult them or consult them to some extent showing greater positive affective attitudes. These results are in line with Jacobs et al. (2018), as the treatment of information on immigration, whether forced or not, from an economic or security perspective reaffirms negative public beliefs. Similarly, Nerghes and Lee (2018)

noted that media and social media discussions shape the ways in which individuals and societies view refugees, which relates to the results obtained in this study in the sense that the lower the frequency of media use for information on the topic, the more affective attitudes are found.

Phenomena such as immigration or refugees should therefore be dealt with in the classroom in ordinary teaching from an analytical perspective, free of manipulation. In this sense, there is a need to promote teacher training that is free of prejudices, based on real life and aimed at developing thinking and conflict resolution, to prepare students for participation in a democratic society. It would therefore be advisable to provide both pre-service teachers and students in compulsory education with appropriate tools for the promotion of critical thinking when approaching the media. Therefore, in future research in the context of undergraduate subjects such as social studies teaching or ICT applied to teaching and learning, it becomes important to further investigate media literacy. For example, conduct analyses of classroom activities in small groups tasked with the use and cross-checking of primary and secondary sources to achieve authentic media literacy. Similarly, ongoing research into the application of programs that use contextualisation and historical empathy and the use of primary testimonies about refugees, can contribute to increasing positive attitudes towards refugees in future teachers (San Pedro & López, 2017).

Among the general limitations of the present study, the limited sample size, which limits the generalisability of the results, and the non-random nature of the sample, should be recognised. Future research using a larger sample of pre-service teachers from other universities and regions may be necessary to establish more accurate and valid results. Further research, such as focus groups or one-on-one interviews, using qualitative methods should be conducted to explore possible drivers of attitudes towards refugees. Finally, more specific testing of other variables is needed, for example, the role that beliefs and ideologies may play in attitudes towards refugees. It would therefore be necessary to refine the instrument by including these variables and specifying the items on media use and consumption in more categories (such as what type of press and television shows are consumed).

Conclusions

The results of our study indicate that cognitive factors, such as attitudes towards economic labour (related to perceived real threat), social (related to symbolic threat) and immigration policy significantly influence affective attitudes towards refugees held by prospective teachers. Likewise, the media, especially television, the Internet, and social networks such as *Twitter* and *Facebook*, have a significant influence on attitudes towards economic labour, social and immigration policy, dimensions that are predictors of affective attitudes. This suggests the need to introduce educational programs in the training of future teachers aimed at both the reduction of possible prejudices towards potentially vulnerable groups such as refugees, and the critical analysis of information provided by the media.

References

Álvarez-Gálvez, J. (2014a). Television news consumption and public attitudes towards immigration: A multi-level approach [Consumo de información televisiva y actitudes publicas hacia la inmigración: un enfoque multinivel]. *International Journal of Social Psychology*, 29(3), 401-429. https://doi.org/10.1080/02134748.2014.972704

Álvarez-Gálvez, J. (2014b). El consumo de medios informativos y las actitudes hacia los inmigrantes [Media exposure and attitudes towards immigrants]. *Revista Española de Investigaciones Sociológicas*, 145, 3-24. https://doi.org/10.5477/cis/reis.145.3

Bansak, K., Hainmueller, J. & Hangartner, D. (2016). How economic, humanitarian, and religious concerns shape European attitudes toward asylum seekers. *Science*, 354, 217-222. https://doi.org/10.1126/science.aag2147

Bello, V. (2017). Interculturalism as a new framework to reduce prejudice in times of crisis in European countries. *International Migration*, 55(2), 23-38. https://doi.org/10.1111/imig.12262

Boeva, A. (2016). Discursive construction of refugees, migrants and asylum seekers in British and American news sources. *Procedia - Social and Behavioral Sciences*, 236, 53-58. https://doi.org/10.1016/j.sbspro.2016.12.018

Borrás, M. (2022). *España está entre los países de la UE con más niños de Ucrania en sus escuelas* [Spain is among the EU countries with the most Ukrainian children in school]. EuroEFE: Euroactiv, 13 July. https://euroefe.euractiv.es/section/educacion-y-cultura/news/espana-esta-entre-los-paises-de-la-ue-con-mas-ninos-de-ucrania-en-sus-escuelas/

Cala, V. C., Soriano-Ayala, E., & López-Martínez, M. J. (2018). Actitudes hacia personas refugiadas y ciudadanía europea inclusiva. Análisis para una propuesta educativa intercultural con el profesorado en formación [Attitudes toward refugees and inclusive European citizenship. Analysis for an intercultural educational proposal with teachers in training]. *RELIEVE*, 24(2), article M1. https://doi.org/10.7203/relieve.24.2.13320

Croston, J. & Pedersen, A. (2013). 'Tell me what I want to hear': Motivated recall and attributions in media regarding asylum seekers. *Australian Journal of Psychology*, 65(2), 124-133. https://doi.org/10.1111/ajpy.12012

Croucamp, C. J., O'Connor, M., Pedersen, A. & Breen, L. J. (2017). Predicting community attitudes towards asylum seekers: A multi-component model. *Australian Journal of Psychology*, 69:4, 237-246, https://doi.org/10.1111/ajpy.12149

Dempsey, K. E. & McDowell, S. (2019). Disaster depictions and geopolitical representations in Europe's migration 'Crisis'. *Geoforum*, 98, 153-160. https://doi.org/10.1016/j.geoforum.2018.11.008

Durham, M. G. (2018). Resignifying Alan Kurdi: News photographs, memes, and the ethics of embodied vulnerability. *Critical Studies in Media Communication*, 35(3), 240-258. https://doi.org/10.1080/15295036.2017.1408958

Erisen, C. (2015). Emotions, social networks, and Turkish political attitudes on the Syria crisis. *Southeast European and Black Sea Studies*, 15(1), 1-18. https://doi.org/10.1080/14683857.2015.1007740

Esses, V. M., Medianu, S. & Lawson, A. S. (2013). Uncertainty, threat, and the role of the media in promoting the dehumanization of immigrants and refugees. *Journal of Social Issues*, 69(3), 518-536. https://doi.org/10.1111/josi.12027

Galikhuzina, R. G., Penkovtsev, R. V. & Shibanova, N. A. (2016). The image of refugees in the communication mass media: A source of conflict or cooperation? *Academy of Marketing Studies Journal*, 20(1), 27-32. https://www.proquest.com/openview/0c905eff2ac486005d41d734045ad0d5/1

García-Faroldi, L. (2017). Determinants of attitudes towards immigration: Testing the influence of interculturalism, group threat theory and national contexts in time of crisis. *International Migration*, 55(2), 10-22. https://doi.org/10.1111/imig.12261

Goodman, S., Sirriyeh, A. & McMahon, S. (2017). The evolving (re)categorisations of refugees throughout the "refugee/migrant crisis". *Journal of Community & Applied Social Psychology*, 27(2), 105-114. https://doi.org/10.1002/casp.2302

Haslam, N. & Holland, E. (2012). Attitudes towards asylum seekers: The Australian experience. In D. Bretherton & N. Balvin (Eds.), *Peace psychology in Australia*. Boston, MA: Springer, pp. 107-120. https://link.springer.com/chapter/10.1007/978-1-4614-1403-2_7

Holzberg, B., Kolbe, K. & Zaborowski, R. (2018). Figures of crisis: The delineation of (un)deserving refugees in the German media. *Sociology*, 52(3), 534-550. https://doi.org/10.1177/0038038518759460

Jacobs, L., Damstra, A., Boukes, M. & De Swert, K. (2018). Back to reality: The complex relationship between patterns in immigration news coverage and real-world developments in Dutch and Flemish newspapers (1999-2015), *Mass Communication and Society*, 21(4), 473-497. https://doi.org/10.1080/15205436.2018.1442479

Jetten, J. & Esses, V. M. (2018). The reception of immigrants and refugees in Western countries: The challenges of our time. *Journal of Social Issues*, 74(4), 662-673. https://doi.org/10.1111/josi.12292

Kadianaki, I., Avraamidou, M., Ioannou, M. & Panagiotou, E. (2018). Understanding media debate around migration: The relation between favorable and unfavorable representations of migration in the Greek Cypriot press. *Peace and Conflict: Journal of Peace Psychology*, 24(4), 407-415. https://doi.org/10.1037/pac0000285

Kędra, J. & Sommier, M. (2018). Children in the visual coverage of the European refugee crisis: A case study of the World Press Photo 2016. *Journal of Applied Journalism & Media Studies*, 7(1), 37-58. https://doi.org/10.1386/ajms.7.1.37_1

Liebe, U., Meyerhoff, J., Kroesen, M., Chorus, C. & Glenk, K. (2018). From welcome culture to welcome limits? Uncovering preference changes over time for sheltering refugees in Germany. *PLoS ONE* 13(8), article e0199923. https://doi.org/10.1371/journal.pone.0199923

Mangana, R. (2018). Aylan Kurdi *como imagem-despertador* da crise dos refugiados: O enquadramento da imprensa ibérica [Aylan Kurdi as a wake-up call for the refugee crisis: The framing of the Iberian press]. *Revista Estudos em Comunicação*, 26(2), 61-79. https://doi.org/10.20287/ec.n26.v2.a05

Ministerio de Universidades [Ministry for Universities] (MU) (2022). *Número de estudiantes en las universidades españolas* [Number of students at Spanish universities]. Secretaría General Técnica, Subdirección General de Estadística y Estudios. https://www.universidades.gob.es/estadistica-de-estudiantes/

Navas, M., Cuadrado, I. & López-Rodríguez, L. (2012). Fiabilidad y evidencias de validez de la Escala de Percepción de Amenaza Exogrupal (EPAE) [Reliability and evidence of validity of the Exogroup Threat Perception Scale (EPAE)]. *Psicothema*, 24, 477-482. https://www.redalyc.org/pdf/727/72723439022.pdf

Nerghes, A. & Lee, J.-S. (2018). The refugee/migrant crisis dichotomy on Twitter: A network and sentiment perspective. In *WebSci '18: Proceedings of the 10th ACM Conference on Web Science*, 271-280. https://doi.org/10.1145/3201064.3201087

Neriman, D., Hanquinet, L. & Sila, N. (2017). Perceptions of diversity and attitudes of tolerance in the 'fragmented' U.K. *Journal of Ethnic and Migration Studies*, 43(4), 674-692. https://doi.org/10.1080/1369183X.2016.1249053

Padilla, B. & Goldberg, A. (2017). Migrants, refugees and asylum seekers in Portugal and Spain. Challenges for public health policies in a comparative perspective. In *15th Annual ESPAnet Conference: New Horizons of European Social Policy: Risks, Opportunities and Challenges.* https://ciencia.iscte-iul.pt/publications/migrants-refugees-and-asylum-seekers-in-portugal-and-spain-challenges-for-public-health-policies-in/40976

Pedersen, A., Wat, S. & Hansen, S. (2006). The role of false beliefs in the community's and the federal government's attitudes toward Australian asylum seekers. *Australian Journal of Social Issues*, 41(1), 105-124. https://search.informit.org/doi/10.3316 [also https://researchportal.murdoch.edu.au/esploro/outputs/journalArticle/The-role-of-false-beliefs-in/991005542359007891]

Plener, P. L., Groschwitz, R. C., Brähler, E., Sukale, T. & Feger, J. M. (2017). Unaccompanied refugee minors in Germany: Attitudes of the general population towards a vulnerable group. *European Child & Adolescent Psychiatry*, 26, 733-742. https://doi.org/10.1007/s00787-017-0943-9

Renner, W., Thomas, A., Mikulajova, M. & Newman, D. (2017). Assessing attitudes towards asylum seekers: Comparative findings from Austria, Germany, and Slovakia. *International Journal of Business and Social Research*, 7(12), 10-22. https://doi.org/10.18533/ijbsr.v7i12.1081

Saldıray, A. & Meydan, A. (2023). Inclusive education for refugee children: Preservice social studies teachers and their critical thinking skills. *Issues in Educational Research*, 33(1), 327-351. http://www.iier.org.au/iier33/saldiray.pdf

San Pedro, M. B. & López, I. (2017). Empatía histórica y aumento de la tolerancia hacia la figura de los refugiados: Estudio con profesorado en formación [Historical empathy and increased tolerance towards the figure of refugees: A study with students of teaching]. *Revista de Psicología y Educación*, 12(2), 116-128. https://doi.org/10.23923/rpye2017.12.150

Smets, K. & Bozdağ, C. (2018). Editorial introduction. Representations of immigrants and refugees: News coverage, public opinion and media literacy. *Communications*, 43(3), 293-299. https://doi.org/10.1515/commun-2018-0011

Streitwieser, B. & Brück, L. (2018). Competing motivations in Germany's higher education response to the "Refugee Crisis". *Refuge: Canada's Journal on Refugees*, 34(2), 38-51. https://doi.org/10.7202/1055575ar

The Guardian (2015). Shocking images of drowned Syrian boy show tragic plight of refugees. *The Guardian*, 3 September. https://www.theguardian.com/world/2015/sep/02/shocking-image-of-drowned-syrian-boy-shows-tragic-plight-of-refugees

Thomas, E. F., Cary, N., Smith, L. G. E., Spears, R. & McGarty, C. (2018). The role of social media in shaping solidarity and compassion fade: How the death of a child turned apathy into action, but distress took it away. *New Media & Society*, 20, 3778-3798. https://doi.org/10.1177/1461444818760819

UNHCR (2023). *Ukraine emergency.* https://www.unhcr.org/ukraine-emergency.html [viewed 7 May 2022]

Wallace, R. (2018). Contextualizing the crisis: The framing of Syrian refugees in Canadian print media. *Canadian Journal of Political Science*, 51(2), 207-231. https://doi.org/10.1017/S0008423917001482

Willis-Esqueda, C, Hazel, R. & Pedroza, K. (2017). Patriotism and the impact on perceived threat and immigration attitudes. *The Journal of Social Psychology*, 157(1), 114-125. https://doi.org/10.1080/00224545.2016.1184125

Wren, M. (2017). 'Refugees are welcome here!' How public opinion got ahead of Government in Summer 2015 and stayed there. *European Judaism*, 50, 58-62. https://doi.org/10.3167/ej.2017.500209

Ziegele, M., Koehler, C. & Weber, M. (2018). Socially destructive? Effects of negative and hateful user comments on readers' donation behavior toward refugees and homeless persons. *Journal of Broadcasting & Electronic Media*, 62(4), 636-653. https://doi.org/10.1080/08838151.2018.1532430

Appendix: PREFSIR-1 Questionnaire

This is an English translation of the original instrument designed and used in Spanish by the authors.

Code: _____

REFUGEE PERCEPTION QUESTIONNAIRE

The purpose of this questionnaire is to collect information about the perception of pre-service teachers in Primary Education. It is very important for us to have accurate information. This is not a test, so there are no right or wrong answers, as long as you answer honestly. These are your opinions, totally personal, and you are free to express them. Normally every student is different from others and therefore may feel differently about any given topic.

WE ASSURE YOU THAT YOUR ANSWERS WILL BE CONSIDERED WITH ABSOLUTE ANONYMITY, RESPECTING YOUR PRIVACY.

Indicate your degree of agreement or disagreement with respect to the following statements with 1 STRONGLY DISAGREE, 2 DISAGREE, 3 NEITHER AGREE NOR DISAGREE, 4 AGREE, AND 5 STRONGLY AGREE.

Regarding the arrival of refugees in Spain, do you think that...	1	2	3	4	5
A1	Many people must leave their countries for military reasons (wars, conflicts, etc.).					
A2	I wouldn't mind having refugees as pupils.					
A3	Because of our cultural differences, I don't think I could have a refugee as a friend.					

		1	2	3	4	5
A4	I wouldn't mind if my brother or sister had a refugee as a partner.					
A5	Having refugees in the neighbourhood can be a source of problems.					
A6	I would not feel comfortable living in a neighbourhood where there were many refugees.					
Regarding economic and employment-related issues, do you think that...		1	2	3	4	5
A7	Welcoming refugees will have a negative impact on the European and Spanish labour market.					
A8	Only highly qualified people in terms of employment should be welcome.					
A9	The reception of refugees can be very positive for the labour market.					
A10	Refugees have more rights than Spaniards, they are given houses and jobs.					
A11	The reception of refugees is not a threat to the Spanish economy.					
A12	The situation of Spaniards is so difficult, the money dedicated to refugees could be used to help Spanish families with problems.					
Regarding socially related issues, do you think that...		1	2	3	4	5
A13	Refugees are fleeing war, not terrorists.					
A14	Welcoming refugees will negatively affect the rights of European and Spanish women.					
A15	The reception of migrants will not lead to an increase in social unrest.					
A16	Refugees have a different religion and/or culture, which can be detrimental to our Spanish and European identity.					
A17	The reception of refugees will not increase the risk of terrorist attacks.					
A18	Contact with refugees can help mutual understanding and better coexistence.					
Regarding the immigration policy, do you think that...		1	2	3	4	5
A19	Europe and Spain should only take in migrants fleeing war.					
A20	Europe should close its borders to refugees until it creates a way to prevent the passage of terrorists.					
A21	Europe and Spain should only take in children fleeing war.					
A22	The acceptance of migrants should be broader and extended to other job seekers.					
A23	It is logical and lawful for some countries to close their borders to refugees out of fear of terrorism.					
A24	Europe and Spain have a duty to take care of those people fleeing war in their countries.					

Indicate the media from which you receive information about the refugee issue and indicate how often you do so, where 1 is NOT AT ALL and 5 is A LOT.

		1	2	3	4	5
1	Television					
2	Press					
3	Internet sites					
4	YouTube					
5	Twitter					
6	Facebook					

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