

DO PEOPLE AVOID MORALLY RELEVANT INFORMATION? EVIDENCE FROM THE REFUGEE CRISIS

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Abstract—Combining click data from a Swedish newspaper and administrative data on asylum seekers in Sweden, I examine whether a larger presence of refugees in a municipality induces people to avoid news that may encourage welcoming the newcomers. Exploiting the unexpected inflow of refugees to Sweden during 2015 and their exogenous allocation across Swedish municipalities, I find that people living in municipalities where the relative number of refugees is larger read fewer articles about asylum seekers. The decrease in clicks is 36% larger for more empathic articles and is correlated with less engagement in activities aimed at welcoming refugees.

I. Introduction

DO inhabitants of a wealthy and peaceful country want to understand the conditions of immigrant refugees? Do they want to know the extent to which air travel causes global warming? Do they want to know whether their clothes have been manufactured by child labor? Casual observation suggests that people sometimes prefer to avoid information that is relevant to their moral choices in order to escape responsibility (Golman, Hagmann, & Loewenstein, 2017; Hertwig & Engel, 2016).¹

This paper examines the magnitude of such information avoidance in a real-world setting. Specifically, using the refugee crisis that hit Sweden in 2015, I examine whether a larger presence of asylum seekers induces people to avoid information that may encourage welcoming the newcomers. In 2015 over 1 million people applied for asylum in the Euro-

pean Union. More than 160,000 applications were received in Sweden, corresponding to 1.6% of the Swedish population.

As a measure of information avoidance, I employ the number of online clicks on selected articles from the online version of the leading Swedish newspaper (*Dagens Nyheter*) for each Swedish municipality.² The topics of the articles are related to the refugee crisis and to any other fact connected to the asylum seekers mentioned in the newspaper, which has uniform national coverage, from February 2015 to February 2016. I combine this novel data set of online clicks with administrative data on asylum seekers welcomed in each Swedish municipality during 2015.

In a fixed-effects regression framework, I estimate the causal impact of the number of refugees per capita in a municipality on the average number of clicks per article on refugees from that municipality. Conditional on month and municipality fixed effects, I argue that the spatial and temporal variation in the allocation of refugees across Sweden is exogenous. First, there was an unexpected huge increase in the number of asylum-seeking applications in Sweden during 2015, a period often referred as the “refugee crisis.” Second, I focus on refugees who are waiting for the decision on their asylum status and have the right of an accommodation when they arrive in Sweden. The Swedish Migration Agency is responsible for organizing such accommodation and assigns asylum seekers to municipalities without local political influence on the decisions.³ Especially during fall 2015, due to the sudden and unexpected inflow of asylum seekers in need of accommodation, the Swedish Migration Agency had to quickly find housing to host an unprecedentedly large number of people. Asylum seekers were assigned to municipalities based on the housing availability with little advance notice. Thus, to complement the empirical strategy, I also propose an instrumental variable approach using data on available housing by municipality and month as instrument for the number of asylum seekers.

²Clicks are defined as number of page views at the level of a URL for each article. A municipality is a lower-level urban administrative division. There are 290 municipalities in Sweden.

³During the crisis in 2015 no special algorithm or rule was used to match the allocation of asylum seekers across Sweden with municipalities’ characteristics. In January 2017 new legislation on the allocation of refugees across municipalities was enacted.

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¹Strategic ignorance used as attempt to escape responsibility has been discussed by philosophers (Sartre, 1943), writers (Bok, 1989), as well as in psychology (Sweeny et al., 2010).

Residents in Swedish municipalities that received a larger inflow of refugees read fewer newspaper articles about asylum seekers. Specifically, a 1 standard deviation increase in the number of refugees per capita reduces the click rate on refugee articles by 0.18 standard deviations. Similar results are found through the instrumental variable approach and are robust to altering the regression specification.

To isolate the mechanism of avoiding morally relevant information, I use text analysis methods to identify articles that may raise feelings of compassion toward the refugees.⁴ In particular, I classify headlines according to the sentiment that they may evoke. I find that the negative effect of an increase in the number of refugees per capita is 36% larger for the click rate of more empathic articles compared to other news that report neutral facts. Since these articles describe the refugees' poor living conditions and may increase empathy toward them, avoiding this information allows protecting oneself from the increased moral pressure of welcoming them. Using data from the Church of Sweden, I find suggestive evidence that the decline in clicks for empathic articles is correlated with less engagement in activities aimed at welcoming refugees. Studies in psychology and social media have found that information provided in headlines can affect readers' behavioral intentions (Ecker et al., 2014; Reis et al., 2015). In addition, experimental evidence suggests that empathy can interfere with moral decision making (Decety et al., 2016; Batson et al., 1983), as well as being a key predictor of support for social welfare (Delton et al., 2018). Interestingly, in a controlled experiment Shaw, Batson, and Todd (1994) find that subjects avoid hearing empathy-inducing information when they are given a high-cost opportunity to help someone in need. This so-called empathy avoidance is also discussed by, for example, Batson et al. (2004) and Richman, DeWall, and Wolff (2015), who support the mechanism proposed in this paper on the avoidance of morally charged information as a strategic device.

To guide the empirical analyses, I propose a motivated beliefs model based on Rabin (1995) in which an agent avoids information to protect his or her belief on moral actions. Several other models on belief manipulation in response to morally charged information have been proposed by the literature (Bénabou & Tirole, 2002; Nyborg, 2011; Grossman & Van der Weele, 2017; Thunström et al., 2014). The importance of motivated beliefs has also been recently stressed by Bénabou (2015) and Bénabou & Tirole (2016). However, the lack of an established theoretical framework on strategic avoidance of morally relevant information suggests the need for further investigation (Golman et al., 2017; Hertwig & Engel, 2016).

To the best of my knowledge, this is the first paper that tests avoidance of morally relevant information using observational data.⁵ Experimental evidence on strategic ignorance

⁴I also evaluate and extensively discuss the plausibility of additional mechanisms behind the decline in the click rate.

⁵Other studies have empirically tested the mechanisms behind information avoidance in other contexts different from moral behavior: selective

being used to escape responsibility has been presented in several previous studies. Using a modified version of the dictator game, Dana, Weber, and Kuang (2007) show that individuals choose the fair allocation between themselves and the recipients when they know about potential outcomes. However, when there is uncertainty about the amount they could give to the recipient, some participants decide not to know and choose a more selfish allocation for themselves.⁶ Yet little is known about avoidance of information that may encourage moral action outside laboratory experiments.

Several field experiments have found evidence of less generous actions when people are offered the opportunity to escape from moral responsibilities (DellaVigna, List, & Malmendier, 2012; Trachtman et al., 2015; Exley & Petrie, 2018; Andreoni, Rao, & Trachtman, 2017). This paper differs from these latter field experiments as I examine the avoidance of information that would encourage engaging into a moral action, while these studies focus on the avoidance of a known situation in which people could be asked to be generous.

II. Theoretical Framework

To guide the empirical analysis, I propose a motivated beliefs model based on Rabin (1995).⁷ The main idea is that an agent avoids information to protect his or her belief on a moral action (e.g., welcoming refugees) that is costly for the agent. The key assumption is that the agent takes actions under moral pressure, for example, to comply with a social norm. There are two states of the world (a bad and a good state) regarding the situation of refugees, and the agent has a belief on the bad state of the world. Following Rabin (1995), I assume the agent engages in the costly moral action if he holds a belief that is above a threshold. The agent can update his belief through a binary signal, which can be gathered by reading the news. The decision on the signal (information) acquisition depends on the benefits of the signal, given by the utility from reading, and its cost, which is the probability that the posterior is above the threshold times the cost of the moral action. If the agent holds a belief above the threshold before acquiring the signal, there is no cost of information acquisition. If the agent holds a belief that is very far below the threshold, the probability that the posterior is above the threshold is close to 0. For both scenarios, the agent is going to observe the signal (reading the news). If the agent holds a belief in a range below the threshold, there is a probability that the posterior is above the threshold and that he will

exposure to political news (Gentzkow & Shapiro, 2010; Garrett, Carnahan, & Lynch, 2013; Bakshy, Messing, & Adamic, 2015), refrain from getting medical tests' results (Oster, Shoulson, & Dorsey, 2013), or the outcome of investment decisions (Sicherman et al., 2016).

⁶Several other studies (Spiekermann & Weiss, 2016; Feiler, 2014; Thunström et al., 2014; Van der Weele, 2014; Grossman, 2014; Grossman & Van der Weele, 2017) have found similar results, suggesting that individuals may prefer to remain ignorant about other people's worse conditions in order not to feel compelled to act generously.

⁷A detailed and formal presentation of the theoretical framework is provided in the online appendix, section A.

engage in the costly moral action. Since for this agent the benefits of getting the signal (reading the news) are lower than its potential cost (holding a belief above the threshold and consequently welcoming refugees), the agent decides not to acquire information. Through Bayesian updating, I find that the range of beliefs leading to information avoidance has a lower bound, which negatively depends on the cost of welcoming refugees.

Suppose there is geographical variation in the number of refugees and that an exogenous shock (the crisis during fall 2015) increases the current number of refugees to n' . I assume that if the number of refugees remains under some critical cutoff $n' \leq n^*$, then the cost of welcoming refugees remains constant and there is no effect on either the posterior belief or the information acquisition. If instead the exogenous shock increases the number of refugees to above the cutoff $n' > n^*$, I assume that a larger presence of refugees increases the cost of welcoming them. Since the lower bound of the information avoidance range decreases for a larger cost of welcoming refugees, there is a larger range of beliefs for which the agent is better off not observing the signal.

Proposition 1. *The set of readers is a decreasing function of the number of refugees n , for $n > n^*$.*

III. Institutional Setup

Sweden is one of the EU countries with the highest number of asylum seekers per inhabitant (see online appendix figure B.1).⁸ In 2015, more than 160,000 people applied for asylum in Sweden, which corresponds to a 1.6% increase in the Swedish population.⁹ The increase in the number of asylum applications dramatically rose during the second half of 2015. In particular, the number of asylum seekers arriving in Sweden more than doubled from 2014 to 2015 (see online appendix, figure B.2). Moreover, the impact of this crisis was highly unexpected. The Swedish Migration Agency, which has the mandate to decide on asylum claims, was not prepared to welcome such a large number of people. Forecasts on the inflow of incoming refugees made by the agency in February, April, and July 2015 were 50% lower than the actual number of asylum seekers that arrived in Sweden by the end of 2015 (Swedish Migration Board, 2015).¹⁰

To identify a causal impact of an increase in the number of refugees, in this paper I focus on refugees waiting for their asylum decision.¹¹ The Swedish Migration Agency is responsible for providing accommodation to refugees in need of it

and therefore, allocates newcomers across Sweden according to its resources. Local governments have no influence on the assignment of asylum seekers who are welcomed during the waiting period. On the other hand, municipalities can decide the number of refugees who are accepted in the locality after asylum status has been granted. Thus, using the number of newcomers present in a municipality after the decision has been taken would bias the results since municipality characteristics may influence the distribution of refugees across Sweden.

A main challenge during the crisis in 2015 was the availability of accommodation to host the incoming refugees. Although the Swedish Migration Agency takes care of hosting the refugees, it does not own any housing or property. It relies on either rental contracts with legal entities or housing gained through public procurement. Private providers are usually hotels, resorts, and retirement homes. During 2015, additional bids of procurement were launched in order to meet the increased need for accommodation. Despite this, in November 2015, the Migration Agency announced that it had no more housing to welcome more refugees and asked for political intervention to reduce the inflow of people.¹²

IV. Data and Empirical Design

A. Data and Descriptives

Click data. I accessed property data on the number of page views (clicks) on refugee articles from the Swedish newspaper *Dagens Nyheter*. First, I selected all articles containing in the headline and/or body content one of the following keywords: *refugees* (*flyktingar*), *asylum seekers* (*asylsökande*), and *immigrants* (*invandrare*). These articles were published in the online version of the newspaper from February 1, 2015, to February 29, 2016. The total sample is 2,743 articles. Among all these articles, I selected those that were published in the “News” (*Nyheter*), “Economy” (*Ekonomi*), and “Stockholm” (*Sthlm*) online sections to avoid any bias of opinion pieces and other topical sections. The sample is then composed of 1,731 articles.¹³ For each article, I have the total number of page views (clicks) as well as the access location for each click at the municipality level. In addition, I have data on overall traffic on the online website for each month and municipality. I used this information to control for seasonality effect and variation in the usage of the online version of the newspaper across Sweden.

Figure 1 shows that on average, an article on refugees is clicked 52 times in a municipality, despite some variation during 2015. Both the absolute value of average clicks and

⁸Source: Eurostat.

⁹Source: Swedish Migration Agency.

¹⁰In February 2015, 90,000 people were expected to enter Sweden by the end of 2015 with a window (80,000–105,000) of good and bad scenarios; in April 2015, 80,000 people were expected within a window of 68,000–88,000, and in July 2015, 74,000 people were expected within a window of 66,000–80,000. In October 2015, the prognosis was 160,000, which was indeed the total number of asylum seekers arriving in 2015.

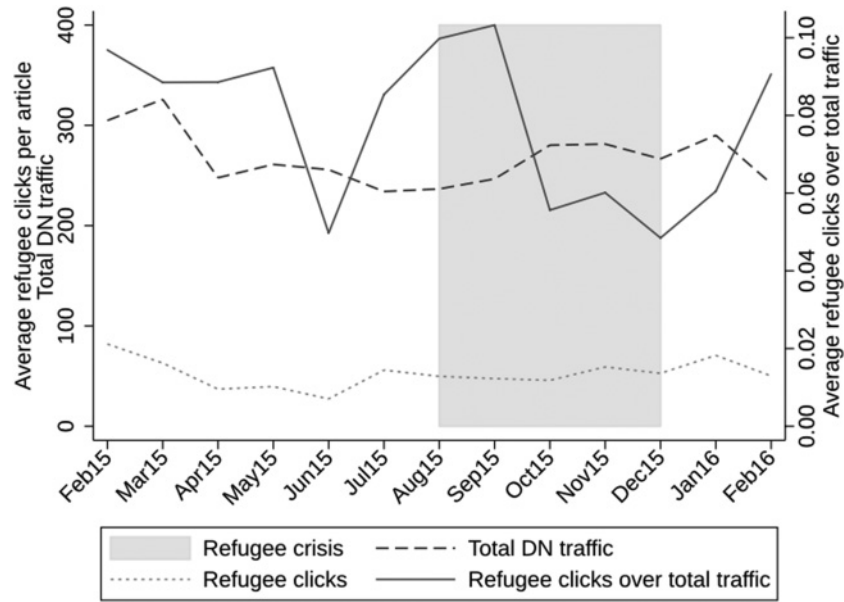
¹¹Although the main analysis is based on the number of asylum seekers (people still waiting for the decision on their asylum), throughout the paper I use the terms *refugee* and *asylum seeker* interchangeably. See online ap-

pendix section C for details on the asylum application process in Sweden in 2015.

¹²<http://www.migrationsverket.se/Om-Migrationsverket/Nyhetsarkiv/Nyhetsarkiv-2015/2015-11-19-Migrationsverket-kan-inte-langre-erbjuda-boende-till-alla-asylsökande.html>

¹³More details on the sample selection are given in online appendix section C.

FIGURE 1.—AVERAGE NUMBER OF CLICKS PER ARTICLE ON REFUGEES AND AVERAGE TOTAL DN TRAFFIC ACROSS MUNICIPALITIES PER MONTH



Descriptive graph on the absolute and relative number of clicks on refugee articles compared to the total traffic across Swedish municipalities in 2015. Solid line: average across municipalities per month of the mean number of clicks per article on refugees for each municipality and month divided by the total number of clicks in each municipality and month (the variable is scaled by 100). Dashed line: average across municipalities per month of total number of clicks in the complete website in each municipality and month (the variable is scaled by 1/1,000). Dotted line: average across municipalities per month of the mean number of clicks per refugee article for each municipality and month. Shaded area: period of the unexpected inflow of refugees to Sweden.

the ratio over the total online traffic are presented for each month. There are two sharp declines in the clicking behavior. The first, in June 2015, can be explained by some seasonality effect. The second occurs in October 2015 and lasts until January 2016, which corresponds exactly to the period when the refugee crisis hit Sweden. To better understand these two drops, I compare the average number of clicks divided by the total online traffic to the total traffic itself, as shown in figure 1. The first decline in June can indeed be explained by some seasonality effect.¹⁴ However, the decrease in the average clicks per article on refugees does not correspond to a decrease in the use of the website.¹⁵

Through text analysis methods, I classify the 1,731 articles in two broad categories based on their headlines. Indeed, the choice to click on an article (and consequently to read it) is based on the information hinted by the headline.¹⁶ Therefore, it is sufficient to analyze the words and messages conveyed by the headline. I first select a random training sample of 577 headlines (33% of the total sample) and classify them manually in two categories. One group is composed of articles that share the refugees' perspective in terms of their living conditions, their escape toward Europe, and other elements that may raise feelings of compassion. The other group collects all

other articles.¹⁷ Then I use the training sample to create and train a support vector machine (SVM) model. Based on the SVM classifiers, I classify all the remaining articles.¹⁸ Overall, the model identifies 534 articles that may raise empathy toward the refugees. An example of such articles is "Desperate Refugees Waiting at the Platform." The distribution over time of these empathic articles follows the same pattern of other refugee articles, with a sharp increase in the supply of news between September and November 2015 (see online appendix figure B.5 for the number of articles figure B.6 for the distribution of clicks for the two article categories).

Even though *Dagens Nyheter* is sometimes considered a "Stockholm paper," it is the biggest national Swedish newspaper that discusses news at a national level and is read across Sweden.¹⁹ Using data on the total online traffic in each municipality in August 2015 divided by the population in each municipality I find evidence that the coverage of the newspaper is widespread across Sweden (see online appendix figure B.7). Indeed, only 36 of 290 municipalities do not have any click data in my sample (see online appendix figure B.8 for a map of these municipalities).²⁰ The main concern would be if the municipalities where *Dagens Nyheter* is not read experienced a larger inflow of refugees compared to other parts of Sweden. However, the 254 municipalities for which

¹⁴Other potential seasonality effects are not present in clicking patterns for articles about other topics, such as accidents, as shown in online appendix figure B.3.

¹⁵The volatility in the click data is also present in the monthly changes, as shown in online appendix figure B.4.

¹⁶Several studies in linguistics, media, and psychology have shown that readers are affected by headings when processing informative text (Ifantidou, 2009; Ecker et al., 2014; Reis et al., 2015).

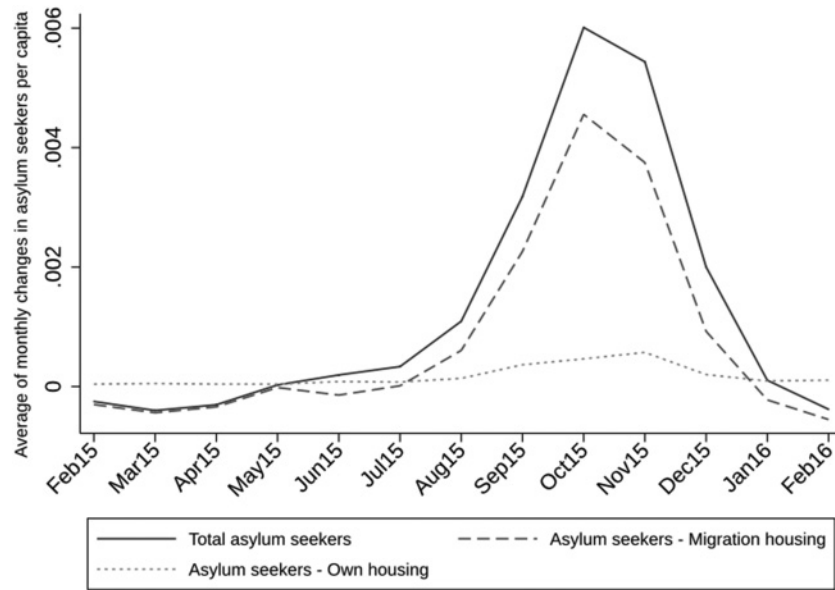
¹⁷These other articles still talk about the refugee crisis, but they convey other information and facts.

¹⁸More details about the text analysis are provided in online appendix section D.

¹⁹A more in-depth discussion on the news consumption of *Dagens Nyheter* versus other newspapers is provided in section VI.

²⁰More details about the 36 municipalities without click data are reported in online appendix section E.

FIGURE 2.—MONTHLY CHANGES IN ASYLUM SEEKERS PER CAPITA ACROSS MUNICIPALITIES PER MONTH



Changes in the number of asylum seekers arriving in Sweden between September 2015 and December 2015. Solid line: average across municipalities of the total number of asylum seekers waiting for the decision on their asylum. Dashed line: average across municipalities of the number of asylum seekers waiting for the decision on their asylum and living in Migration Agency housing. Dotted line: average across municipalities of the number of asylum seekers waiting for the decision on their asylum and living with family or friends.

I have click data welcomed 94% of all refugees arriving in Sweden both before and after the crisis. Finally, in terms of demographics of the online readers relative to the Swedish population, they are younger, but with education and income levels comparable to national averages.²¹ Overall, the results in this paper should be considered valid at least for the population of readers of *Dagens Nyheter*.

Refugee data. For each of the 290 Swedish municipalities and for each month from February 2015 to February 2016, I have the number of refugees registered at the Swedish Migration Agency and waiting for their asylum application. This number is decomposed into those living in housing organized by the Migration Agency and those providing for their own accommodation (usually with family and friends). The sharp increase in the number of asylum seekers happened between August 2015 and December 2015 (see online appendix figure B.9) and it is driven by those who live in the accommodation organized by the Migration Agency (see figure 2). The impact on public finances and local communities is likely to be larger for refugees living in public places. Thus, the clicking behavior is more likely to be affected if the rise in the number of refugees is due to the increase in this category of asylum seekers.

For each municipality and each month, I have the number of housing units administrated by the Migration Agency, as measured by the actual number of beds available to host the asylum seekers. As mentioned in section III, the Migration Agency can acquire new apartments and other build-

ings through rounds of public procurement. Thus, the housing availability in each municipality mainly depends on the offer by private companies and other entities present in the area. Figure 3 shows the relative change from February 2015 to February 2016 in the number of asylum seekers waiting for a decision on their asylum in all Swedish municipalities. Darker areas correspond to a larger change in number of asylum seekers relative to the Number in February 2015.²² The variation across municipalities in the percentage increase in the number of asylum seekers is going to be crucial for the identification strategy.

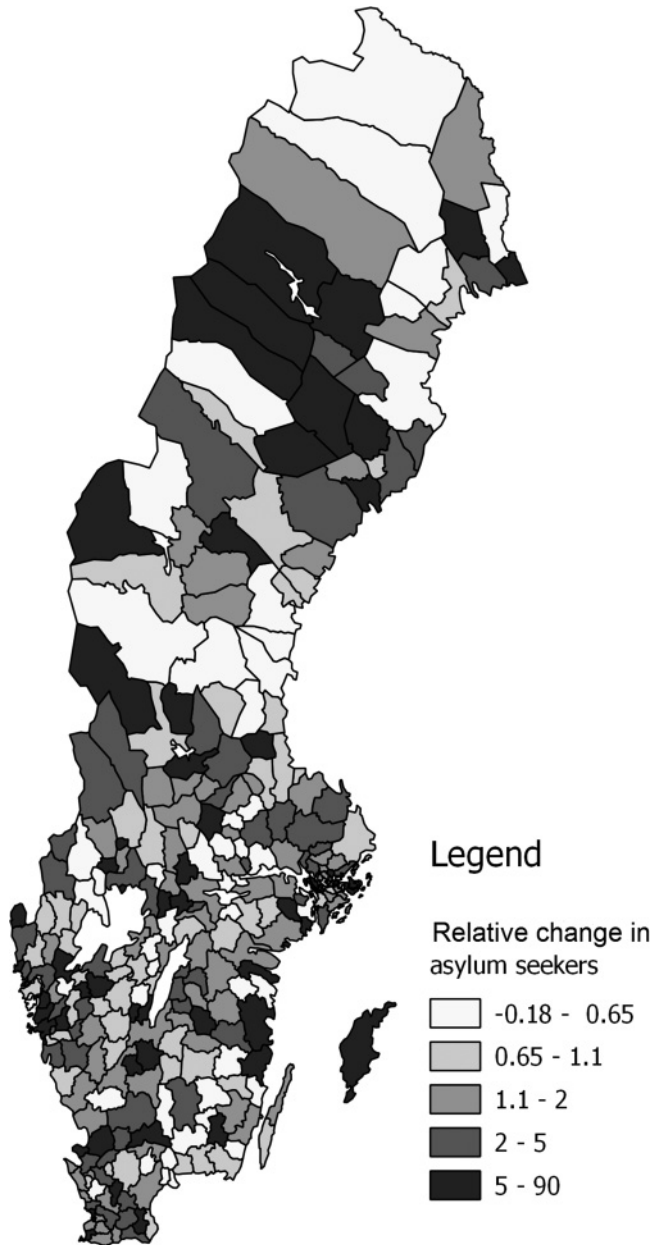
Table 1 reports descriptive statistics. Since data on the number of refugees are by municipality and month, I aggregate the click data by taking the average of clicks per article on refugees in each municipality and month. The total sample consists of 3,302 observations: 254 municipalities for thirteen months.²³ In terms of the classified articles, the average number of clicks on news articles that take the refugee perspective is higher than for the mean of all other articles. However, when weighting by the total online traffic of DN, the click rate on empathic articles is lower. Finally, on average, the number of refugees is 1.8% of the municipality

²²Earlier in 2015, the distribution of refugees was clustered around specific areas. However, after the beginning of the crisis in August 2015, the number of refugees started to increase dramatically in almost all municipalities, as shown in online appendix figure B.10.

²³For the main analysis, I drop seven outliers observations (in the 99 percentile of the distribution) for the number of clicks. There are seven observations in the number of clicks that are extremely high, and six of them are in February 2015. *Dagens Nyheter* was using a different algorithm to collect the click data up to that date, so the high number of clicks may be due to the transition to the new method; consequently, the data before February 2015 may not be accurate. Nonetheless, when including these seven observations, the results do not change.

²¹More detailed information about the usage of newspaper across Sweden and its representativeness across municipalities and time is provided in online appendix section C.

FIGURE 3.—RELATIVE CHANGE IN NUMBER OF ASYLUM SEEKERS BY SWEDISH MUNICIPALITIES



Relative change from February 2015 to February 2016 in the number of asylum seekers waiting for the decision on their asylum in all Swedish municipalities. Darker areas correspond to a larger change in number of asylum seekers relative to the number in February 2015. The number of asylum seekers is, on average, 4.3 times larger in February 2016 than February 2015.

population, with more than half of the asylum seekers living in accommodation organized by the Migration Agency.

People's engagement data. I had access to data from a survey run in October 2016 by the Church of Sweden on the activities and engagement of people in Sweden during the refugee crisis in 2015 (Hellqvist & Sandberg, 2016).²⁴ The

²⁴More details about the questions and methodology are provided in online appendix section C.

TABLE 1.—SUMMARY STATISTICS: CLICKS AND REFUGEES

| Variable | Mean | Std. Dev. | Median | # obs |
|--|--------|-----------|--------|-------|
| Dependent variable | | | | |
| Clicks | 52.31 | 363.96 | 9.93 | 3,302 |
| Clicks over total traffic | 0.087 | 0.324 | 0.028 | 3,302 |
| Clicks (w/o outliers) | 52.29 | 364.34 | 9.93 | 3,295 |
| Clicks over total traffic (w/o outliers) | 0.078 | 0.229 | 0.028 | 3,295 |
| Classified articles | | | | |
| Clicks on empathic articles | 58.89 | 405.53 | 11.27 | 3,079 |
| Clicks on empathic articles over total traffic | 0.058 | 0.135 | 0.027 | 3,295 |
| Clicks on other articles | 52.60 | 362.83 | 10.37 | 3,180 |
| Clicks on other articles over total traffic | 0.073 | 0.215 | 0.027 | 3,295 |
| Explanatory variable | | | | |
| Refugees | 433.80 | 655.67 | 262.5 | 3,302 |
| Refugees - Migration housing | 242.83 | 294.02 | 144 | 3,302 |
| Refugees - Own housing | 136.15 | 409.89 | 36 | 3,302 |
| Refugees per capita | 0.018 | 0.022 | 0.011 | 3,302 |

Clicks is the average number of clicks per article on refugees in month t and municipality i . *Clicks over total traffic* is divided by the total online traffic of DN in municipality i and month t . *Clicks (w/o outliers)* and *Clicks over total traffic (w/o outliers)* exclude seven outliers. *Clicks on empathic articles* is the average number of clicks per article taking the refugee perspective in month t and municipality i . *Clicks on other articles* is the average number of clicks per article for all other refugee news in month t and municipality i . *Refugees* is the number of refugees registered in the Migration Agency in municipality i in month t . *Refugees—Migration housing*, *Refugees—Own housing* refers to the number of refugees by type of accommodation: organized by the Migration Agency and self-organized, respectively. *Refugees per capita* is the total number of refugees divided by the population of municipality i at the end of 2015. The measures for clicks over total traffic are scaled by 100.

purpose of the survey was to assess the work in the Church of Sweden parishes with respect to refugees during the crisis. The survey was sent to 688 parishes and the collected answers represent areas from 224 Swedish municipalities. In particular, I have data on whether the parish organized an activity aimed at welcoming refugees (e.g., distribution of clothes, language cafés, mentoring), the number of volunteers involved in such activities, and whether the parish collected money for the work with refugees. Summary statistics are provided in online appendix table C.1. Compared to other data sources on donations and volunteering, this survey has two main advantages: (a) being based on an institution that is present in the entire country, it has comparable data about 77% of the Swedish municipalities, and (b) it has information on questions about donations and volunteering specific to the refugees and the crisis in 2015. Although Sweden can be considered a secular country, the Church of Sweden is an established institution, widespread across the country (60% of the Swedish population is member of the church), and during the crisis in 2015, it played a key role in managing activities and donations aimed at helping refugees (Hellqvist & Sandberg, 2016).

B. Identification Strategy

To identify a causal effect of the large inflow of refugees in Sweden on the click rate on refugee articles, I start by estimating the panel regression,

$$\text{Clicks}_{i,t} = \alpha_0 + \alpha_1 \text{Refugees}_{i,t} + \mu_i + \delta_t + \epsilon_{i,t}, \quad (1)$$

where $Clicks_{i,t} = avgClicks_{i,t}/totClicks_{i,t}$ is a measure for the clicking behavior on all 1,731 articles related to the refugees. In particular, for refugee articles published in month t , I take the average number of clicks in municipality i ($avgClicks_{i,t}$) and divide it by the total online traffic (total number of page views) of the website of the newspaper in municipality i and month t ($totClicks_{i,t}$). The latter controls for seasonality effects, as well as for geographical variation in the use of the online version of the newspaper. $Refugees_{i,t}$ is the number of asylum seekers registered in the Migration Agency in municipality i in month t . I divide this stock by the population of municipality i . Finally, unobservable determinants of the click rate that are fixed at the municipality level are captured by municipality indicators (μ_i), and common time shocks are absorbed by the month indicators (δ_t). Standard errors are clustered at the municipality level and robust to heteroskedasticity.

The hypothesis is that the effect of the number of refugees on clicking behavior should be negative, $\alpha_1 < 0$, implying that people living in a municipality where the number of refugees increased substantially read fewer articles related to the asylum seekers.²⁵

Key to the identification strategy is the sudden increase in asylum seekers that started in August 2015, a period often referred as the “refugee crisis.” The Migration Agency was not prepared to host such a large number of people and had to find housing for them quickly. Not surprisingly, the refugee crisis in Sweden in 2015 is often labeled as a “housing” crisis. Indeed, as figure 2 shows, the largest change in asylum seekers intake was driven by those living in housing organized by the Migration Agency. Moreover, such a large number of people in need of an accommodation put additional pressure on the national budget and related refugee policies. These issues suggest that the Swedish population was confronted with the moral dilemma of welcoming more refugees at the expense of an increase in their private or public costs, or both. Therefore, it is reasonable to assume that people may want to avoid information about refugees especially during the crisis.

To provide further emphasis on the (housing) crisis, I instrument the number of asylum seekers by the total stock of housing available to host them in each municipality and each month (weighted by the municipality population). This accommodation can vary over time and across municipalities since the Migration Agency can obtain several rental contracts from different geographical areas and can increase or decrease the amount of housing according to the demand from the inflow of refugees. Since the asylum seekers have the right to accommodation while waiting for their application to be processed, the correlation between housing available

in a municipality and number of refugees hosted in this area is likely to be positive and quite high. The exclusion restriction relies on the assumption that housing affects the clicking behavior only through the relative number of refugees. The availability of housing for the refugees in a municipality mainly depends on the economic activity in the area, and it is not an outcome of the general public opinion. Financial incentives of private companies are unlikely to be directly connected with the average clicking behavior in a municipality. In addition, municipality characteristics do not seem to correlate with the amount of housing (see online appendix table B.1). Thus, the effect that more housing could have on information acquisition about refugees is likely to occur only through the actual number of individuals who are hosted in these accommodations.

To focus on the mechanism, I estimate whether the effect of the inflow of refugees on the reading behavior differs across types of articles. This allows isolating a precise mechanism through which a larger number of refugees leads to a change in information acquisition.²⁶ To this end, I classify the headlines in order to identify those that take the perspective of the refugees and may encourage helping them. Hence, I estimate

$$\begin{aligned} Clicks_{i,j,t} = & \theta_0 + \theta_1 Refugees_{i,t} + \theta_2 Empathy_j \\ & + \theta_3 Refugees_{i,t} \times Empathy_j + \mu_i \\ & + \delta_t + u_{i,j,t}, \end{aligned} \quad (2)$$

where $Clicks_{i,j,t}$ is the normalized measure of clicks for articles of type j in municipality i .²⁷ $Refugees_{i,t}$ is the number of refugees per inhabitants, and $Empathy_j$ is an indicator variable for the type j of the article. In particular, $Empathy_j$ takes the value 1 if the article talks about the living conditions of the refugees, their escape to Europe, and other elements that may raise feelings of compassion, and 0 otherwise. The differential effect is given by the parameter θ_3 of the interaction term between the relative number of refugees and the type of article. The hypothesis is that this effect should be negative for articles that take the refugees’ perspective compared to other refugee articles, $\theta_3 < 0$. Municipality μ_i and month δ_t fixed effects are also included in the estimation.

C. Assessing the Identification Strategy

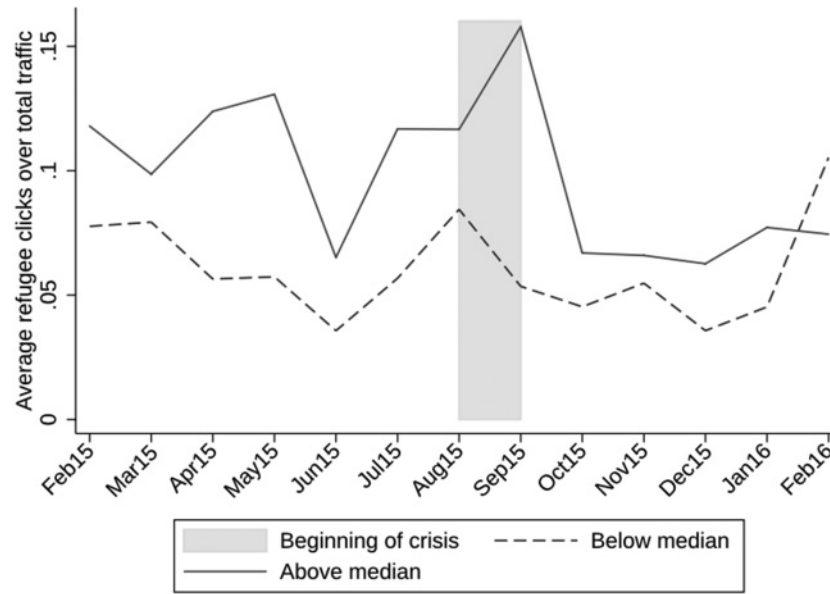
The goal is to estimate a decrease in the demand for refugee-related articles. However, the supply of articles may have also had an impact on the clicks. Since *Dagens Nyheter* is a national newspaper with identical display of news across municipalities and since I include month fixed effects (which

²⁵Since there could be unobservables that may correlate over time, I also run the same specification of equation (1) in first difference using as the dependent variable the change in the normalized number of clicks from month $t - 1$ to month t ($\Delta Clicks_{i,t}$) and the change in the ratio of refugees over population from month $t - 1$ to month t ($\Delta Refugees_{i,t}$) as explanatory variable. The results in first difference are qualitatively and quantitatively similar.

²⁶Alternative mechanisms are discussed in section VI.

²⁷I now calculate the average number of clicks for each type of article, that is, the average number of clicks per empathic article and the average number of clicks per nonempathic article. This implies a doubling of observations since for each municipality and each month, I have two measures of clicks— one for empathic articles and one for non-empathic articles.

FIGURE 4.—AVERAGE RELATIVE NUMBER OF CLICKS BY ASYLUM SEEKERS INTAKE



Average across municipalities per month of the mean number of clicks per article on refugees for each municipality and month divided by the total number of clicks in each municipality and month (the variable is scaled by 100). Solid (dashed) line: the average is for municipalities above (below) the median of the change in asylum seekers intake during the crisis. Shaded area: beginning of the refugee crisis in Sweden.

control for the number of articles), there is little reason to worry about an influence from the supply side. Moreover, since I weight the average clicks per article on refugees by the total traffic in each month and each municipality, I control for any unobservable time-varying demand factors that may correlate with refugee inflows. If people living in municipalities with more asylum seekers happen to be more involved in refugee-related initiatives, this would be taken into account by an overall decrease in the total traffic.

In addition, I analyze the parallel trends assumption of the fixed-effects estimation. Figure 4 shows the average number of clicks over total traffic for municipalities above or below the median of the change in the asylum seekers intake during the crisis (August–December 2017). The decline in clicks is more pronounced for municipalities whose change in the number of asylum seekers is above the median. Moreover, for such municipalities, the drop in news consumption is delayed by one month (September instead of August). This finding is in line with the housing situation organized by the Migration Agency. Only from September 2015 did the government agency start to allocate asylum seekers to municipalities with more housing availability, which resulted in a higher intake for such localities. Similar patterns are found if I separate the sample of articles between empathic and nonempathic articles. As shown in figure 5, the click rate falls more drastically for municipalities with a larger intake of refugees for both types of article, but the difference is starker for empathic articles. Finally, by estimating equation (1) with leads and lags of the explanatory variable, I do not find that the negative impact of an increase in asylum seekers on the click rate of refugee articles has any pretrend (see online appendix figure B.11). Findings are also robust when adding municipality-

specific quarter trends and county-specific time trends instead of month fixed effects.²⁸

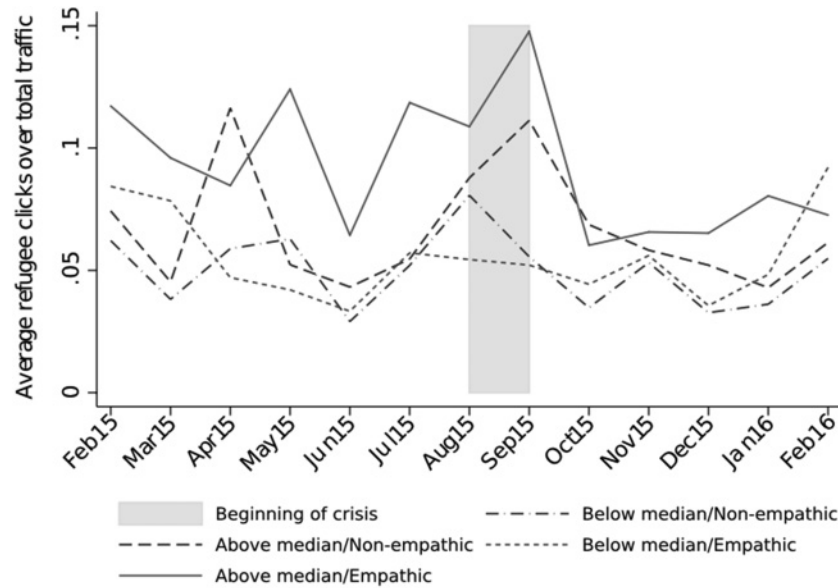
The key threat to the identification strategy is that there could be municipality characteristics that may influence the allocation of refugees and at the same time correlate with click patterns. All unobservables that are fixed at the municipal level are captured by the municipality indicators. Moreover, I regress municipality features-specific time trends on the click rate. Results show that any underlying trend in the clicks does not correlate with municipality characteristics, as the effect is very close to zero (see online appendix figure B.12).

Furthermore, I check the correlation between the number of refugees, who are under the responsibility of municipalities after the decision on their asylum application, and the number of asylum seekers, who are allocated by the Migration Agency across municipalities before the decision. If the temporary assignment before asylum decision is exogenous, the number of asylum seekers allocated by the Migration Agency to a municipality should be poorly correlated with the number of refugees with granted asylum already living in the same municipality in 2014 (or residing in that municipality after the asylum decision in 2016). Online appendix figure B.13 shows a small, positive correlation between asylum seekers welcomed in a municipality in October 2015 and refugees with granted asylum living in the same municipality in December 2014, December 2015, and October 2016.²⁹

²⁸The 290 Swedish municipalities are divided into 21 counties. See online appendix table B.2 for results.

²⁹The Pearson's correlation coefficient between the number of refugees waiting for their asylum allocated to a municipality and living in Migration

FIGURE 5.—AVERAGE RELATIVE NUMBER OF CLICKS BY ASYLUM SEEKERS INTAKE AND BY ARTICLE TYPE



Average across municipalities per month of the mean number of clicks per article on refugees for each municipality and month divided by the total number of clicks in each municipality and month (the variable is scaled by 100). Solid (dashed) line: the average is for municipalities above the median of the change in asylum seekers intake during the crisis for empathic (nonempathic) articles. Dotted (dash-dotted) line: the average is for municipalities below the median of the change in intake of asylum seekers during the crisis for empathic (nonempathic) articles. Shaded area: beginning of the refugee crisis in Sweden.

Similar patterns for this low correlation can also be found in 2013 and 2014, as shown in online appendix figure B.14.

Finally, graphical evidence on a more uniform distribution of refugees after August 2015 (see online appendix figure B.10), regardless of the presence of a Migration Agency office (see online appendix figure B.15), provides further support to the unexpected situation faced by the Migration Agency in fall 2015.³⁰

V. Empirical Analysis

A. Main Results

The first step in the analysis is to assess the relationship between the inflow of refugees and the clicking behavior across Swedish municipalities. Table 2 reports the results from the estimation of equation (1). Overall, a 1 standard deviation increase in the number of refugees per capita leads to a 0.18 standard deviation decrease in the predicted average clicks relatively to the total traffic. In panel A, I use the measures of clicks and refugees at the same month t . From columns 1 to 4, I gradually add municipality and month fixed effects. The impact of the inflow of refugees on the clicking behavior is negative when introducing municipality fixed effects, implying that the results are driven by within rather than between variation. Therefore, as also suggested by figure 3, the

main driver of the results is the difference across municipalities in the change over time of the number of refugees. Column 5 controls for a linear time trend instead of month fixed effects to capture any pattern in the clicking behavior, but the coefficient of interest is unaffected. Finally, column 6 shows similar results using the logarithmic measures for both dependent and independent variables.³¹

Results from the first stage of the 2SLS estimation are reported in table 2B. The correlation between the amount of accommodation and the number of refugees is positive and statistically significant. The strength of the instrument is supported by the value of the F -statistic that is much greater than the rule of thumb of 10 across all specifications. Using the predicted values for the relative number of asylum seekers, 2SLS estimates reported in panel C of table 2 are qualitatively and quantitatively similar to the OLS results, suggesting that the OLS estimates are still consistent. Findings are also robust when I add a linear time trend, instead of month indicators, to control for any clicking pattern.

In line with the argument of an unexpected arrival of asylum seekers, I find that the effect of refugee inflows on the click rate is specific to the crisis period. Figure 6 plots the estimated coefficients for the interactions of the relative number of refugees with time dummies for each month.³² The impact of refugee presence on clicking patterns becomes negative and statistically significant only after September 2015, which

Agency housing and the total number of refugees under the municipality responsibility in December 2014 is around 30% for each month in 2015. It is around 37% for the number of refugees with granted asylum in December 2015 and around 28% for the number of refugees with granted asylum in October 2016 (see online appendix table B.3 for details).

³⁰For a more detailed discussion, see online appendix section F.

³¹In online appendix tables G.1 and G.2, I assess the robustness of the results to further changes in the functional form of the variables and/or estimation.

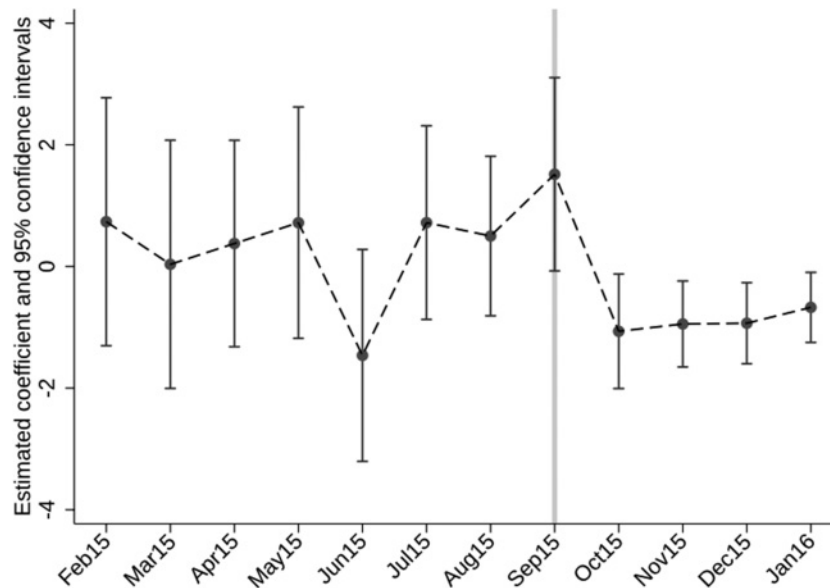
³²The results are shown in online appendix table H.1.

TABLE 2.—CLICKS AND REFUGEES: ALL ARTICLES ON REFUGEES

| A: OLS estimates | | | | | | |
|--|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| Dep. var.: Clicks _{<i>i,t</i>} | (1) | (2) | (3) | (4) | (5) | Logs (6) |
| Refugees _{<i>i,t</i>} | 0.802*** (0.296) | 1.064*** (0.366) | -1.672*** (0.484) | -1.875*** (0.717) | -1.881*** (0.701) | -1.286*** (0.468) |
| Municipality FE | | | ✓ | ✓ | ✓ | ✓ |
| Month FE | | ✓ | | ✓ | | ✓ |
| Linear time trend | | | | | ✓ | |
| <i>N</i> | 3,295 | 3,295 | 3,295 | 3,295 | 3,295 | 3,295 |
| <i>R</i> ² | 0.006 | 0.330 | 0.017 | 0.335 | 0.330 | 0.436 |
| B: First-stage estimates | | | | | | |
| Dep. var.: Refugees _{<i>i,t</i>} | (1) | (2) | (3) | (4) | (5) | (6) |
| Housing _{<i>i,t</i>} | | | 1.128*** (0.031) | 0.956*** (0.030) | 0.989*** (0.028) | |
| Municipality FE | | | ✓ | ✓ | ✓ | |
| Month FE | | | | ✓ | | |
| Linear time trend | | | | | ✓ | |
| <i>F</i> -statistic | | | 1,294.45 | 238.44 | 1,213.57 | |
| C: 2SLS estimates | | | | | | |
| Dep. var.: Clicks _{<i>i,t</i>} | (1) | (2) | (3) | (4) | (5) | (6) |
| Refugees _{<i>i,t</i>} | | | -1.760*** (0.515) | -2.004*** (0.712) | -1.940*** (0.693) | |
| Municipality FE | | | ✓ | ✓ | ✓ | |
| Month FE | | | | ✓ | | |
| Linear time trend | | | | | ✓ | |
| <i>N</i> | | | 3,295 | 3,295 | 3,295 | |
| <i>R</i> ² | | | 0.917 | 0.936 | 0.933 | |

The table reports fixed effects and IV coefficients from OLS and 2SLS regressions. The dependent variable *Clicks* in panels A and C is the measure of average normalized clicks in municipality *i* and month *t*. *Refugees* is the relative number of refugees registered in the Migration Agency in municipality *i* in month *t* (dependent variable in panel B). Column 5 controls for a linear time trend, and column 6 uses logarithmic measures. *Housing* is the relative number of available beds to host asylum seekers in municipality *i* and month *t*. Standard errors clustered at municipality level in parentheses. Significant at ***1%, **5%, and *10%.

FIGURE 6.—EFFECT OF REFUGEES PER CAPITA ON CLICK RATE BY MONTH



Estimated OLS coefficients and 95% confidence intervals using as independent variables the interactions between refugees per capita and month dummies and as dependent variable the number of clicks on articles about refugees divided by the total online traffic.

TABLE 3.—CLICKS AND REFUGEES: EMPATHIC ARTICLES

| Dep. var.: Clicks _{<i>i,j,t</i>} | Whole sample OLS | Whole sample 2SLS | Nonempathic OLS | Empathic OLS | Nonempathic 2SLS | Empathic 2SLS | Ratio empathic to nonempathic |
|--|---------------------|----------------------|--------------------|---------------------|---------------------|---------------------|----------------------------------|
| Refugees _{<i>i,t</i>} | -0.984* (0.553) | -1.020* (0.554) | -0.672 (0.503) | -1.651** (0.730) | -0.677 (0.571) | -1.836** (0.717) | -0.555 (0.363) |
| Empathy _{<i>j</i>} | -0.009* (0.005) | -0.007 (0.005) | | | | | |
| Refugees _{<i>i,t</i>} × Empathy _{<i>j</i>} | -0.356* (0.184) | -0.472** (0.220) | | | | | |
| Municipality FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Month FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>N</i> | 6,590 | 6,590 | 3,295 | 3,295 | 3,295 | 3,295 | 3,203 |
| <i>R</i> ² | 0.237 | 0.237 | 0.252 | 0.315 | 0.252 | 0.315 | 0.295 |

The table reports fixed-effects coefficients from OLS and 2SLS regressions. The dependent variable *Clicks* is the measure of average normalized clicks in municipality *i*, month *t*, and article *j*. *Refugees* is the relative number of refugees. *Empathy* is an indicator variable of the article taking the value 1 if the article is about the refugees' perspective. In columns 2, 5, and 6, *Refugees* is the predicted relative number of refugees from a first-stage regression using *Housing* as instrument. *Housing* is the relative number of available beds to host asylum seekers. Column 7 uses as dependent variable the ratio of average clicks on empathic articles over the sum of average clicks on empathic and nonempathic articles in municipality *i* and month *t*. Standard errors clustered at municipality level in parentheses. Significant at ***1%, **5%, and *10%.

highlights the sudden effect of the crisis. The only exception is June 2015, due to a seasonality effect in this month.

Finally, in terms of intensity of the treatment, I examine the effect of refugees per capita on the click rate through a quantile regression. As shown in online appendix figure B.16, the negative effect of refugees per capita on the click rate is mainly driven by the change from the 25th to the 50th percentile of the refugees per capita variable distribution. Indeed, after the 50th percentile, the impact is quite constant.³³ This result suggests that most of the effect is from municipalities moving from very few to some refugees rather than by municipalities that already had a substantial number of asylum seekers.

Having established a negative relationship between the inflow of refugees and the reading behavior, I analyze the mechanism through which people living in municipalities with a larger relative number of refugees have decreased their reading behavior on articles related to refugees. In particular, I estimate whether there is a different pattern for articles that take the perspective of the refugees and highlight their poor conditions. The results from the estimation of equation (2) are reported in table 3. The sample size is twice as large since there are two measures of clicks for each municipality and month, that is, the average number of clicks per empathic article and average number of clicks per nonempathic article.³⁴ The coefficient on the variable *Refugees_{*i,t*}* shows a negative and statistically significant impact on the number of normalized clicks, as expected from previous analyses. If the article describes the poor conditions of the asylum seekers' *Empathy_{*j*}*, there is also a decrease in the clicking behavior. Most important, the coefficient on the interaction term *Refugees_{*i,t*} × Empathy_{*j*}* shows that the number of refugees decreases even more the number of clicks for articles that take the refugees' perspective compared to the other articles. In particular, the negative effect of an increase in the relative

number of asylum seekers is 36% larger for empathic articles compared to nonempathic news. This result provides support in favor of the hypothesis that when there is a larger opportunity to help someone in need, people tend to avoid empathic information to a larger extent, in line with the results found by Shaw et al. (1994).

Similar findings are found by instrumenting the number of refugees with the amount of housing available to host them, as reported in column 2 in table 3. Moreover, by running the analysis separated for the two samples of articles (i.e., using only empathic or only nonempathic articles), I find that the effect of refugees on the click rate is negative for both types of news but statistically significant only for empathic articles (see columns 3 to 6 in table 3). Furthermore, similar qualitative findings (though not statistically significant) are found using a ratio of the clicks on empathic articles over the sum of clicks on both article samples (see column 7 in table 3).³⁵

B. Additional Results

In addition to the main analyses, I examine whether news about the refugees' situation in neighboring countries (Norway, Denmark, and Finland) affects the reading pattern to a lesser extent since people in Sweden are not directly affected. I restrict the sample to articles that concern Sweden and its neighboring countries. The impact of the relative number of refugees on the click rate is negative and

³³The effect is also stable between the 5th and the 25th percentile. For example, the coefficient on refugees per capita is about -0.19 for the 15th percentile, as reported in column 5 of online appendix table G.1.

³⁴Similarly to the previous analyses, I drop fourteen observations that are outliers for the click data (in the 99th percentile of the distribution) and are related to February 2015.

³⁵Using survey data from the Church of Sweden, I also investigate the relationship between the relative change in the click rate of empathic articles and people's engagement in activities related to the refugees. Online appendix table H.2 provides suggestive evidence on a positive relationship between an increase in the click rate for empathic articles and people's involvement in welcoming refugees. Similarly, using opinion polls from the SOM survey 2015 and 2016 (University of Gothenburg, 2018), I find that a decline in clicks for empathic articles is correlated with more negative attitudes toward the refugees after the crisis. The lack of statistical significance for most of the estimates can be linked to the limited number of observations. However, at least for the organization of activities welcoming refugees, there is some evidence that empathy avoidance is correlated with less engagement of people, as also suggested by Batson et al. (1983), Shaw et al. (1994), Batson, Ahmad, and Stocks (2004), and Richman et al. (2015).

TABLE 4.—SWEDEN VERSUS NEIGHBORING COUNTRIES RESULTS

| Dep. var.: Clicks _{<i>i,t</i>} | OLS | | 2SLS | |
|--|----------------------|-------------------|----------------------|--------------------|
| | Swedish news | Neighbors news | Swedish news | Neighbors news |
| Refugees _{<i>i,t</i>} | -1.343*** (0.496) | 0.112 (0.153) | -1.546*** (0.509) | 0.321** (0.152) |
| Municipality FE | ✓ | ✓ | ✓ | ✓ |
| Month FE | ✓ | ✓ | ✓ | ✓ |
| <i>N</i> | 3,295 | 3,295 | 3,295 | 3,295 |
| <i>R</i> ² | 0.280 | 0.181 | 0.280 | 0.181 |

The table reports fixed-effects coefficients from OLS regressions in columns 1 and 2 and IV coefficients from 2SLS regressions in columns 3 and 4 using a subsample of news about refugees in Sweden and articles about refugees in neighboring countries (Norway, Denmark, Finland). The dependent variable *Clicks* is the measure of average clicks in municipality *i* and month *t* divided by the total online traffic of DN in municipality *i* and month *t*. *Refugees* is the number of refugees registered in the Migration Agency in municipality *i* in month *t* divided by the population of municipality *i*. In columns 3 and 4, *Refugees* is the predicted number of refugees per inhabitants from a first-stage regression using *Housing* as instrument. *Housing* is the number of available beds to host asylum seekers in municipality *i* and month *t* divided by the population of municipality *i*. Standard errors clustered at municipality level in parentheses. Significant at ***1%, **5%, and *10%.

TABLE 5.—RESULTS BY REFUGEES' ACCOMMODATION TYPE

| Dep. var.: Clicks _{<i>i,j,t</i>} | Migration housing | Own housing | Migration housing | Own housing |
|--|----------------------|-------------------|----------------------|----------------------|
| Refugees _{<i>i,t</i>} | -2.036** (0.799) | -1.692 (3.225) | -1.061* (0.617) | -0.182 (2.755) |
| Empathy _{<i>j</i>} | | | -0.009* (0.005) | -0.019*** (0.007) |
| Refugees _{<i>i,t</i>} × Empathy _{<i>j</i>} | | | -0.439** (0.214) | 1.509** (0.761) |
| Municipality FE | ✓ | ✓ | ✓ | ✓ |
| Month FE | ✓ | ✓ | ✓ | ✓ |
| Refugees _{<i>i,t</i>} + Refugees _{<i>i,t</i>} × Empathy _{<i>j</i>} | | | -1.499** (0.667) | 1.326 (2.567) |
| <i>N</i> | 3,295 | 3,295 | 6,590 | 6,590 |
| <i>R</i> ² | 0.335 | 0.330 | 0.237 | 0.233 |

The table reports fixed-effects coefficients from OLS regressions on subsamples of refugees based on the type of accommodation (*Migration housing* is housing provided by the Migration Agency; *Own housing* is when the refugee joins family or friends). The dependent variable *Clicks* is the measure of average clicks in municipality *i* and month *t* divided by the total online traffic of DN in municipality *i* and month *t*. *Refugees* is the number of refugees per inhabitants living in Migration Agency housing (column 1) or living in their own housing (column 2). *Empathy* is an indicator variable of articles taking value 1 if the article is about the refugees' perspective and 0 otherwise. Standard errors clustered at municipality level in parentheses. Significant at ***1%, **5%, and *10%.

statistically significant for Swedish news (for both OLS and 2SLS estimates, columns 1 and 3 of table 4), while it is positive for articles related to the neighboring countries (for both OLS and 2SLS estimates, columns 2 and 4 of table 4). These results provide further support that when the information about the refugee situation could encourage a direct action from people, there is more avoidance of such information.

Moreover, I investigate whether the number of asylum seekers could have different effects to the clicking behavior according to the type of accommodation the refugees live in. I find that the negative effect on the clicking behavior is stronger for asylum seekers living in the Migration Agency accommodation compared to asylum seekers who joined family and friends (see columns 1 and 2 of table 5). The decline in clicks for empathic articles is negative for refugees in need of accommodation and positive for self-sufficient newcomers (see columns 3 and 4 of table 5).³⁶

³⁶The results are also robust when housing per capita is an instrument for the measure of refugees living in Migration Agency housing, as shown in online appendix table B.4.

These results corroborate the argument that there is more awareness (and potentially higher costs for the natives) of refugees living in public housing, and therefore an increase in their number may have a bigger negative effect than a change in the number of refugees who live in private homes.

C. Robustness Checks

To further validate the empirical findings, I perform several tests and controls, presented in online appendix section G. The negative effect of asylum seekers presence on the clicks is not driven by variation in the access or usage of *Dagens Nyheter*.³⁷ Results are also robust to changes in the presence of refugees who have already been granted asylum before and during the crisis.³⁸

To check that the results are specific to the classification of the articles based on empathy, I use two alternative classifications for the articles. First, I restrict the sample to articles that were published in the "Sweden" and "World" sections of the newspaper and classify them in these two categories. In particular, *Sweden_j* takes the value 1 if the article was published in the "Sweden" section and 0 if the section is "World." The results in column 1 of table 6 show that the coefficient on the interaction term between number of refugees and articles about Sweden is positive and statistically insignificant. Moreover, the effect is almost halved compared to articles that emphasize empathy for the refugees.

The other alternative classification identifies whether the decrease in clicks may be due to a general avoidance of all articles addressing refugees. If there is an overcrowding of news on the same topic, people may read fewer articles on that subject. Therefore, I identify articles that have the word *refugee* or *asylum seeker* in the headline. In this case, *Word "refugee"_j* takes the value 1 if the headline contains one of the two key words and 0 otherwise. Results in column 2 of table 6 show that there is indeed a decrease in the number of clicks for articles with the specific refugee words, but the negative effect is not bigger for these articles compared to the others. These findings using alternative classifications provide further support that the negative impact of the refugees on the clicking behavior hinges on the particular avoidance of empathy-related information.³⁹

To check the unexpected effect of the crisis, I run a placebo test where I estimate the effect of refugees per capita from September 2015 to February 2016 on the click rate from

³⁷The results are robust when I exclude data from Stockholm, where *Dagens Nyheter's* headquarters are located; municipalities with a limited use of the newspaper; municipalities with a strong penetration of local newspapers; and municipalities with large-traffic airports where reading behavior may be different.

³⁸Excluding data from municipalities that previously did not welcome refugees, excluding data from municipalities that are in the top 5% and bottom 5% distribution of the variable asylum seekers per capita, and controlling for the presence of refugees with already granted asylum do not alter the results.

³⁹The results are also robust when using 2SLS estimates with housing per capita as instrument for the measure of refugees, as shown in online appendix table B.5.

TABLE 6.—ALTERNATIVE CLASSIFICATIONS AND PLACEBO TESTS

| Dep. var.: Clicks _{<i>i,t</i>} | Alternative Classification | Alternative Classification | Clicks March 15–August 2015 | Other major news | Accidents |
|--|-------------------------------|-------------------------------|--------------------------------|---------------------|-------------------|
| Refugees _{<i>i,t</i>} | −0.838*** (0.261) | −1.302** (0.545) | | 0.808 (0.816) | −0.459 (0.752) |
| Sweden _{<i>j</i>} | 0.016*** (0.005) | | | | |
| Refugees _{<i>i,t</i>} × Sweden _{<i>j</i>} | 0.151 (0.131) | | | | |
| Word “refugee” _{<i>j</i>} | | −0.011** (0.005) | | | |
| Refugees _{<i>i,t</i>} × Word “refugee” _{<i>j</i>} | | 0.127 (0.123) | | | |
| Refugees _{Sept ’15–Feb ’16} | | | 1.395 (0.975) | | |
| Municipality FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Month FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Refugees _{<i>i,t</i>} + Refugees _{<i>i,t</i>} × Sweden _{<i>j</i>} | −0.686** (0.288) | | | | |
| Refugees _{<i>i,t</i>} + Refugees _{<i>i,t</i>} × Word “refugee” _{<i>j</i>} | | −1.175** (0.554) | | | |
| <i>N</i> | 6,590 | 6,590 | 1,524 | 3,295 | 3,295 |
| <i>R</i> ² | 0.209 | 0.255 | 0.334 | 0.118 | 0.113 |

The table reports fixed-effects coefficients from OLS regressions. The dependent variable *Clicks* is the measure of average normalized clicks from March 2015 to August 2015 in column 3. *Refugees* is the relative number of refugees from September 2015 to February 2016 in column 3. *Sweden* takes the value 1 if the article has been published in the “Sweden” section. *Word “refugee”* takes the value 1 if the article has the word *refugee* in the headline. Column 4 uses articles on other major events in 2015. Column 5 uses articles talking about accidents. Standard errors clustered at municipality level in parentheses. Significant at *** 1%, ** 5%, and * 10%.

March 2015 to August 2015. As shown in column 3 of table 6, the effect is positive and not statistically significant, implying that the negative impact on the clicking behavior is key to the crisis period.

The refugee crisis was one of the main topics in the Swedish news during 2015. However, other main events raised equal attention. Therefore, as a placebo test, I examine whether the number of refugees per capita could have an effect on reading articles that report on other major events in 2015. In particular, I had access to click data on articles mentioning the Greek debt crisis, the earthquake in Nepal, the terrorist attacks in Europe, the U.S. presidential election, and conflicts in Africa. All of these articles were published in the same period as my original sample of refugee articles. Since these events did not have media coverage throughout all the months, I combine the data in a unique data set in order to have variation over time. Using click data on these articles, I run a similar estimation of equation (1). Results reported in column 4 of table 6 show that the coefficient for refugees per capita is not statistically significant and the sign is even positive.

In addition to the major events in 2015, I obtained click data for a set of articles about accidents.⁴⁰ This type of article may also raise feelings of compassion and empathy as some of the refugee articles do, and therefore it could be a good comparison. Moreover, it is a news topic that got media attention throughout the period of my analysis. I thus replicate the estimation of equation (1) using click data on these articles about accidents. Results reported in column 5 of table 6

show a negative but not statistically significant effect on the number of refugees per capita. Overall, I conclude that an increase in the presence of refugees in a municipality leads to avoidance only of information that may encourage helping the asylum seekers.

VI. Alternative Mechanisms

A. Extensive Exposure to Refugees as Alternative Source of Information

If many asylum seekers are present in a municipality, it could be easier to acquire information about their conditions through firsthand experiences. People may not need to read newspaper articles about refugees, since they already have information about the situation.

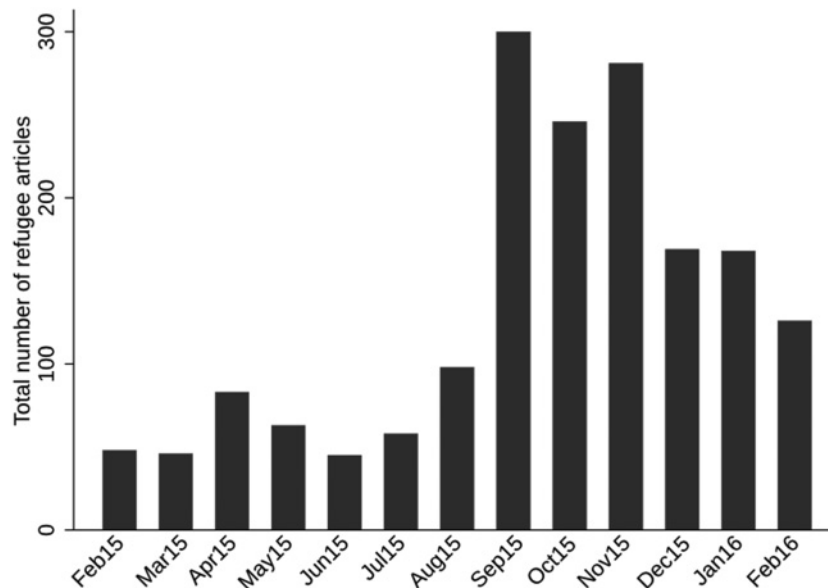
I assess whether the effect of the inflow of refugees on the clicking behavior varies across municipalities that had a differential exposure to refugees. Results are reported in online appendix table B.6. Column 1 shows that the overall effect of the relative number of refugees is larger for municipalities without a Migration Agency office.⁴¹ This result is consistent with the hypothesis that these areas were more affected by the inflow of refugees because they were not accustomed to welcoming many asylum seekers before the crisis.⁴² Column 2 restricts the sample to municipalities that hosted a number of refugees above or below the national average throughout all months in my sample. As expected, the overall effect of

⁴¹See online appendix figure B.17 for a map of the offices.

⁴²See online appendix table B.7 for descriptives on the number of refugees and online appendix figure B.18 for descriptives on the clicks by Migration Agency office.

⁴⁰These articles contain the Swedish term for accident (*olycka*) and generally refer to car accidents, plane crashes, and other similar forms of unfortunate incidents.

FIGURE 7.—TOTAL NUMBER OF ARTICLES ON REFUGEES PER MONTH



Distribution from February 2015 to February 2016 of 1,731 articles published in the Swedish newspaper *Dagens Nyheter* that discuss the refugee crisis.

the relative number of asylum seekers is larger for areas that welcomed more refugees.⁴³ Moreover, in column 3 I restrict the sample to municipalities where the number of refugees switched from below (above) to above (below) the national average after September 2015. Interestingly, the negative effect of the relative number of refugees is larger for localities that moved from above to below the average.⁴⁴

Finally, I do not find evidence of increasing returns in the number of asylum seekers. By estimating the squared term of the relative number of refugees, I find that the second-order effect is larger.⁴⁵ However, as implied by the value of the adjusted R^2 , the model does not improve the goodness-of-fit of the data by introducing the quadratic term, suggesting that the relationship between refugees per capita and number of clicks is mainly linear. Overall, these findings suggest that the effect was larger for a sudden inflow of refugees rather than a prolonged experience.

B. Substitution of Other Newspapers

People may have substituted *Dagens Nyheter* with other newspapers that could have provided more detailed information about refugees' conditions. In particular, they may have opted for local newspapers.

Using data from Google Trends, which provide an index of popularity on a scale from 0 to 100 for all search terms, I create a proxy for the demand of local newspapers at a

monthly level for each municipality.⁴⁶ The results reported in columns 3 of online appendix tables G.3 and G.4, where I control for the demand of local newspapers, show that the effect of refugees on the click rate is unchanged. I find similar results when I exclude municipalities with strong penetration of local newspapers (see columns 4 of online appendix tables G.3 and G.4). Therefore, demand for local newspapers does not alter the findings. In addition, I check for differences in the number of searches on Google for opinion blogs between places that received a refugee intake above the national average and those below the average. Specifically, I look at the search term *Avpixlat*, a website that is known to publish news with strong (usually negative) opinions on immigration. Places with fewer refugees tend to search less for this website, but the difference over time is unaffected, suggesting that there is no substitution effect toward other news outlets as result of the increase in refugees (see online appendix figure B.20). Finally, using data from the 2015 SOM survey (University of Gothenburg, 2017), I do not find any correlation between the click rate on articles about refugees and the level of trust toward the content of *Dagens Nyheter* (see column 7 in online appendix table G.3).

C. Crowding-Out Effect of News

Reading behavior can be affected by the number of articles published each month. Since the refugee crisis was a salient event in Sweden, from September to November 2015 more articles were published about the refugees, as shown in figure 7. People may have selected only a few articles to read about

⁴³See online appendix figure B.19 for descriptives on the clicks by magnitude of the refugee intake.

⁴⁴All results are also robust when using 2SLS estimates with housing per capita as instrument for the measure of refugees, as shown in online appendix table B.8.

⁴⁵See column 4 of online appendix table H.1 for results.

⁴⁶See online appendix table G.5 for a list of all Swedish local newspapers and related municipalities.

the topic, in particular after the outbreak of the crisis, reducing the click rate per article.

The total number of clicks on refugee articles increases over time, especially between September 2015 and January 2016, both separately for each month and cumulatively (see online appendix figures B.21 and B.22). This finding suggests that the increase in number of articles was matched with a positive response in the number of clicks. Indeed, the decline in clicks hinges on the within-variation across municipalities. Moreover, empathic articles are much fewer than all other articles, and I do not observe a decline in the cumulative distribution over time (see online appendix figure B.23). Therefore, the larger negative effect cannot be explained by a crowding-out effect or less content of these empathic news. Furthermore, the impact of refugee presence on the click rate is negative in the months when the number of articles was smaller (December 2015–February 2016). Finally, the findings are robust when using the total number of clicks instead of the average, as shown in column 1 of online appendix tables G.1 and G.2. Therefore, a larger number of articles seems not to have negatively affected the reading patterns.

D. Change in Opinion toward Refugees

The reduction in click rate may have been the consequence of a change in opinion toward refugees. A bigger exposure to asylum seekers or a sudden rise may have shifted public opinion from positive acceptance of newcomers to increased opposition. Moreover, people could have clicked less often on refugee articles because they held negative sentiments toward the asylum seekers.

Using data from the SOM survey in 2015 (University of Gothenburg, 2017) on the question “Do you think it is a good proposal to accept fewer refugees?” I can divide municipalities between those that have a positive opinion toward the newcomers (above the national average 2.79) and those that have a more negative attitude (below the average). Results presented in column 4 of online appendix table B.6 do not show any statistically significant differential effect for pro-refugee municipalities, limiting the possibility that people living in previously positive municipalities were overwhelmed by the huge inflow and read fewer articles due to a more negative opinion. This finding is also in line with the results previously discussed on the absence of a relative difference in Google search for opinion blogs with negative sentiments against immigration.

In addition, from the sample of all collected newspaper articles, I can select those that are in the sections “debate,” “culture,” and “editorial” and in several blogs and run an estimation of equation (1) using click data for these articles. The results are shown in online appendix table B.9. The presence of refugees has a negative impact on the click rate of all three categories of articles; however, the effect is not statistically significant for opinion pieces and cultural articles. Overall, there is no strong evidence that the decrease in the clicking behavior is due to opinion changes.

VII. Conclusion

It is a fundamental tenet of single-person decision theory that more information improves individual decision making. However, this study provides evidence that individuals may avoid getting information, even if it is free and relevant. Using the 2015 Swedish refugee crisis, I examine whether people opted for strategic ignorance as an attempt to reduce the moral pressure on welcoming a larger number of asylum seekers. Combining click data from the leading Swedish newspaper and administrative data on refugees in Sweden, I find that people living in municipalities where the relative number of asylum seekers has been larger read less news about refugees. The decrease in information acquisition is 36% larger for articles whose headlines contain more empathic words, potentially raising feelings of compassion toward the refugees.

A model of motivated beliefs illustrates that individuals avoid information to protect their belief on moral actions. In particular, agents can deliberately choose to remain ignorant and escape the responsibility of a morally binding action. In line with experimental evidence on empathy avoidance as a driver for less prosocial behavior (Shaw et al., 1994), suggestive evidence shows that the decline in clicks for empathic articles positively correlates with less engagement in activities toward the refugees.

Assistance to asylum seekers does not necessarily have to imply material or direct monetary help, but it could take indirect forms of support, like local taxation or public good provision. Preliminary analysis in online appendix table H.4 shows that the negative impact of refugee presence on the click rate is larger for municipalities with a lower share of votes of the right-wing party (Sweden Democrats), which has strong anti-immigration motives. This finding suggests that information avoidance has been larger in localities that have been more positive on immigration. It follows to examine whether less knowledge about the refugees could eventually lead to more restrictive immigration policies (Koch et al., 2017). Overall, the evidence in this paper suggests the need for a more comprehensive theory on strategic ignorance and moral responsibility, which can have several implications in the real world, such as welcoming refugees.

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