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- **Turning Opposition into Support to Immigration: The Role of Narratives**

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Turning opposition into support to immigration: the role of narratives

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Abstract

The way we collectively discuss migration shapes citizens' perceptions of migrants and their influence on our society. This paper investigates whether a narrative about the positive impact of immigrants on the hosting economy affects natives' behaviour towards migrants. To shed light on the underlying mechanism, we present a simple theoretical framework that models the relationship between beliefs, attitude and behaviour and identifies the sequential channels through which a narrative might be useful in changing attitude and behaviour. We test its predictions through an online survey experiment, where we deliver UK natives a favourable narrative about migrants. Treated subjects revise their beliefs about migrants and exhibit significantly more positive self-reported attitudes and more pro-migrant behaviour. Moreover, they update beliefs in a way that gives support to the existence of confirmation bias.

***Key Words**: Immigration, Survey experiment, Narrative, Attitudes, Beliefs*
***JEL Classification**: C90, D83, F22, J15, Z15*

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1 Introduction

The way we collectively discuss migration shapes citizens' perceptions of migrants and ultimately affects the integration of migrants in our societies. Since public policies primarily respond to public opinion, the emergence of a cohesive, inter-cultural society can be facilitated by a more welcoming attitude of the natives. In most developed democracies, however, natives' opinion towards immigration is generally negative. In the latest Eurobarometer survey data, immigration emerged as one of the "most important concerns facing the EU". A deep understanding of whether a positive narrative about migrants can turn natives' attitude and behaviour into more favourable ones has thus become of primary importance.

There is an extensive literature on what determines public opinion about immigration. These works show that anti-immigration sentiments may arise from both economic considerations as well as from worries about cultural dilution (Hainmueller and Hopkins, 2015; Hainmueller and Hiscox, 2010; Bansak et al., 2016). In particular, immigration-related attitudes are influenced mainly by concerns that affect the nation as a whole instead of regarding personal economic circumstances (Hainmueller and Hopkins, 2014).

In addition, Alesina et al. (2018) show that natives display striking misperceptions about key features of migrants. Their knowledge of migrants' characteristics or the impact of their presence on the incoming country are often not in line with reality. For example, they have inaccurate information on the true size of migrants or inflate their unemployment or incarceration rates. According to the theories of inter-group threat (Florack et al., 2003), this misinformation can exacerbate the sense of threat in the native population and be inflamed by the prevailing narratives that portray migrants in a negative way (Brader et al., 2008). Such self-fulfilling dynamic produces an environment where negative attitudes prevail.

Shiller (2019) describes narratives as stories that spread through word of mouth, news and social media, that can influence opinion and ultimately affect decisions. A narrative is a way of presenting a situation that generally reflects a particular point of view or set of values and promotes them (*ibidem*). In addition, Roe (1994) emphasises that a narrative stabilises "the assumptions needed for decision making in the face of what is genuinely uncertain and complex": narratives can be inaccurate - and recognisably so - but still persist and thrive. According to the UNHCR Report (UNHCR, 2019), narratives nowadays prevailing in recipient countries presents migrants as "invaders", as a challenge to natives' jobs and security, as a threat to western values, culture, religion, jobs, school places, health systems and other public services, and a source of terrorism and crime. Hate speech towards migrants is a central message of far-right, populist parties, which are receiving increasing support in many European countries, as documented by the unprecedented boom in votes in the last 2019 European elections. These parties

exploit the widespread sense of anxiety and fear of "the stranger" by manipulating and accentuating such narratives to obtain electoral gain.

Although the number of studies on the drivers of natives' attitudes is large, the majority of them analyses what causes the bitter feeling against migrants. Only a few consider which factors can positively influence attitudes. Narratives that fuel the perceived threat generate a sizeable effect on attitude (Brader et al., 2008). Still, the impact of the narrative could be asymmetric, with information on the benefits having little effect on attitude. An open question remains on whether one could positively affect attitudes and behaviour by conveying a positive narrative on migrants.

To answer this question, we present a simple theoretical framework that models the relationship between beliefs, attitude and behaviour. The model identifies the sequential channels through which a narrative might be effective in changing attitude and behaviour. Using data from an incentivised online survey, where we randomly deliver to UK natives a favourable narrative about legal migrants, we test the predictions of the model. In particular, we test whether treated respondents update their perception about the impact of immigrants on the host society by changing their post-treatment beliefs. Second, we test the effect of the treatment on self-reported attitudes, retrieved by asking own opinion about the possibility to accept more immigrants in the UK. Finally, we test the impact of the treatment on two behavioural outcomes: the amount of money participants donate to an organisation working and campaigning for the rights of immigrants; the decision to sign a petition in favour of migrants. Signing the petition is a "costly" decision since it entails a certain amount of time for reading the text of the petition and providing personal data. Donating money implies that the individual bears a monetary cost: the use of monetary payments and/or costs allows maintaining strict control over incentives. Indeed, the use of monetary incentives is one of the more stringently enforced rules in economic experiments (Loewenstein, 1999).

The main findings of the paper are that a narrative emphasising the positive impact of immigrants to the hosting economy affects post-treatment beliefs, self-reported attitudes and behaviour in favour of migrants, thus providing evidence of the successful use of narratives in making attitude and behaviour more favourable. In particular, our treatment has a more substantial effect on individuals displaying pre-treatment beliefs about the impact of migrants that were not too contrasting with the content of the delivered message. In this respect, our findings support the existence of the so-called "confirmation bias". These results enlighten the importance of effective and well-targeted communication about migrants, which represents the first step for good management of immigration. The remainder of the paper is organised as follows. We discuss the related literature in Section 2 and present a simple theoretical model in Section 3. Section 4 illustrates the experimental design along with the sample; Section 5 presents the specifications and section 6 provides the experimental results. Section 7 concludes.

2 Related literature

The paper is mostly related to a recent strand of literature that designs information provision experiments to study how agents form beliefs and make choices (Haaland et al., 2020). A compelling application is to generate exogenous variation in the perception of real-world environments. In this vein, some recent works (Hopkins et al., 2019; Alesina et al., 2018; Grigorieff et al., 2020; Sides and Citrin, 2007) design interventions that deliver to natives accurate information on the incidence of migrants (i.e. their share with respect to the hosting population), and their characteristics (i.e. their origin, religion, unemployment rates and working habits). If the reason why natives' attitudes on migrants are negative is the biased perception of migrants' characteristics, these studies aim to show that delivering correct information improves attitude. Nevertheless, the results are mixed. Hopkins et al. (2019) and Sides and Citrin (2007) find that information on the true size of immigrants does little to affect attitudes toward immigration. Grigorieff et al. (2020) randomly assign a more comprehensive set of information on the characteristics of migrants in destination countries. This information affects natives' self-reported attitude and donation levels, but one sub-category of respondents most drives results, namely the Republicans.

Alesina et al. (2018) find that their treatments, which provide information about various features of the immigrant population, correct natives' misperceptions. However, the treatments made the immigration issue more salient and thus reduced natives' support for redistribution. They conclude that "the anecdotal narrative works somewhat, but not much, to improve support for redistribution" (Alesina and Stantcheva, 2020).

Another strand of research designs interventions that deliver information about the impact of migrants in host societies, rather than their incidence and general characteristics. In Haaland and Roth (2020), a treated group of respondents was informed that the mass immigration of Cubans that occurred in 1980 did not produce any adverse effect on wages and unemployment in destination regions. The authors find that the treatment successfully affects the beliefs of respondents, who became more supportive of immigration, measured by self-reported policy views and petition signatures. Facchini et al. (2016) designed different interventions to prime the potential benefits of immigration in host societies. The authors conveyed the information that immigrants help alleviating economic and social problems in Japan, such as the pension crisis, shrinking native population, or shortage of caregivers for the elderly. They find that these treatments increase support, measured by self-reported attitudes and willingness to take political action in favour of a more open immigration policy. Brader et al. (2008) manipulated the tone of a story by describing either the negative or the positive consequences of immigration in the US (strengthening the economy, increasing tax revenues, enriching American culture) as well as the ethnic cue, by showing a picture of either a Latino or of a European immigrant.

People exposed to the negative "Latino condition" display larger opposition to migration compared to subjects exposed to the "European" one.

Our paper contributes to this second strand of literature, by randomly providing respondents with a positive narrative which primes the beneficial contribution of migrants in destination areas. We differ from the previous literature in various respects. First, instead of only correcting the misperceptions on migrants regarding their general characteristics (Hopkins et al., 2019; Alesina et al., 2018; Grigorieff et al., 2020; Sides and Citrin, 2007), we aim at changing natives' attitudes and behaviour by making a positive impact of migrants in destination countries salient. In detail, the information contained in our treatment is strongly linked to nationwide labour market concerns, which are important drivers of attitudes towards migration (Hainmueller and Hopkins, 2014).

Second, similarly to Haaland and Roth (2020) in the US and Facchini et al. (2016) in Japan, we test in the UK the effect of receiving a narrative that describes the impact of foreigners in destination countries. Nonetheless, rather than measuring only the effect on a self-reported attitude about policy view or on the decision to sign a petition in favour of migrants, we move one step ahead and investigate whether our treatment can change natives' monetarily incentivised behaviour in favour of migrants, i.e. the donation to an organisation working for migrants. Paying subjects, or asking them to sustain a monetary cost like a donation, is widely recognised in economics as the most reliable way to ensure truthful reporting (Read, 2005).

Third, while the aforementioned studies treat self-reported attitudes and actual behaviour as two of the possible outcomes of the intervention, we explicitly formalise that beliefs and attitudes are a driver of actual behaviour (donation and petition sign). In this sense, we ground on conceptualisations of choice processes called "theory of reasoned action" (Fishbein and Ajzen, 1975; Ajzen, 1991). According to this framework, human action is guided by beliefs and attitudes.[1] In particular, beliefs, attitudes and behaviour form a causal chain so that beliefs lead to a favourable or unfavourable attitude and the more favourable the attitude, the stronger should be the person's intention to perform the behaviour in question.

Finally, we test whether respondents update their beliefs when exposed to the narrative treatment. Differently to Haaland and Roth (2020), in this paper we draw from the literature on confirmation bias and assume that respondents acquire or process new information in a way that confirms their preconceptions and avoids contradiction with prior beliefs (Nickerson, 1998; Rabin and Schrag, 1999; Gentzkow and Shapiro, 2006). In particular, we model a form of beliefs update that is non-Bayesian, i.e. that does not always imply a revision according to the signal the respondent receives.

[1]This theory was extended and renamed theory of planned behaviour, to incorporate the role of perceived behavioural control (Ajzen, 1991).

3 Theoretical model

We consider utility-maximising subjects and denote with d_i the donation of the potential giver i to the charity that operates in favour of migrants.[2]

We assume that subjects face quadratic costs of donating to the charity. Furthermore, their utility from giving to the charity increases the more positive is their attitude about migrants m_i:

$$U_i = -\frac{d_i^2}{2} + \alpha m_i d_i \tag{1}$$

where α denotes the relative weight of these two components. The first-order condition leads to the following optimal donation level:

$$d_i^* = \alpha m_i \tag{2}$$

which increases in the subject's attitude about migrants m_i and on the weight α the subject attaches to it.

A widely used conceptualisation of choice processes (Fishbein and Ajzen, 1975) suggests that an attitude towards something is a function of an individual's beliefs and the perceived importance of those beliefs (Madrigal, 2001). We thus specify m_i as follows:

$$m_i = \beta b_i + \epsilon_i \tag{3}$$

where b_i represents the subject's beliefs on migrants, β measures their salience and ϵ_i captures all the other factors that influence the subject's attitude about migrants. Subjects in the treatment group read a sentence describing the positive role that migrants play in determining the well-being of the society they live in, i.e. are exposed to a positive narrative on migrants. Treated subjects are expected to revise their pre-treatment beliefs on migrants $\bar{b_i}$ according to this positive signal. We assume that this revision depends on their level of pre-treatment beliefs:[3]

$$b_i = \bar{b_i} + \gamma(\bar{b_i})T \tag{4}$$

where T indicates the treatment condition, and $\gamma(\bar{b_i})$ measures the subject's responsiveness to the treatment, that depends on his pre-treatment beliefs $\bar{b_i}$. As summarised by Allahverdyan and Galstyan (2014), an agent does not change his opinion if the persua-

[2]For sake of simplicity, we focus on the donation decision because monetary payments represent the standard form of incentivised choice in economic experiment. However, d_i can be more generally interpreted as any form of behaviour that requires (monetary or non-monetary) effort, including the decision of signing the petition, which represents our second outcome variable.

[3]Our assumption is in line with Haaland and Roth (2020)'s finding, obtained through a machine learning approach, that prior beliefs are the single most important predictor of heterogeneous treatment effect on post-treatment beliefs.

sion is either far away or identical with his existing opinion. In other words, we expect the treatment to have a stronger effect on beliefs if individual i displays a "mild" belief towards migrants. This assumption grounds on the literature on confirmation bias, which shows a widespread tendency to acquire or process new information in a way that confirms preconceptions and avoids contradiction with prior beliefs (Nickerson, 1998; Rabin and Schrag, 1999; Gentzkow and Shapiro, 2006).

Taking equations 3 and 4 into account, the optimal donation level in 2 becomes:

$$d_i^* = \delta_1 \bar{b_i} + \delta_2(\bar{b_i})T + \delta_3 \epsilon_i \tag{5}$$

where $\delta_1 = \alpha\beta$, $\delta_2(\bar{b_i}) = \alpha\beta\gamma(\bar{b_i})$, and $\delta_3 = \alpha\epsilon_i$.

In sum, an individual's optimal donation in favour of migrants (or, more generally, his pro-migrants behaviour) depends on his prior beliefs on migrants and his responsiveness to the narrative (which we assume to rely on his prior beliefs), plus an error term.

4 Design and sample

To meet the objectives of the present study, we consider three categories of outcome variables: beliefs on the impact of migrants, self-reported attitudes towards migrants, and incentivised behaviours. We also collect information on respondents' socio-demographic characteristics, such as gender, age, political orientation, opinion on issues facing societies today, perception of own social status, country of residence, income, highest level of education achieved, employment status, sector of occupation, marital status, number of children, religion, ethnicity, whether parents were born outside the UK and opinion about the way that the media approaches the subject of immigration. We measure a self-reported level of interaction with immigrants by asking if respondents have friends or acquaintance who were born outside the UK and collect measures of traditional drivers of donation behaviour, such as altruism, warm glow and generosity.[4] The Appendix provides a detailed description of these variables.

The majority of socio-demographic questions are asked at the end of the survey. However, some of the variables, namely beliefs and attitudes, are collected both before and after the treatment is presented. We follow Haaland and Roth (2020) and slightly modify both the questions and the scale of possible answers before and after the treatment.

We elicit pre-treatment beliefs by asking the following question: "In your opinion, what is the impact of immigrants on the UK?" and possible answers are: they generate large negative effects; they generate negative effects; they have no impact; they generate positive effects; they generate large positive effects. We code the answers using a scale 1

[4]To make the purpose of the study less clear and minimise the experimental demand effect, we also add environmental questions regarding respondents' pro-environmental behaviour and perception of the air pollution problem. See below how we further addressed the experimental demand effect.

to 5. We also collect pre-treatment attitude by asking the following question: "In your opinion, should the number of immigrants in this country be: reduced a lot, reduced a little, kept at the current level, increased a little, increased a little". Answers are coded from 1 to 5.

We then present our information treatment to a random subsample of respondents. To select the relevant content of the message, we rely on the results of two papers on the effects of immigration on the welfare of OECD countries (Battisti et al., 2018; Docquier et al., 2014). In particular, the treated subject received information that states that:

"*New research indicates that immigration has increased native welfare in almost all OECD host countries. Immigrants bring not only labour but also local demand. They often work in jobs differentiated from those of natives. Moreover, their presence may attract investment and bring the creation of complementary jobs for native-born workers*".

Just before presenting this information treatment, we tell all respondents, including the control group, that they would receive a bonus on top of the standard payment for completing the survey. This bonus can be kept by the respondent, or donated (all or in part) to an organisation randomly assigned to the respondent. To contrast the experimental demand effect, we followed Bursztyn et al. (2017) and selected two organisations, which could either be pro-migration or anti-migration. We explicitly provide respondents with the names and the missions of both organisations.[5] The subjects are informed that they will be randomly assigned to one of the two. In particular, as in Bursztyn et al. (2017) we apply a randomisation so that 90% of participants are assigned to the pro-migration association and 10% to the anti-immigrant association. This randomisation choice aims at maximising power while avoiding deception.

After respondents receive the treatment or no information in the case of respondents randomly allocated to the control group, we ask respondents if they would like to donate part of their 1 £ participation bonus to the organisation above, and register their donation choices.

To measure our second behavioural outcome, we present all respondents the text of a real petition in favour of migrants. The petition states:

"*The UK Government now supports harmful policies which aim to trap desperate migrants and refugees in detention centres in Libya. By signing the petition, you can ask the Government to make a public stand against these policies and increase its commitment to resettle vulnerable refugees.*"

We ask respondents if they are willing to sign the petition. For positive answers, we provide a link to the real petition, available in the UK Parliament petitions website. We then measure the (self-reported) signature. The order of the donation and petition

[5]The two-organisations that we selected are Migration Watch UK, which makes suggestions as to how immigration might be reduced in the UK. The other is Migrants' Rights Network, which works and campaigns for the rights of immigrants in the UK.

signature was randomised.

Finally, we retrieve a post-treatment attitude through a question that asks the willingness to increase the number of legal migrants in the UK. In particular, we provide the following statement: "I think the UK should accept more immigrants". The answer is expressed in terms of disagreement, neutrality or agreement with the statement. We code the variable from 1 to 3.

We also measure post-treatment beliefs about the impact of migrants. Given that our positive narrative treatment intends to prime some positive effect of migrants in destination societies, we want to test if the treatment is effectively able to influence respondents' beliefs on possible positive impacts. We ask respondents their opinion on the statement: "I think Immigration is beneficial for the UK as a whole", expressed as disagreement, neutral or agreement and coded from 1 to 3 as in the case of the answers to the post-treatment attitude.

Data were collected using an incentivised online survey with British respondents administered through the platform Prolific Academic. The survey, conducted in August 2019, recruited 2'152 participants and was part of a larger project that involved a total amount of 5'992 subjects.

Only British citizens, at least 18 years of age, were allowed to take part in the survey. The pool of panellists is made of volunteer persons, who are generally more representative in terms of socio-demographic characteristics compared to students typically used in laboratory experiments. However, we acknowledge that for some characteristics, the sample was not representative of the UK population. Table 1 shows the summary statistics of the main variables of the analyses. For example, the female gender is highly represented in the sample, as well as young adults. Moreover, participants are highly educated. This last feature, in particular, is widespread in online samples. The compensation for completing the survey was £ 1,25. Besides, participants received a bonus payment of £1 they could decide to donate (fully or partially) to the organisation. The average donation was 32 pence.

Figure 1, left panel, correlates pre-treatment beliefs and individual characteristics. The figure indicates remarkable differences in beliefs between individuals with different background characteristics, which are listed on the y-axis. Respondents who have an immigrant parent, who are highly educated, who earn high income or individuals who have more acquaintances with immigrants display more positive beliefs (indicated by the red diamond) compared to their counterparts (indicated by the orange squares). Conversely, those who have a low perception of own social status, think that the media treats the subject of immigration with sufficient and accurate information, have a conservative political orientation, and believe that immigration is the most critical issue facing the UK today, display more pessimistic beliefs compared to their counterpart. A similar pattern is shown by the right panel, which reports pre-treatment attitude, expressed in term of

opinion on preferred immigration levels in the UK.

In our sample, half of the respondents received the treatment, while the other half served as a control group. As indicated in Table A.1 the randomisation is balanced across the majority of the characteristics, except for gender and two sectors of employment, namely Transport, Storage and Communications and Electricity, Gas and Water. In general, people working in immigration intensive sector might have a stronger misperception about the impact of migrants and display larger opposition, as indicated by Alesina et al. (2018). According to the Eurostat Census Data, however, in the UK, the share of immigrants in these two sectors is below or aligned with the national average share of foreigners. Therefore, we believe that this unbalance does not represent a problem for our study. Finally, respondents in the treatment group are more likely to provide a correct answer to an attention check question, compared to the control group. Since the attention check was placed before the treatment, the treatment should not have influenced the attention paid by respondents to the questionnaire and the quality of their responses. Nevertheless, we conduct some robustness checks to take into account this unbalance.

5 Specifications

The positive narrative on migrants is expected to improve beliefs about the impact of migrants of treated respondents, and this should translate into more positive attitudes and more favourable behaviour towards migrants. We, therefore, test if the treatment affects natives' beliefs, attitudes and behaviours in the expected directions. These sequential tests can provide indirect evidence that the treatment leverages the channel we have described above. To meet this objective, we test the following equation:

$$y_i = \beta_0 + \beta_1 T_i + \beta_2 X_i + \varepsilon_i \tag{6}$$

where y_i is the outcome of interest, namely beliefs, attitude, petition decision and donation, T_i is the treatment variable, and X_i is a bundle of socio-economic characteristics described above. Robust standard errors are used in all specifications. Moreover, to offset the increased potential for false positives that arise because we analyse the effect of the treatment on multiple outcome variables, and across multiple subgroups, we compute the sharpened False Discovery Rate (FDR) adjusted q-values, proposed by Benjamini et al. (2006) and discussed in Anderson (2008).

According to our theoretical framework, the information signal conveyed by the narrative affects beliefs, and consequently attitude and behaviour, only if the subject's pre-treatment beliefs about the impact of migrants are sufficiently positive or not too positive already. As summarised by Allahverdyan and Galstyan (2014), an agent does not change his opinion if the persuasion is either far away or identical to his current view. To give

support to this hypothesis, we test a possible heterogeneous effect of treatment on the outcome variables of interest with respect to pre-treatment beliefs. We, therefore, estimate the following equations:

$$y_i = \beta_0 + \beta_1 T_i + \beta_2 m_i * T_i + \beta_3 X_i + \varepsilon_i \tag{7}$$

where m_i measures pre-treatment beliefs.

6 Results

Table 2 presents the effect of receiving the treatment on post-treatment beliefs (Columns (1) and (2)) and post-treatment attitude (Columns (3) and (4)). Given the ordered nature of the dependent variables, that range from 1 to 3, with more positive beliefs of the impact of migrants or higher support to migration corresponding to a higher value of the index, we present both OLS and Ordered Probit estimates.

According to the OLS estimate, being prompted with the narrative on the beneficial effect of migrants significantly increases the beliefs index by 0.05, on average and ceteris paribus. This effect corresponds to a 2% increase in the value of the average post-treatment index. Similarly, the ordered probit estimate indicates that the treatment is effective in turning beliefs into more optimistic ones. Treated respondents, compared to the control group, are 2.4 percentage points less likely to disagree with the statement that immigration is beneficial for the UK as a whole, and 3.6 percentage points more likely to agree with the statement. These results are consistent with the existing literature that finds that people update their beliefs in the direction of the proposed research evidence. Delivering the correct information on some characteristics of migrants (Alesina et al., 2018; Grigorieff et al., 2020), or about their impacts on hosting societies (Haaland and Roth, 2020) represents an effective way to reduce misperceptions regarding the immigrant population.

The second question is whether this update in beliefs translates into a more favourable attitude towards migrants. Columns (3) and (4) present the effect of the treatment on post-treatment attitudes. The information treatment exerts a positive and statistically significant impact on the attitude towards migrants. Treated respondents become more likely to be in favour of accepting more immigrants. The OLS estimate indicates a 2.5% increase in the value of the average post-treatment index as an effect of receiving the treatment. The ordered probit estimate suggests that the positive narrative makes respondents 2 percentage points less likely to oppose any increase in immigrants in the UK and 2.2 percentage points more likely to favour such increase. The significance of the coefficients is robust to the adjustment for multiple hypotheses due to multiple outcome variables. Sharpened two-stage q-values (Benjamini et al., 2006) are reported in the table.

Even if people trust the information provided and update their beliefs in the expected direction, not all types of information can affect natives' attitude towards migration. While factual information does not improve attitude (Hopkins et al., 2019; Sides and Citrin, 2007), framing the message in terms of economic impact seems to successfully influence the attitude towards migrants. This result may have to do with the fact that a message on the effects of migrants has a clear and direct link with nationwide market concerns. This type of concerns have a prominent role in attitudes (Hainmueller and Hopkins, 2014).

The outcome variables that we analysed so far represent self-reported measures, which do not entail any cost to the respondents. Therefore, to assess the effect of information treatments, the use of incentivised behavioural outcomes represent a reliable approach. In this paper, we employ two different incentivised behavioural measures: the subject's decision to sign a petition, and the subject's donation to an organisation working for migrants. However, while signing a petition entails some effort in the form of the amount of time for reading the text and providing personal data, donating money constitutes a monetarily incentivised measure, because the respondent bears actual financial costs. Moreover, in the present study, the petition cannot be considered an actual behavioural outcome. We were not able to check if the respondents truly signed the petition, because, for privacy reasons, the signature of the petition was conducted in an external site, which was not under the control of the research team. We simply asked respondents if they were willing to sign the petition and whether they signed it. For this reason, our petition variable is a self-reported measure. Haaland and Roth (2020), for example, found a particular discrepancy between the self-reported and actual signs of the petition, measured through the petition page. The fraction of self-reported petition signs was much larger than the fraction of real signs.

To reduce the number of tests being conducted, we follow Anderson (2008) and compute an index that summarises the two petition variables in this study, namely the willingness to sign the petition and whether the respondent reported that she signed it. The summary index is a weighted mean of the two standardised outcomes.[6]

Table 3 enlightens the effect of the treatment on donation and petition. Given that the donation variable is censored, as it cannot range over 100 (pence), we employ both a OLS (Column (1)) and Tobit models (Column (2)). We find that receiving a clear message on the positive effect of immigrants on hosting societies increases the amount of donation to an organisation that works and campaigns for the rights of migrants in the UK by 3.2 and 3.8 pence, depending on the specification. Given an average donation of 32 pence, this effect represents a 10% and 12% increase in the average donation, respectively. The sharpened two-stage q-values indicate that the coefficients are significant at conventional levels.

[6]See Anderson (2008), for details on the computation of the index.

Conversely, Column (3) indicates that the effect of the treatment on the petition index is only marginally significant.[7] One possible interpretation for the weak impact of the information message on the decision to sign the petition is that the message conveyed in the treatment does not directly link with the petition content. While the treatment explicitly focuses on migration in the UK, the petition refers to harmful policies which aim to trap desperate migrants and refugees in detention centres in Libya. To make the information more effective, a more direct connection between the treatment and the tested outcome is likely to be needed. This link is more apparent in the case of donation, being the organisation selected active in support to migrants in the UK. As discussed above, the donation represents our preferred outcome variable compared to the petition, because first, it is a real measure and not a self-reported measure, and second it is a monetarily incentivised outcome, which entails an actual monetary cost and not only a cost in terms of time and effort.

The results presented so far show the positive effect of a favourable narrative about migrants on natives' beliefs, attitude and behaviour. The sequential tests of the treatment on beliefs, attitude and behaviour provide support in favour of the theory of reasoned action (Fishbein and Ajzen, 1975), according to which beliefs, attitude and behaviour form a causal chain.

The second objective of this study is to test how treatment affects beliefs. According to our theoretical framework and in agreement with studies that claim the existence of confirmation bias, people update their beliefs only if the new information is not too at odds with prior beliefs. Moreover, we assume that the update occurs if the information brings new knowledge. We should therefore expect a heterogeneous effect of the treatment on beliefs and that this differential response depends on pre-treatment beliefs. The first testable implication of the theoretical model, expressed in Equation 4, is that the treatment has a stronger effect on beliefs if individuals display a "mild" beliefs towards migrants. The variable on pre-treatment beliefs measures the response to a question on the impact of immigrants on the UK. It is coded using a scale from 1 to 5. 1 and 5 indicate that the respondents believe that immigrants generate large negative effects, and large positive effects, respectively. The other possible answers (2, 3, 4), which we identify as mild beliefs, are that immigrants generate adverse effects, they have no impact, or cause positive outcomes.

Panel A of Table 4 summarises the results on the treatment effect on post-treatment beliefs, by distinguishing among the different groups of respondents. While people holding very negative beliefs about the impact of immigrants in the UK do not update beliefs after being prompted with the treatment (Column (1)), people holding mild beliefs update them significantly, in the expected direction (Column (2)). Finally, the coefficient of the treatment for people holding very positive beliefs is positive, but it is not statistically sig-

[7] The sharpened two-stage q-value indicate a significance at 9.9%.

nificant (Column (3)). Results are robust to adjustments for multiple hypotheses testing due to multiple subgroups. In a robustness check, we analyse the treatment effect using interaction dummies. Column (1) of Table A.2 confirms the differential response of the treatment on beliefs depending on the pre-treatment beliefs. Moreover, the second-to-last row indicates a positive and statistically significant effect of the information treatment for individuals with Mild beliefs.

While this result supports studies on confirmation bias (Nickerson, 1998; Rabin and Schrag, 1999; Gentzkow and Shapiro, 2006), we believe that it is not in contrast with the evidence in Haaland and Roth (2020), which documents that respondents with less positive pre-treatment beliefs are more responsive to the information treatment. In their study, the information delivered was neutral, as it showed no adverse labour market impacts of immigration. Conversely, we provide evidence of a positive effect of migrants. What matters is how distant is the provided evidence compared to existing knowledge. In the present study, the two positions were far away from one another, so the persuasion did not occur for respondents holding very negative beliefs.

Our theoretical model predicts that this form of beliefs update sequentially translates in a heterogeneous effect of the treatment on donation (Equation 5) and attitudes. Panel B and C of Table 4 confirm that the effectiveness of the information treatment on these additional outcomes is driven by respondents with mild pre-treatment beliefs. The coefficients of the treatment variable on attitude and donation are positive and statistically significant for respondents with mild pre-treatment beliefs. This finding holds if we employ specifications that make use of interaction dummies (Table A.2). Conversely, estimates in Panel D indicate that the treatment does not affect responses for any of the sub-group considered.

One can question if a higher donation in the treated group of respondents occurs not because the treatment improves the attitude and consequently behaviour, as suggested by our theoretical model and the empirical findings, but because some people retained previous incorrect beliefs about the impact of migrants and the treatment generated a sense of guilt. However, if this alternative hypothesis were correct, the treatment would influence donation without affecting attitude. The positive and statistically significant effect of treatment on attitude that we find challenges this claim. Second, if the sense of guilt is the real mechanism, we would detect a more substantial impact of the treatment on donation among individuals who previously had the most incorrect beliefs. The lower donation response observed in individuals with negative beliefs compared to the other groups of individuals goes against this interpretation.

Before the treatment was delivered, we checked the attention of participants by asking a simple question about happiness. The text asked participants to select a specific answer, out of five available. The wrong answer suggests that the participant did not read carefully the full text and raises doubts on the quality of all other responses. Right after their

response, we informed participants that the previous question was an attention check. Prompting respondents about the importance of paying attention to the questions is a way to secure good quality answers. However, as a robustness check, we run two additional specifications. One includes a control for correct answers to the attention check. The other excludes from the sample respondents that failed the check. Results are reported in Table A.3 and indicate that our results are robust to these specifications. As a further check, we measured the time respondents took to ultimate the questionnaire. As expected, respondents who went too fast, namely in the bottom 5% of the duration variable distribution, are more likely to fail the attention check compared to all other respondents. Results are robust to the exclusion of these panellists.

7 Conclusions

The narrative prevailing in European countries presents migrants as a challenge to natives' jobs and security and as a threat to western values. Being able to turn this narrative into one that emphasises the beneficial effects of immigration on destination countries might represent a powerful tool to establish a new basis for a more welcoming and cohesive community. To shed light on the effectiveness of such a positive narrative, we run an online survey experiment where treated UK respondents receive information on the beneficial impact of legal migrants on the UK society. We provide evidence that this information treatment has a positive effect on natives' beliefs, attitude and incentivised behaviour. The results are in line with our theoretical framework that identifies the sequential channels through which a narrative can influence attitude and behaviour, by affecting individuals' beliefs. We show that subjects update their beliefs in a non-Bayesian way, i.e. only if the narrative content is not too in contrast with their prior beliefs. This finding gives support to the so-called "confirmation bias".

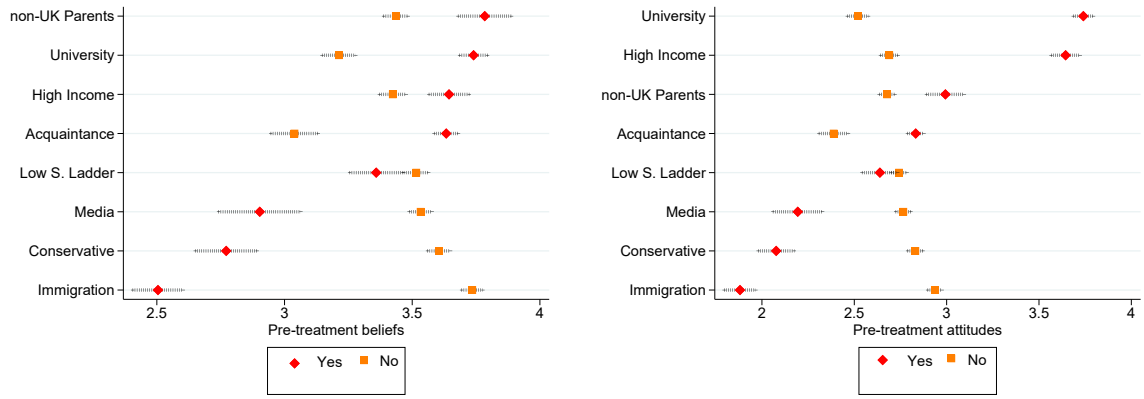
These results confirm the pervasive role of the narratives in shaping attitudes and driving decisions, as emphasised in recent literature (Shiller, 2019). While the narratives that leverage the sense of threat influence public opinion in a negative way, our contribution makes it clear that a positive (counter-)narrative can be successfully exploited to make attitude and behaviour more supportive. This result calls for a more responsible approach to the way how policymakers, the media, and citizens discuss and communicate about the migration phenomenon.

Furthermore, our experiment contributes to a deeper understanding of when and how a positive narrative can change attitude and behaviour, not only in the domain of migration but whenever in-group/out-group biases and discrimination emerge.

Indeed, our design helps in identifying some key characteristics that a campaign should have to be effective. First, the narrative needs to be explicitly focused on the root causes of a negative attitude. Centring the narrative around the positive impacts of the out-group is

more effective than informing about generic characteristics of the out-group, because this type of framing helps to alleviate in-group's concerns. Second, the narrative content has to be structured depending on who is the target group to influence. While in Haaland and Roth (2020), subjects with less positive prior beliefs are more responsive to the neutral information (showing no adverse effects of immigration), we find that the information on the positive impact of migrants determines a stronger reaction in individuals with mild prior beliefs. The identification of the target group, and comprehensive analysis of the target group's perception of the out-group, is thus needed to understand how to frame the narrative properly, bearing in mind that people are reluctant to process information that is considered too distant from their existing knowledge.

Figure 1: Pre-treatment beliefs and attitudes



Notes: The left panel shows the average pre-treatment beliefs about the impact of migrants for groups of respondents with different background characteristics. The right panel shows the average pre-treatment attitudes. Groups are defined by the indicator variables listed on the vertical axis. The mean when the indicator is equal to 1 is represented by the red diamonds; the mean when it is equal to 0, by the orange squares. The shaded areas are 95% confidence intervals around the mean.

Table 1: Descriptive statistics

	Mean	SD	Min	Max
Panel A: controls				
Female	0.684	0.465	0	1
Age	36.779	12.674	18	86
Conservative	0.145	0.352	0	1
Immigration	0.204	0.403	0	1
Low Social ladder	0.199	0.400	0	1
Pre treat attitude	2.722	0.948	1	5
Pre treat beliefs	3.485	1.045	1	5
Single	0.416	0.493	0	1
Nochildren	0.523	0.500	0	1
University or more	0.515	0.500	0	1
White	0.928	0.258	0	1
Christianity	0.321	0.467	0	1
Employed	0.724	0.447	0	1
Income	0.276	0.447	0	1
non-UK Parents	0.140	0.347	0	1
Acquaintances	0.750	0.433	0	1
Scotland	0.088	0.283	0	1
Abroad	0.003	0.057	0	1
Ireland	0.017	0.130	0	1
Wales	0.044	0.205	0	1
Generous	0.191	0.393	0	1
Warmglow	0.862	0.345	0	1
Altruism	0.898	0.303	0	1
Media	0.077	0.266	0	1
Panel B: outcome variables				
Post treat beliefs	2.471	0.785	1	3
Post treat attitude	1.964	0.841	1	3
Donation - pence	32.133	39.135	0	100
Petition index	2.19e-08	1	-1.113	0.995

Notes: The number of observations of the sample is 2'152.

Table 2: Treatment Effect on Beliefs and Attitudes

	(1)	(2)	(3)	(4)
	Post beliefs		Post attitude	
	OLS	Ordered Probit	OLS	Ordered Probit
Treatment	0.052**	0.205***	0.046*	0.104*
	(0.022)	(0.067)	(0.025)	(0.058)
	[0.075]	[0.008]	[0.075]	[0.052]
Observations	2,152	2,152	2,152	2,152
R-squared	0.611		0.536	
Controls	Yes	Yes	Yes	Yes

Notes: The dependent variables range from 1 to 3. Controls included are: female, age, conservative, immigration, low social ladder perception, pre-treatment beliefs, pre-treatment attitude, single, no children, university, income, white, Christianity, employed, sectors of employment, acquaintances, Ireland, Wales, Scotland, abroad, non-UK parents, media. See Appendix A for the variable definition. In column (2), the marginal effects of the treatment for y=1 (disagree) is -0.024, y=2 (neutral) is -0.012 and y=3 (agree) is 0.036. In column (4), the marginal effects of the treatment for y=1 (disagree) is -0.020, y=2 (neutral) is -0.002 and y=3 (agree) is 0.022. Robust Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. FDR-adjusted q-values in brackets.

Table 3: Treatment Effect on Behavioural outcomes

	(1)	(2)	(3)
	Donation		Petition Index
	OLS	Tobit	OLS
Treatment	3.157**	3.842**	0.036
	(1.537)	(1.895)	(0.038)
	[0.075]	[0.045]	[0.099]
Observations	2,152	2,152	2,152
R-squared	0.188		0.251

Notes: The dependent variable in Columns (1) and (2) range from 0 to 100. The dependent variable in Column (3) is a summary index computed as a weighted mean of two standardised variables: the first is the willingness to sign a petition and the second is a self-reported sign of the petition. Controls included are female, age, conservative, immigration, low social ladder perception, pre-treatment beliefs, pre-treatment attitude, single, no children, university, income, white, Christianity, employed, sectors of employment, acquaintances, Ireland, Wales, Scotland, abroad, non-UK parents, media, control for the order of randomisation between donation and petition signature. See Appendix A for the variable definition. Columns (1) and (2) also include generous, warm-glow, altruism. Robust Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Sharpened FDR-adjusted q-values in brackets.

Table 4: Treatment Effect: heterogeneity for pre-treatment beliefs

	(1) Very Negative	(2) Mild	(3) Very Positive
Panel A: Post beliefs			
Treatment	-0.183	0.068***	0.010
	(0.163)	(0.023)	(0.028)
	[0.371]	[0.013]	[0.682]
R-squared	0.603	0.602	0.216
Panel B: Post attitude			
Treatment	-0.183	0.061**	-0.011
	(0.167)	(0.028)	(0.059)
	[0.387]	[0.094]	[0.719]
R-squared	0.599	0.489	0.289
Panel C: Donation			
Treatment	-4.300	2.784*	5.765
	(7.080)	(1.639)	(6.025)
	[0.576]	[0.367]	[0.515]
R-squared	0.457	0.156	0.151
Panel D: Petition			
Treatment	-0.026	0.014	0.135
	(0.261)	(0.041)	(0.112)
	[1]	[1]	[1]
R-squared	0.552	0.245	0.210
Observations	65	1,853	234

Notes: see notes to Table 2 for the list of controls in Panels A and B and note to Table 3 for the list of controls in Panels C and D. The sample of respondents in Column (1) is represented by individuals that answered that immigrants: generate large negative effect; in Column (2): generate negative effect; have no impact; generate positive effect; in Column (3): generate large positive effect. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1. FDR-adjusted q-values in brackets.

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Table A. 1: Sample Balance

Controls	Treat	Control	Difference
Female	0.656	0.713	-0.056***
Age	36.565	36.993	-0.428
Conservative	0.143	0.146	-0.003
Immigration	0.204	0.203	0.001
Low Social ladder	0.211	0.188	0.023
Pre treat attitude	2.717	2.727	-0.01
Pre treat beliefs	3.466	3.503	-0.037
Single	0.421	0.411	0.009
No children	0.525	0.521	0.004
University	0.531	0.5	0.032
White	0.92	0.937	-0.017
Christianity	0.308	0.333	-0.025
Employed	0.721	0.727	-0.005
High income	0.274	0.277	-0.003
non-UK Parents	0.145	0.135	0.01
Acquaintances	0.742	0.758	-0.016
Generous	0.191	0.190	0.002
Warmglow	0.868	0.857	0.011
Altruism	0.907	0.888	0.019
Media	0.082	0.072	0.01
Scotland	0.086	0.089	-0.003
Abroad	0.004	0.003	0.001
Ireland	0.017	0.018	-0.001
Wales	0.039	0.049	-0.01
England	0.854	0.841	0.013
Accommodation sector	0.03	0.033	-0.004
Agriculture, fishing and mining sector	0.004	0.007	-0.003
Financial and insurance sector	0.051	0.045	0.006
Health and social work sector	0.11	0.109	0.001
Manufacturing sector	0.077	0.062	0.015
Other social and personal sector	0.051	0.063	-0.012
Private households sector	0.006	0.007	-0.001
PA and defence sector	0.046	0.042	0.005
Business sector	0.078	0.072	0.006
Transport and Communication sector	0.019	0.037	-0.019***
Wholesale and retail trade	0.068	0.082	-0.014
Construction sector	0.031	0.027	0.004
Education sector	0.136	0.127	0.009
Electricity, gas and water sector	0.013	0.006	0.007*
Attention check	0.955	0.936	0.020**

Notes: The number of individuals in the control and treatment groups is 1075 and 1077, respectively. We report difference in means between groups and significance levels of a t-test: *** p<0.01, ** p<0.05, *p<0.1.

Table A. 2: Heterogeneity for pre-treatment beliefs. Interactions

	(1) Post Beliefs	(2) Post Attitude	(3) Donation
Treatment	-0.199*	-0.119	-2.197
	(0.102)	(0.101)	(4.828)
Treatment x Mild	0.247**	0.172	4.824
	(0.106)	(0.105)	(5.092)
Treatment x Very Positive	0.216*	0.103	9.350
	(0.113)	(0.120)	(7.198)
Observations	2,152	2,152	2,152
R-squared	0.486	0.526	0.199
Treatment Effect for mild beliefs	0.049*	0.054*	2.627
Treatment Effect for very positive beliefs	0.017	-0.016	7.153

Notes: see notes to Table 2 for the list of controls in Columns (1) and (2) and note to Table 3 for the list of controls in Column (3). Mild is a dummy variable that is equal to 1 if respondent answered that immigrants: generate negative effect, have no impact, generate positive effect; 0 otherwise; Very Positive is a dummy variable that is equal to 1 if respondent answered that immigrants generate large positive effect; 0 otherwise. The effect in the second to-last row is computed by adding the coefficient of Treatment and the coefficient of Treatment x Mild. The effect in the last row is computed by adding the coefficient of Treatment and the coefficient of Treatment x very Positive. We tested for the null hypothesis that there is no treatment effect for individuals holding Mild beliefs, and Very Positive Beliefs. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table A. 3: Treatment Effect on Beliefs, Attitudes, Donation. Attention Check

	(1)	(2)	(3)
Panel A: Post Beliefs			
Treatment	0.050**	0.053**	0.054**
	(0.022)	(0.022)	(0.022)
R-squared	0.612	0.612	0.618
Panel B: Post Attitude			
Treatment	0.048*	0.053**	0.051**
	(0.025)	(0.026)	(0.026)
R-squared	0.537	0.536	0.543
Panel C: Donation			
Treatment	3.012**	2.906*	2.941*
	(1.536)	(1.577)	(1.588)
R-squared	0.190	0.194	0.184
Attention check	yes	no	no
Observations	2,152	2,035	2,039

Notes: see notes to Table 2 for the list of controls in panels A and B and note to Table 3 for the list of controls in Panels C. Specifications in Column (1) include a variable that is equal to one if the respondents passed the attention check; specifications in Column (2) remove respondents that did not pass the attention check; specifications in Column (3) remove respondents in the bottom 5% of the duration variable distribution. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

A Variable Definitions

Donation: the amount of donation to a pro-migrant association, expressed in pence.
Petition index: summary index computed as a weighted mean of two standardised petition outcomes - petition intention, petition sign.
Post-treatment beliefs: variable equal to one if the respondent disagrees with the statement that immigration is beneficial for the UK as a whole; equal to two if the respondent is neutral about the statement; equal to three if she agrees with the statement.
Post-treatment attitude: variable equal to one if the respondent disagrees with the statement that the UK should accept more immigrants; equal to two if the respondent is neutral about the statement; equal to three if she agrees with the statement.
Female: dummy variable equal to one if the respondent is female; 0 otherwise.
Age: respondent's age in years.
Conservative: dummy variable equal to one if the respondent has conservative political orientation, 0 otherwise.
Immigration: dummy variable equal to one if the respondent thinks that immigration is the most critical issue facing the UK.
Low social ladder: it captures own perception on the social status ladder, compared to other people. Dummy variable equal to one for very low and low perception; 0 otherwise.
Pre-treatment attitude: a variable that is equal to one if the respondent wants to reduce a lot the number of immigrants; two = reduce a little; three = keep the same; four =increase a little; five = increase a lot.
Pre-treatment beliefs: a variable that is equal to one if the respondents think that immigrants generate a large negative effect in the UK; two = negative effect; three = no impact; four = positive effect; five = large positive effect.
Single: dummy variable equal to one if the respondent is single; 0 otherwise.
No children: dummy variable equal to one if the respondent has no children; 0 otherwise.
University: dummy variable equal to one if respondent has at least 4-years college degree; 0 otherwise.
White: dummy variable equal to one if the respondent is of white ethnicity; 0 otherwise.
Christianity: dummy variable equal to one if the respondent religion is Christianity; 0 otherwise.
Employed: dummy variable equal to one if the respondent is employed, 0 otherwise.
High income: dummy variable equal to one if the respondent's household income is in the top quartile of the household income distribution in the sample, 0 otherwise.
non-UK Parents: dummy variable equal to one if at least one of the respondent's parents is born outside the UK; 0 otherwise.
Acquaintances: dummy variable equal to one if the respondent has friends or

acquaintances who were born outside the UK; 0 otherwise.
Scotland: dummy variable equal to one if the respondent lives in Scotland; 0 otherwise.
Ireland: dummy variable equal to one if the respondent lives in Ireland; 0 otherwise.
Wales: dummy variable equal to one if the respondent lives in Wales; 0 otherwise.
Abroad: dummy variable equal to one if the respondent lives outside the UK; 0 otherwise.
Generous: it captures self-perceived generosity. Dummy variable equal to one if the respondent feels more generous than the person she wants to be, 0 otherwise.
Warm-glow: dummy variable equal to one if the respondent agrees with the statement that she feels good helping other people in need; 0 otherwise.
Altruism: dummy variable equal to one if the respondent agrees with the statement that she cares about other people's well-being; 0 otherwise.
Media: dummy variable equal to one if the respondent thinks that the media approaches the subject of immigration with sufficient and accurate information; 0 otherwise.
Sector: dummy variables equal to one if the respondent works in the specific sectors (Accommodation and food services; Agriculture, fishing and mining; Construction; Education; Electricity, gas and water supply; Financial and insurance activities; Health and social work; Manufacturing; Community, social and personal service activities; Private households with employed persons; Public administration and defence; Real estate, renting and business activities; Transport, storage and communications; Wholesale and retail trade)
Attention check: dummy variable equal to one for correct answers to the attention check.