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Post-migration fertility preferences and social norms: Experimental evidence from forced migrants *

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Abstract

Do migrants want to conform to the host country social norms? We examine this question in the fertility domain with an RCT evaluating the impact of receiving information about native fertility norms on the fertility preferences, intentions, and beliefs of forced migrants. The treatment reduces migrants' expectations about natives' actual and desired fertility. Information lowers the probability of intending to have a child within two years and within five years, and the ideal number of children, both of which are correlated with future pregnancies among sample households, and affects concerns about stigmatization based on family size. Effects are stronger among men and more religious individuals. In these groups, they persist even 7-8 months after the intervention. They are not driven by priming effects and point to a specific role of natives' norms. Indeed, a second treatment providing information about the fertility of migrants from the same group has no statistically significant impact on intentions and weaker effects on the ideal number of children. Our findings are consistent with a framework in which migrants are misinformed about natives' social norms and update their beliefs when exposed to new information.

Keywords: Forced migration; Fertility preferences; Social norms; Information frictions; Cultural integration; Belief updating; Randomized controlled trial.

JEL Codes: J31, F22, D83, C93.

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1 Introduction

Migration exposes individuals to new social norms in the country of destination. Migrants may adjust their own preferences and behaviors in response, through a process of cultural integration, even in domains not directly targeted by integration policies, such as fertility. Over time and generations, migrants’ fertility tends to converge toward native levels, but the extent to which this depends on cultural integration remains incompletely understood. As migrants spend time in the host society, they gradually discover prevailing social norms and may be influenced by them. Do migrants want to conform to native norms, and does providing information about native norms accelerate their convergence? Does this hold in the fertility domain?

In this paper, we study the role of descriptive social norms in shaping the convergence of migrants’ fertility preferences and intentions using a Randomized Controlled Trial (RCT), involving 1,600 Syrians under temporary protection in Türkiye (hereafter Syrian migrants). In our experiment, we provided the treated group with information about the fertility norms and attitudes of natives, based on official statistics and large-scale survey findings. We then measured the impact of information on their own fertility intentions, perceived stigma regarding their fertility decisions, and beliefs about natives’ fertility behavior, comparing treated individuals to a control group receiving no information.

Our design allows us to study whether migrants respond to the descriptive social norms of the host society about fertility, a domain that is usually not targeted by integration policies. Indeed, we provided a second treatment group with information about the fertility behavior of Syrian migrants. This allows us to disentangle the direct effect of natives’ social norms from migrants’ peers’ norms on fertility, or priming effects. We study both the immediate effects of information provision, as well as medium-term effects, with a follow-up survey with the same individuals 7 to 8 months after the baseline.

Our setting, involving forced migration of Syrians to Türkiye due to the civil conflict that started in 2011, is well suited to study the adaptation of fertility norms. First, as we explain in detail below, differences between natives’ and migrants’ fertility rates are very large. Second, given the forced nature of Syrian migration to Türkiye, Syrian migrants are less likely to be selected in terms of cultural similarity with Turkish natives. Third, Syrian migrants have the legal right to stay in Türkiye, and, after the 2016 EU-Türkiye Deal, little chance of moving to Europe, creating incentives to integrate in the host country.

Our findings show that migrants exposed to information about Turkish fertility norms are significantly less likely to report intentions to have a child within the next two and five years—by roughly one-third and one-fifth relative to the control group, respectively—and report a

lower ideal number of children. Treated individuals are also more likely to perceive social stigma associated with having many children. Information about Turkish natives' fertility norms reduces respondents' perceptions of natives' actual and desired fertility, which are both overestimated in the control group.

The Syrian Information Treatment, on the other hand, does not have a statistically significant effect on fertility intentions. Individuals assigned to this treatment report a lower ideal number of children and are more likely to perceive the stigma associated with having many children, but the estimated effects are smaller in magnitude than those observed under the Turkish Information Treatment. The Syrian Information Treatment also significantly reduces respondents' beliefs about the ideal number of children among Turkish natives. Taken together, these results suggest that information about Syrian migrants leads to an update about Turkish natives' fertility norms, but that direct exposure to information about natives produces a stronger and more robust impact on fertility intentions.

The effect of the Turkish Information Treatment on fertility intentions is concentrated among religious individuals and men. At baseline, religious individuals are more likely to report that they want to have another child in the short term, suggesting that they are more exposed to social pressure toward larger families. The Turkish Information Treatment reduces fertility intentions precisely among this group and it makes religious individuals less likely to report feeling stigmatized for having too few children. Among men, the Turkish Information Treatment increases the perceived stigma associated with having many children. This pattern is consistent with male respondents being more exposed to Turkish society, as reflected in their higher Turkish-language proficiency and larger number of Turkish friends.

In the follow-up, conducted after 7-8 months, the average treatment effects on migrants' fertility intentions are not statistically significant. However, the fertility intentions of the groups that responded the most at baseline (religious individuals and males) continue to be significantly affected by the Turkish Information Treatment, suggesting persistent effects of exposure to natives' fertility norms for these subpopulations. We also show that intentions to have children and the ideal number of children during the baseline survey are correlated with actual pregnancies during the follow-up.

Our findings are evidence that information frictions regarding natives' social norms play an important role in migrants' fertility choices. The intervention in our experiment mimics a key aspect of immigrants' integration in destination countries—namely, the process of learning about the descriptive social norms of native populations. Importantly, we inform migrants also about the ideal number of children among Turkish couples, which might be different from the realized and observable number. This piece of information might be harder for migrants to infer in their environment through everyday interactions alone, and migrants

may take more time to form a precise expectation about it.

We interpret our experimental results through the lens of a simple dynamic conceptual framework, in which migrants trade off the intrinsic utility of having children against the utility of conforming to natives and fellow migrants. Migrants initially perceive natives' norms as closer to their own than they actually are, and their beliefs evolve gradually toward the true value of natives' fertility. Within this framework, our information treatment maps into an exogenous increase in the speed at which migrants update their beliefs about native fertility norms, leading to faster convergence in migrants' fertility intentions. Beyond rationalizing this result, the model lets us generalize the mechanism to a long-run, society-wide setting in which migrants interact with, and affect the behavior of, other migrants as well as natives. Segregation, the speed of belief updating, and the initial fertility gap between migrants and natives jointly determine the pace at which migrants' fertility behavior converges to that of natives over time.

Our work can inform policymakers about the dynamics of immigrants' integration in the host society and the role of social norms in shaping fertility choices. It suggests that immigrants want to assimilate into the host society even in a deeply personal domain, usually not directly targeted by integration policies. At the same time, our results suggest that migrants' fertility can only partially address the issue of declining fertility rates in high-income countries as they are themselves influenced by the prevailing norms they find at destination.

More generally, our results suggest that fertility preferences may be shaped not only by economic incentives and constraints, but also by perceptions of prevailing social norms. If fertility choices are partly driven by conformity motives, policies aimed at influencing fertility behavior may have effects that depend on the broader social environment in which individuals make such decisions.

A growing body of work in economics has studied the cultural integration of immigrants and minority groups. Early contributions documented that preferences and attitudes of minorities are shaped by their social context across a range of domains, including fertility (Fernández and Fogli, 2006; Giuliano, 2007; Dohmen et al., 2012; Fernández, 2011; Farré and Vella, 2013; Dinesen, 2013). Immigrants can influence the extent to which they and their offspring close the gaps in values with natives through socialization or interactions in the marriage markets (Bisin and Verdier, 2000, 2011; Bisin and Tura, 2019), implying that integration may span multiple generations (Abramitzky et al., 2016; Casey and Dustmann, 2010). Our paper contributes to this literature by providing experimental evidence that migrants update their perceptions about natives' norms, and their fertility intentions, in response to information about native social norms. In doing so, it sheds light on how information

frictions about descriptive social norms of natives can moderate migrants' integration.

A literature across disciplines has shown that migrant fertility rates tend to converge to those of the destination country, although the extent and timing of this convergence vary between different migrant populations and destination countries (Rosenwaike, 1973; Farber and Lee, 1984; Kahn, 1988; Adserà et al., 2012; Krapf and Wolf, 2015; Pailhé, 2017; García-Gómez et al., 2023). Immigrants' adjustment is partially determined by the economic and institutional context of host countries (Andersson and Scott, 2005), but it also seems to be mediated by cultural norms (Fernández and Fogli, 2006, 2009). These results support the adaptation hypothesis in demography, whereby the host-country context shapes migrants' fertility behavior, driving relatively quick convergence toward native levels (Myers and Morris, 1966; Goldstein, 1973; Adserà et al., 2012). In addition, a limited number of studies in demography have studied fertility dynamics of forced migrants, mostly based on observational data (Rumbaut and Weeks, 1986; Williams et al., 2013; Andersen et al., 2023).^{*} In the forced migration context, patterns of migrants' selection (Zarate and De Zárate, 1975; Courgeau, 1989) are likely less pronounced. However, disruption brought about by the drivers of migration or by the arrival in the host country can lead to a period of low or no fertility in the short term (Goldstein, 1973; Hervitz, 1985) or involve an increase in fertility after migration due to the interrelations between the determinants of migration and conditions at destination (Schmid and Kohls, 2010; Lübke, 2015). Given our clean experimental setting, we add to this literature by isolating the role of perceived natives' social norms in determining fertility intentions, and estimating effects on short-term and medium-term intended fertility.

A vast literature across disciplines has studied the behavioral impact of descriptive norms, namely information about what others commonly do in society, starting in psychology (Cialdini et al., 1991). The desire to conform creates a coordination problem where the payoff from one action depends on what others do in society. Descriptive norms arise as equilibria in such coordination games (Bicchieri, 2005; Akerlof, 1997; Brock and Durlauf, 2001). Intuitions from these frameworks have been applied to the study of several behavioral domains, from tax adherence (Cialdini, 2007; Mascagni, 2018), to female genital cutting (Gulesci et al., 2021; Corno et al., 2025), and gender norms (Bursztyrn et al., 2020). Studies in economics and demography have established a link between fertility and social norms or social networks, using observational data (Balbo and Barban, 2014; Buyukkececi et al., 2020; Yu and Liang, 2022; Spolaore and Wacziarg, 2022; Beine et al., 2013; Bozdog et al., 2022).[†] We contribute

^{*} In economics, a couple of working papers by Aboulhosn et al. (2025) and Kirdar and Oruc (2026)) show that the convergence may work both ways, leading to an increase of the fertility of native population following a forced migration inflow, again due to both economic and cultural transmission mechanisms. [†] Evidence from demography has documented migrants' convergence to destination country gender norms

to this literature by establishing a causal link between descriptive social norms and fertility intentions in the context of migration, using an experimental strategy.

The rest of the paper is organized as follows. In Section 2, we present the context of our intervention. In Section 3, we detail our intervention and experimental design. In Section 4, we report our sample and data. In Section 5, we report and discuss our empirical results. Section 6 presents a brief conceptual framework. In Section 7, we conclude.

2 Context

2.1 Syrians under temporary protection in Türkiye and obstacles to integration

The civil conflict in Syria started in 2011 and Türkiye began receiving Syrian nationals soon after. The scale of the influx increased sharply thereafter, and according to statistics from the Presidency of Migration Management, the number of Syrians under temporary protection peaked at approximately 3.7 million in 2021. Although the Syrian migrant population declined after 2021—partly following the establishment of so-called “safe zones” in northern Syria—around 2.9 million Syrians were still residing in Türkiye by the end of 2024, around the time our surveys were conducted.

Initially, the Turkish Disaster and Emergency Management Authority (TDEMA) organized the reception of migrants in several camps near the border. Beginning in 2013, Syrians increasingly began to reside outside the camps and relocate to other regions of the country. Figure A1 illustrates the distribution of Syrians under temporary protection in Türkiye across the 81 provinces in 2024. The highest concentrations are observed near the Syrian border, as well as around the richer provinces of Istanbul and Bursa. In 2014, displaced Syrians obtained “Temporary Protection” status in Türkiye, granting access to government services such as healthcare, education, and social protection, and in 2016 they were granted access to formal employment, albeit with some limitations.[‡]

These policy measures may have facilitated Syrians’ integration into the host country by increasing contact with natives in employment or school. At the same time, economic and social factors may have hindered such attempts. First, Syrian interaction with natives in labor markets may indeed be low. According to the 2018 TDHS data, despite their right to work in Türkiye, 98% of employed Syrians worked informally (Demirci and Kırdar, 2023),

(Huscheck et al., 2011; Holland and de Valk, 2017).

[‡] In 2014 the government passed the Temporary Protection Regime that defines the rights of Syrian migrants to access government services including healthcare, education, and social protection.

thus facing a segregated labor market. In addition, contact in the labor market is less likely for women, whose employment rate is substantially lower than natives' (6.0% vs. 22.2%). Second, the transmission of social norms may also face obstacles among Syrian youths. Syrian children initially attended school in camps—later converted to Temporary Education Centers, following the Syrian curriculum in Arabic. Since the 2014–2015 school year, they have been integrated into Turkish public schools; however, attendance rates remained relatively low at 59.1% in 2016–2017, 63.4% in 2019–2020, and 75.7% in 2023–2024 (MONE, 2024). Kırdar et al. (2023) show that a gap persists among children even a decade after the beginning of the Syrian crisis. Syrian children also face social exclusion in Turkish schools (Alan et al., 2023). Third, the mother tongue of most Syrian migrants is Arabic or Kurdish, potentially complicating contact. In our sample, only 44% of Syrians reported at least an intermediate level of spoken Turkish, while the percentage fell to 37% for written Turkish.

Overall, labor market and educational outcomes indicate that Syrians remain far from fully integrated in Türkiye. Refugees also face substantial residential segregation, particularly in provinces with higher refugee shares (Bertoli et al., 2021). Perhaps unsurprisingly, in our sample, about 80% of respondents report no close Turkish native friends and fewer than 5% report more than one.

2.2 Fertility rates among Turkish and Syrian women

Figure A2 in the Appendix illustrates the overall evolution of total fertility rates in Türkiye and Syria, using data from the World Bank. Türkiye has been going through a fertility transition over five decades. Total fertility rate (TFR), defined as the average number of live births that a woman would have between the ages of 15 and 49, was around 2.5 in 2000. It remained slightly above the replacement level of 2.1 until 2018, then declined further to 1.5 by 2023—very similar to the total fertility rate of EU member states (TurkStat, 2024).[§] The TFR in Syria declined over the past decades, falling from 4.0 in 2001 to 3.5 in 2010, yet it remained considerably higher than in Türkiye (UNFPA and Syrian Commission for Family Affairs & Population, 2023). In addition, Turkish women aspired to have 2.8 children on average, compared to 3.9 among Syrian women (HUIPS, 2019a).

Selection also plays an important role in the fertility levels of Syrian migrants in Türkiye. Syrian migrants in Türkiye originate from regions that had higher fertility than co-nationals already before the war—their TFR was 6 in 2004, it then remained between 4.5 and 5 in the years after the war (Çağatay et al., 2020). The fertility of Syrians in Türkiye is influenced by complex mechanisms of delayed fertility due to war, and compositional changes in the

[§] Syrians under temporary protection in Türkiye are not included in the general population statistics.

Syrian migrant population (Saraç and Koç, 2020). Nonetheless, in this context, migrants’ social integration may still drive fertility convergence between migrants and natives.

Consistent with this possibility, Appendix Figure A3 shows that, in the 2018 TDHS, Syrian women who have spent more years in Türkiye report a lower ideal number of children. Relative to women who arrived within the previous year, the adjusted difference becomes progressively more negative with time since arrival. While this cross-sectional pattern cannot be interpreted causally, as length of stay may be correlated with migrant selection and other compositional characteristics, it is consistent with a mechanism in which greater exposure to the host society and its fertility norms gradually shifts migrants’ fertility preferences toward those of natives.

3 Intervention and experimental design

To conduct the experiment, we divided our sample into 3 groups of roughly equal size: a pure control group receiving no information, a group receiving information about the fertility of Syrian migrants in Türkiye, the Syrian Information Treatment, and a group receiving information about the fertility of Turkish natives, the Turkish Information Treatment. To ensure proper randomization across treatment arms, each individual was assigned a randomly predetermined treatment status before the baseline survey.

Participants assigned to the Syrian Information Treatment were presented with information about the fertility behavior and intentions of Syrian women aged 15–49 living in Türkiye, administered through a short text, as well as AI-generated icon-array graphics and example pictures. Drawing on the Syrian subsample of the 2018 TDHS (HUIPS, 2019b), the intervention informed respondents that the total fertility rate of Syrian women, defined as the average number of children a woman is expected to have over her childbearing years and under current conditions, is 5.3. To convey the substantial heterogeneity underlying this average, participants were also informed that 25.8% of the Syrian women aged 15–49 in Türkiye have no children, and 21.7% have four or more children. We also reported that Syrian women report desiring, on average, 3.9 children. We accompanied such information with an explicit statement that these values reflect group averages and that individual outcomes may vary.

The structure of the Turkish Information Treatment mirrored that of the Syrian Information Treatment but focused on information about native Turkish women aged 15–49, drawing on the 2018 TDHS (HUIPS, 2019a) and the Turkish Statistical Institute (TUIK) (TurkStat, 2024). Participants were first informed that Turkish women have an average of 2.0 children. We then highlighted the dispersion within the Turkish population: 35.4%

of Turkish women are childless, and 5.2% have four or more children. Turning to fertility preferences, participants learned that Turkish women aspire to have 2.8 children on average. As before, all information was presented through both textual descriptions and AI-generated visualizations, accompanied by clear disclaimers regarding within-group variability.

The treatments are identical in framing, modality, and graphical style. Also, the presentation of both the Syrian Information Treatment and the Turkish Information Treatment was strictly descriptive and neutral. No normative or policy-oriented language was employed; the sole aim was to inform respondents about the demographic characteristics and reproductive intentions of the subgroup covered by the respective treatment (Turkish individuals and Syrians in Türkiye).

Our design allows us to assess the effects of informing migrants about natives' norms through the comparison between the Turkish Information Treatment and the control group. In addition, the comparison between the effects of the Turkish Information Treatment and of the Syrian Information Treatment allows us to show that our results (i) are driven by natives' social norms, and not the social norms of the peer group, and (ii) are not due to priming effects associated with receiving information about fertility.

The information in the Turkish Information Treatment is expected to be at least partially new to migrants and affect their fertility intentions. As we document in the previous section, Syrians in Türkiye still face considerable obstacles to integration, limiting interaction with natives and thus the knowledge about their social norms. In addition, knowledge of desired or intended fertility is hard to obtain, as such information typically requires close personal relationships. Still, desired fertility may be a stronger predictor of future fertility trends and therefore more salient for individuals seeking to align with host-society norms. In other words, our treatment gives information about relevant and potentially unknown descriptive social norms to individuals in our sample.

4 Sample and data

4.1 Data collection

The sample of our surveys was drawn from the adult population of Syrians under temporary protection residing in Türkiye and who had a partner at the time of the survey implementation. Our survey focused on areas with high Syrian presence including Adana, Ankara, Bursa, Istanbul, Izmir, Kocaeli, Konya, and Şanlıurfa. Across these provinces, Syrian mi-

grants accounted for 2.5% to 11% of the total population.[¶] The sampling procedure we used was stratified by sex and region (Western vs Central and Eastern Türkiye).

The data collection was performed by a professional survey firm in three distinct phases. The first phase consisted of a pilot questionnaire that aimed to ascertain the quality of responses to our planned survey. Surveyed individuals were contacted in public spaces and individually administered the questionnaire using a self-administered survey on a tablet, in the presence of an enumerator.^{||} Only one person per couple was surveyed.

The second phase, which was conducted in similar way as the pilot survey, involved the baseline data collection, which included 1600 participants and was conducted at the beginning of 2024. During this phase, treated individuals among the surveyed were presented the intervention material. The overall survey, including the treatment took about 15 minutes to complete. Respondents were informed about upcoming follow-up survey, and their contact information was collected to enable tracking over time.

In the baseline survey, prior to delivering the treatments, we collected a comprehensive set of socio-demographic characteristics, which we use for balance checks and as controls in our analyses. We elicited the respondents' location in Türkiye, categorized as residing in Istanbul, Bursa, Kocaeli and Izmir (Western Türkiye) versus elsewhere, as well as their province of birth in Syria. We measured educational attainment by the highest level of schooling completed. As a summary measure of the respondents' financial status, we asked them whether their income was greater than, equal to, or less than their expenditures. Due to low variation across categories, we then aggregated this into a dummy indicating whether income was lower than expenditures. We also asked whether respondents received aid in different forms from a wide range of sources, aggregating aid items in an aid index.^{**,††}

[¶] We did not conduct surveys in regions close to the epicenter of the February 6, 2023 earthquake that led to severe damage in provinces such as Hatay, Kahramanmaraş, Gaziantep, Osmaniye. We also did not include provinces with a very high ratio of Syrian migrants, such as Kilis, where fertility rates among the host population are unusually high, potentially complicating the setting of our experiment.

^{||} All our pre-registration material, including all the questionnaires and a pre-analysis plan submitted before our pilot survey, is available on the social science registry of the AEA at <https://www.socialscienceregistry.org/trials/12925/history/237315>.

^{**} The PCA aggregator is obtained by estimating a factor model in which each aid-receipt indicator A_{ij} (for individual i and aid item j) is projected onto the first principal component. PCA solves

$$\max_v \text{Var}(Av) \quad \text{s.t.} \quad \|v\| = 1,$$

yielding weights v_j that load more heavily on the most correlated items. The resulting aid index for individual i is the standardized fitted value

$$\hat{I}_i = \sum_j v_j A_{ij},$$

which summarizes the common variation across all aid-receipt questions.

^{††} The possible sources were in kind supplies from relatives, in kind, housing or monetary support from the Turkish local government, in kind, housing or monetary support from international organizations, Kızılay

We collected the self-stated level of religiosity using a Likert scale. We use this variable in our analysis by aggregating answers into a dummy variable measuring ‘above-median’ religiosity. Applying PCA aggregation to a brief version of the Mehrabian and Steff (1995) conformity questionnaire, we construct a binary indicator for ‘above-median conformity’. We construct a dummy reporting that the area they live in is predominantly Turkish or mixed Turkish-Syrian.

After delivering the treatment, we collected information on the main outcomes, including fertility intentions, perceived stigma, and beliefs about natives’ and migrants’ fertility. We measured intentions to have children over different time spans: in the following 2 years, in the following 5 years, and at any point in the future. We elicited perceived stigma using two indicator variables equal to one if respondents stated, respectively, that people around them think they should have more children or that people around them think they should have fewer children. We measured beliefs using respondents’ answers about the perceived average number of children among Turkish natives and Syrians, as well as their beliefs about the ideal number of children for Turkish and of Syrian couples.^{‡‡}

The third phase, conducted in Fall 2024, consisted of a three-minute phone survey aiming to measure medium-term impacts of the treatments. We successfully recontacted 1366 of the 1600 baseline respondents. The follow-up questionnaire consisted of a subset of the baseline questions— specifically, those administered after the treatment during baseline. Participants received a monetary incentive of 100TL (approximately 3\$) for completing the follow-up survey.

4.2 Sample characteristics

In Table A2, we report the main characteristics of study participants, by gender and location in the host country. Couples in our sample have, on average, 2.8 children. The degree of integration is strongly different between men and women. While 69% of men in the sample work outside the home, only 5% of women do. Similarly, 63% of men report speaking Turkish well, compared with only 30% of women. The characteristics of women in our sample can be compared with those of the representative sample of Syrian women in Türkiye from the 2018 TDHS.^{§§} Women in our sample report an average age at first birth of 21.5 years, compare to 20 in the TDHS. Women in the control group of our survey report an average ideal number of children of 4.5, compared with 3.9 in the TDHS.

kart (a government-funded assistance program).

^{‡‡} We also asked a question about the perceived number of couples without children. However, the answers to this question were disproportionally located at 0% or 50%. We believe that this was due to a complex formulation with a double negative. Therefore, we do not use this variable in the analysis. ^{§§} The 2018 TDHS Syrian Sample is the only representative sample of Syrians in Türkiye as of July 2026.

Differences in the age composition of the two samples are important when comparing characteristics across them. Women in the TDHS have, on average, four fewer years of education and are 10 percentage points less likely to report good spoken Turkish proficiency. These differences may partly reflect the fact that the TDHS data were collected five years before our survey and sampled a younger population. Indeed, respondents in our survey are, on average, 5.5 years older and have lived in Türkiye for 3.3 more years. Likely for the same reasons, women in the TDHS have fewer children on average (about 2.5 per woman). However, among women in the modal age group of our survey (30–34 years), the TDHS reports an average of 3.3 children, identical to our sample. Among respondents aged 40 and above, who have presumably completed or are close to completing their fertility cycle, the average number of children in our sample rises to 4.6, compared with approximately 5.5 among women aged 40–49 in the TDHS 2018 Syrian Sample. This remaining difference may reflect differences in the provincial composition of respondents’ regions of origin. Overall, the two samples exhibit similar geographic patterns: in both samples, Syrian women residing in the western provinces of Türkiye are slightly younger, have slightly fewer children, and report better Turkish proficiency.

In Table 1, we check for balance across control and treatment arms, reporting, for each arm, the main demographics, moderators, and behavioral counterparts for our treatment, and comparing each treated group separately against the control group. Both treatment groups are balanced on gender composition, age, marital status, current number of children, religiosity, employment, type of neighborhood (predominantly migrants vs. not), current pregnancy, an index for public aid support and a dummy variable for living in Central-East of Türkiye. On average, subjects in the Turkish Information Treatment are less likely to have completed secondary school than the control group, and the difference is statistically significant at the 10% level, but the dummy for having obtained tertiary education is balanced. On average, individuals in the Turkish Information Treatment have been in Türkiye for longer, and the converse is true for individuals in the Syrian Information Treatment. However, the differences of around 4.5 months are very small compared to the 7.8 years that the control group has spent in Türkiye on average. In addition, treated subjects are not more likely to live in predominantly Syrian neighborhoods. In any case, we control for these and all other unbalanced variables in our analyses.

We perform an omnibus test for balance regressing sequentially the treatments dummies on all the covariates. Results are reported in the table. Following Kerwin et al. (2024), we computed the Randomize Interference (RI) confidence intervals and report the corresponding p-values. For both our treatments, we cannot reject the null hypotheses of balance for each treatment arm.

Table 1: Balance table

	(1) Control Mean	(2) Δ SY Info Treatment	(3) Δ TR Info Treatment
Female	0.571 (0.495)	0.030 (0.030)	-0.047 (0.029)
Age	33.749 (9.208)	0.456 (0.560)	0.272 (0.573)
Marital status	0.903 (0.297)	0.023 (0.017)	0.017 (0.017)
Present Children Nr.	2.809 (2.249)	0.199 (0.131)	-0.019 (0.130)
Religious	0.487 (0.500)	-0.027 (0.031)	0.040 (0.031)
Secondary Education	0.607 (0.489)	-0.049 (0.030)	-0.053* (0.030)
Tertiary Education	0.236 (0.425)	0.033 (0.027)	-0.001 (0.026)
Currently Employed	0.331 (0.471)	-0.034 (0.028)	0.022 (0.028)
Months in Türkiye	93.451 (29.832)	4.503** (2.108)	-4.504** (1.902)
Migrants' Neighborhood	0.406 (0.492)	0.001 (0.030)	0.022 (0.030)
Pregnant	0.022 (0.148)	-0.011 (0.008)	0.006 (0.010)
Public Aid Index	-0.031 (2.869)	-0.222 (0.172)	0.307 (0.194)
Observations	534	1,067	1,067

Notes: This table reports balance checks for our randomization procedure. The first column reports the control mean of the variable and its standard deviation in parenthesis. The last two columns report differences between the Syrian Information Treatment, the Turkish Information Treatment and the control group, with OLS estimates and standard errors (in parentheses). In all specifications, we control for the stratification dummy. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively. Omnibus test performed regressing the dummies for the Syrian Information Treatment and the Turkish Information Treatment respectively on all covariates, p-values computed using Randomized Interference (RI).

In Appendix Table A1, we report balance for additional observable characteristics available in our data. Subjects in the Syrian Information Treatment have lower proficiency in

Turkish on average, but, subjects in this treatment arm have been in Türkiye for longer, and they are not more likely to live in migrants' neighborhoods. The Turkish Information treatment had a significantly higher employment rate before they migrated to Turkey. More generally, the Turkish Information Treatment displays four imbalanced variables at the 10% level out of 26 (month in Türkiye, father alive, employment before migration and conformistic dummy). These differences are consistent with random deviations. In any case, we control for all these variables in our regressions.

5 Analysis and Results

5.1 Methodology

We estimate the impact of the treatment on outcomes with the following regression using pooled data from the control group and the two treatment arms :

$$y_{i,t} = \beta_0 + \beta_1 T_{i,1} + \beta_2 T_{i,2} + \beta X'_i + \epsilon_{i,t} \quad (1)$$

where $y_{i,t}$ represents outcomes—beliefs, fertility intentions, and perceived stigma measured at time t (0 for baseline and 1 for follow-up). The variables $T_{i,1}$ and $T_{i,2}$ are treatment dummies, X_i is a vector of controls, and $\epsilon_{i,t}$ is the error term. Controls include stratification variables, demographic characteristics, religiosity, conformity, presence of Turkish natives in the area, province fixed effects, and observables that display some imbalance in either treatment group, the Syrian Information Treatment or the Turkish Information Treatment, as suggested by Bruhn and McKenzie (2009).^{¶¶} We present our results with and without these control variables. To test for the differential impact of the Syrian Information Treatment and the Turkish Information Treatment, we compute the p-value for an F-test of the null hypothesis that the two treatment effects are equal.

Assessing the impact of the treatments on fertility intentions and the ideal number of children requires estimating their effects on multiple variables. To handle multiple hypothesis testing, we compute family-wise error rates (FWER) using the step-down procedure of Westfall and Young (1993). Family-Wise Error Rates are estimated grouping specifications by outcome—intention to have a child within two years, within five years, at some point in the future, ideal number of children, and difference between actual and ideal number of children—separately for specifications with and without controls.

^{¶¶} Demographic control variables include gender, age, number of children, months since migration, marital status, dummies for mother and father alive, religiosity, education, employment, type of neighborhood, number of people working in the household, index of financial distress.

For follow-up outcomes, we check for selective attrition by assessing whether attrition is correlated with treatment dummies, with and without controls including a stratification dummy, unbalanced controls, and variables used for heterogeneity analyses.

To study how the treatment effects vary across subgroups, we estimate heterogeneous treatment effects by dummy variables for gender and above-median religiosity.^{***} For this purpose, we estimate a specification with interaction terms:

$$y_{i,t} = \alpha_0 + \alpha_1 T_{i,1} + \alpha_2 T_{i,2} + \alpha_3 T_{i,1} W_i + \alpha_4 T_{i,2} W_i + \alpha_5 W_i + \alpha X'_i + \nu_{i,t} \quad (2)$$

where W_i is a dummy for key moderators of the treatment effect. We also report p-values for an F-test of the null hypothesis that the sum of the effect of the treatment dummy and the same dummy interacted with W_i , representing the treatment effect for individuals with $W_i = 1$, equals zero.

5.2 Baseline Survey: Main Effects

We first examine whether our treatments had any effects on beliefs about natives' fertility behavior and intentions in Table 2. The outcomes in the first two columns are the subjective expectations about the average number of children per Turkish couple and the effects of our treatments on them; the outcomes in the last two columns are the subjective expectations about the ideal number of children among Turkish couples. The Turkish Information Treatment had a negative and statistically significant effect on beliefs about the number of children in Turkish couples, whereas the Syrian Information Treatment shows no statistically significant effect on the same variable. Both the Syrian Information Treatment and the Turkish Information Treatment reduced the perceived ideal number of children for Turkish couples in a statistically significant way.^{†††} The effect is larger in magnitude for the Turkish Information Treatment than for the Syrian Information Treatment, and the difference between the two treatment effects is statistically significant. Subjects receiving the Turkish Information Treatment adjusted their beliefs in response to new information, bringing their expectations closer to the national-level information provided in the treatment. On average, individuals in the control group report that native couples have 2.3 children, 15% more than the figure shown in the Turkish Information Treatment, 2.0. Similarly, interviewed subjects in the control group report that natives aspire to have 3.3 children, 18% more than the 2.8

^{***} While we pre-registered a heterogeneity analysis based on the conformity dummy, we decided to remove it from the main text since this variable is unbalanced at baseline. The results did not show any relevant heterogeneous effect.

^{†††} As shown in the Appendix Table A4, our treatments also affected subjective expectations about Syrians, suggesting that surveyed individuals perceived it to be correlated to that of Turkish individuals.

presented in the intervention.

The main result of our paper is summarized in Table 3. In this table we report the results from our main specification in Equation 1 for three categorical outcomes: intending to have a child within the next two years (first two columns), within the next five years (third and fourth columns), and at some point in the future (last two columns). The odd-numbered columns present estimates without controls, while the even-numbered columns report estimates including the full set of controls.

Our main treatment, the Turkish Information Treatment, has a negative effect on the intention to have a child within 2 and 5 years of the interview date. These effects are statistically significant at the 5% level, and they remain significant at the 10% and 5% levels when computing FWER p-values, in specifications with controls. The negative effects are about 1/3 and 1/5 of the control group mean, which are 15% and 25% respectively. The treatment effect on the intentions to have a child at some point is negative and not significant. The effect of the Syrian Information Treatment is never statistically significant. The impacts of the Turkish Information Treatment are more negative than those of the Syrian Information Treatment, and the differences are statistically significant at the 10% level for the intention to have children within the next 2 years, within the next 5 years, and the intention to have children at some point, in specifications with controls. This provides evidence that providing information about the norms of natives, mimicking one feature of the integration process, has a stronger impact on fertility intentions than providing information about fellow migrants.

In Table 4, we examine the effects of the two treatments on the ideal number of children reported by respondents, in the first two columns, and the effects on the difference between ideal and actual number of children. In the last two columns. Both the Syrian Information Treatment and the Turkish Information Treatment decreased the ideal number of children and the difference between the ideal and actual number of children, and effects are statistically significant. The effect is larger in magnitude for the Turkish Information Treatment than for the Syrian Information Treatment. For the first outcome, effects are, respectively, 20% and 8% of the control mean, in the specification with controls. For the second outcome, they are 57% and 27% of the control mean, respectively. For both outcomes and all specifications, the difference between the two effects is statistically significant at the 1% level. In sum, the information interventions on fertility behavior and preferences led to reductions in both the ideal number of children and fertility intentions, and the effects are stronger when the information refers to the host country's population.

To investigate the mechanism driving treatment effects on fertility intentions and the ideal number of children, we explore the impact of our treatment on the perceived stigma of having too few or too many children. In Table 5, the dependent variable in the first two

Table 2: Treatments' impact: beliefs about Turkish Couples

	(1)	(2)	(3)	(4)
	Beliefs: n. children		Beliefs: ideal children	
SY Info. Treatment	0.0603 (0.0690) [0.570]	-0.0514 (0.0614) [0.418]	-0.337*** (0.0813) [0.000]	-0.476*** (0.0795) [0.000]
TR Info. Treatment	-0.0370 (0.0645) [0.570]	-0.120** (0.0576) [0.088]	-0.589*** (0.0751) [0.000]	-0.661*** (0.0729) [0.000]
Controls	No	Yes	No	Yes
<i>p-value: $T1 = T2$</i>	0.166	0.240	0.000	0.006
<i>N</i>	1600	1600	1600	1600
Control mean	2.34	2.34	3.32	3.32

Notes: This table reports OLS estimates of the effects of the treatments on the beliefs about Turkish couples' number of children or beliefs about Turkish couples' fertility. In the first two columns, the outcome is the subjective expectation about the average number of children that Turkish couples have. In the last two columns, the outcome is the subjective expectation about the ideal number of children Turkish couples have if they could choose. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively. Family-wise error rates (FWER) adjusted p-values reported in square brackets.

columns is a dummy variable indicating whether the individual believes that people around them think they should have more children. In contrast, the dependent variable in the last two columns is a dummy indicating whether the individual believes that people around them think they should have fewer children.

Neither the Syrian Information Treatment nor the Turkish Information Treatment has a statistically significant effect on the perceived stigma associated with having too few children, although the Turkish Information Treatment exhibits a negative effect. In contrast, both treatments significantly increase the perceived stigma associated with having too many children. The effect of the Turkish Information Treatment is larger in magnitude, but the difference with the Syrian Information Treatment is statistically significant only in the specifications without controls. For the Turkish Information Treatment, the fraction of respondents who believe that people around them think they should have fewer children increases by 8 percentage points, from a control mean of 15%.

Overall, the treatments—especially the Turkish Information Treatment—shift beliefs about fertility norms, increase the perceived stigma associated with having many children,

Table 3: Treatments' impact: intentions to have a child

	(1)	(2)	(3)	(4)	(5)	(6)
	Child within 2 years		Child within 5 years		Child at some point	
SY Info Treat.	-0.0267 (0.0212) [0.441]	-0.0193 (0.0208) [0.653]	-0.0372 (0.0254) [0.368]	-0.0182 (0.0241) [0.666]	0.00963 (0.0299) [0.717]	0.0383 (0.0267) [0.399]
TR Info Treat.	-0.0525*** (0.0203) [0.053]	-0.0526*** (0.0200) [0.044]	-0.0528** (0.0249) [0.146]	-0.0634*** (0.0236) [0.044]	-0.0207 (0.0296) [0.680]	-0.0178 (0.0270) [0.666]
Controls	No	Yes	No	Yes	No	Yes
<i>p-value: SY = TR</i>	0.185	0.083	0.520	0.044	0.312	0.034
<i>N</i>	1600	1600	1600	1600	1600	1600
Control mean	0.15	0.15	0.25	0.25	0.45	0.45

Notes: This table reports OLS estimates of the effects of the treatments on the intentions to have children or fertility intention variables. The outcome is a dummy that equals one if the individual intends to have a child within two years (columns 1 and 2), in 5 years (columns 3 and 4), or at some point (columns 5 and 6). Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively. Family-wise error rates (FWER) adjusted p-values are reported in square brackets, grouping specifications by outcome, separately for specifications with and without controls. FWER are estimated jointly with the hypothesis in Table 4.

and reduce fertility intentions in the same direction. This pattern is consistent with information frictions and a conformity mechanism and is difficult to reconcile with a generic fertility-information or priming effect alone.

5.3 Baseline Survey: Heterogeneous Effects

In this section, we investigate heterogeneous treatment effects on our main outcomes—intentions and perceived stigma—by religiosity, gender, and type of neighborhood that subjects live in. As we show in Appendix Table A5, effects on intentions are entirely concentrated among religious individuals. The table mimics the format of Table 3, but it interacts both treatment dummies with a dummy that equals one if individuals reported religiosity level is higher than the median. Treatment effects for non-religious respondents are mostly small and insignificant, except for a positive Syrian Information Treatment effect on wanting children at some point. Religious respondents show stronger negative responses to the Turkish Information Treatment: interaction terms and total effects are negative and significant across all outcomes, with and without controls. No significant total effect appears for the Syrian Information Treatment once controls are included. These results are consistent with

Table 4: Treatments' impact: ideal number of children

	Ideal N. of Children		Δ Ideal–Present N. of Children	
	(1)	(2)	(3)	(4)
SY Info. Treatment	-0.297** (0.106) [0.015]	-0.364*** (0.0905) [0.001]	-0.498*** (0.121)	-0.437*** (0.110)
TR Info. Treatment	-0.893*** (0.0913) [0.000]	-0.944*** (0.0833) [0.000]	-0.873*** (0.128)	-0.949*** (0.110)
Controls	No	Yes	No	Yes
<i>p-value: SY = TR</i>	0.000	0.000	0.002	0.000
<i>N</i>	1600	1600	1600	1600
Control mean	4.46	4.46	1.65	1.65

Notes: This table reports OLS estimates of the effects of the treatments on the ideal number of children that participants would choose. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively. Family-wise error rates (FWER) adjusted p-values are reported in square brackets, grouping specifications by outcome, separately for specifications with and without controls. FWER are estimated jointly with the hypothesis in Table 3.

effects on stigma reported in Appendix Table A6. Religious individuals are more likely to report stigma associated with having too few children, and the Turkish Information Treatment reduces the likelihood of reporting such stigma within this group.

In Appendix Table A7, we report heterogeneous effects on fertility intentions by gender by interacting the treatment indicators with a dummy for being female. Effects of the Turkish Information Treatments for males, summarized by baseline coefficients for the treatment dummies, are negative, and interactions are positive and significant across all specifications with controls. As a result, the negative effect of the Turkish Information Treatment is statistically significant only for males in our sample. Baseline coefficients and interactions for the Syrian Information Treatment are almost always statistically insignificant. Consistent with this pattern, as we show in Appendix Table A8, males are the only group for which the Turkish Information Treatment significantly increases the perceived stigma associated with having too many children. Also, since males in the sample are also more religious, in Table A9, we report heterogeneous effects on fertility intentions by both gender and religiosity. Results suggest that the treatment effects are driven by males who are religious.

Appendix Table A10 reports heterogeneous treatment effects based on whether the sub-

Table 5: Treatments' impact: stigma

	(1)	(2)	(3)	(4)
	People think I should have more children		People think I should have fewer children	
SY Info. Treatment	-0.000381 (0.0300) [0.987]	0.00405 (0.0294) [0.906]	0.0680*** (0.0234) [0.022]	0.0635*** (0.0216) [0.016]
TR Info. Treatment	-0.0309 (0.0298) [0.504]	-0.0290 (0.0293) [0.547]	0.113*** (0.0243) [0.000]	0.0817*** (0.0221) [0.000]
Controls	No	Yes	No	Yes
<i>p-value: T1 = T2</i>	0.304	0.263	0.085	0.428
<i>N</i>	1600	1600	1600	1600
Control mean	0.40	0.40	0.15	0.15

Notes: This table reports OLS estimates of the effects of the treatments on the stigmatization variables. In the first two columns, the outcome is perceived stigma associated with having too few children, and in the second two columns, the outcome is perceived stigma associated with having too many children. Odd columns report the estimates obtained without controls in the regressions and even columns report the estimates obtained using controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent levels, respectively. Family-wise error rates (FWER) adjusted p-values reported in square brackets.

ject states that their neighborhood is predominantly inhabited by migrants. We cannot rule out a null effect of our treatment among people living in a predominantly migrant neighborhood. However, interaction coefficients are not significant. In Appendix Table A11, focusing on specifications that include controls, we do not find evidence of differential effect of the treatment across different types of neighborhood regarding their perception of stigma. Overall, these results suggest that living in neighborhoods with a migrant majority does not increase the magnitude of the treatment effects. This may reflect different incentives to conform with natives in these areas.

5.4 Follow-Up Survey Results

In order to check the persistence of our main results, we conducted a follow-up survey approximately 8 months after the baseline survey. Participants were contacted via phone, using the personal phone numbers they had provided during the first round of interviews.

Among the initial 1,600 participants, 234 (15%) were not found during the follow-up. Attrition was not differential across treatment arms. Table 6 reports the partial correlations of a dummy variable for having dropped out of the sample at follow-up with treatment dummies. Participation in the second wave is not significantly correlated with having received

either treatment. The estimated effects do not vary in size or statistical significance when we add controls.

Table 6: Attrition and Treatments

	(1)	(2)
	Attrition	
SY Info. Treatment	-0.0304 (0.0212)	-0.0172 (0.0217)
TR Info. Treatment	-0.0112 (0.0219)	0.000102 (0.0226)
Female	-0.00856 (0.0189)	0.0192 (0.0252)
Religious	0.0199 (0.0177)	-0.0126 (0.0177)
Migrants' neighborhood	0.0149 (0.0181)	0.0141 (0.0200)
Controls	No	Yes
<i>N</i>	1600	1600
Control mean	0.159	0.159

Notes: This table reports OLS estimates of the effects of the treatments on a dummy variable which equals one if the subject did not participate in the second wave of the survey. In the first column, we do not control other than the variables relevant for our heterogeneity analysis, while in the second column we control for additional variables that were unbalanced in our sample. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent levels, respectively.

Results on the whole population, reported in Appendix Table A12, are not statistically significant in the case of the Turkish Information Treatment, and they are generally not statistically significant for the Syrian Information Treatment, except for a positive and marginally significant effect on the intention to have a child at some point. As we show in Table A13, subjects in both treatment groups are less likely to feel stigmatized because they should have more children, during the follow-up. Also, as shown in Table A14 both treatments reduce beliefs about the ideal number of children for Turkish couples.^{†††}

^{†††} The Syrian Information Treatment increases the subjective expectation on the number of children by Turkish in the medium-run. A potential interpretation is that it induces heightened information acquisition in a segregated environment. This is potentially consistent with a positive and marginally significant effect

We find evidence of persistent effects among the subpopulations who were most affected by the treatment at baseline. Intentions to have children in the next two years are still lower than in the control group for males, as we show in Table A15. In addition, as we show in Appendix Table A16, the Turkish Information Treatment still has a significant negative effect on the intention to have a child within 2 years, and, less robustly, within 5 years, among more religious participants. Overall, the results indicate that the treatment has persistent medium-term effects among the population most sensitive to the information.

5.5 Intentions vs Outcomes

Our results rely on stated fertility intentions rather than realized fertility outcomes, given our sample size, and especially the limited time frame at our disposal. However, we can perform supplementary analyses using pregnancies observed in the follow-up survey to examine whether declared fertility intentions are predictive of subsequent pregnancies. We do so by regressing a dummy variable that equals one if a female respondent or their female partner is pregnant at follow-up on a dummy for intending to have children at baseline, using the same set of controls as in previous regressions.

Table 7: Correlation between Intentions and Actual Pregnancies at Follow-Up

	(1)	(2)	(3)	(4)	(5)	(6)
	Pregnancy at follow up					
	Within 2 years		Within 5 years		At some point	
Intention	0.109*** (0.0279)	0.0816*** (0.0283)	0.0790*** (0.0199)	0.0601*** (0.0225)	0.0618*** (0.0145)	0.0336** (0.0168)
Controls	No	Yes	No	Yes	No	Yes
<i>N</i>	1366	1366	1366	1366	1366	1366

Notes: This table reports OLS estimates of the effect of fertility intentions on the probability of the respondent or the female partner of the respondent being pregnant at follow-up. The outcome is a dummy that equals one if the individual intends to have a child within two years (columns 1 and 2), in 5 years (columns 3 and 4), or at some point (columns 5 and 6). Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

The results are reported in Table 7. We find that stated intentions to have a child in the first wave are strongly and significantly correlated with actual childbearing at follow-up. As expected, the predictive power of the shorter-term intentions is even stronger. In the even-numbered columns, where we control for demographics, the coefficients remain large and of the Syrian Information Treatment on intentions to have children in the long-run, documented in table A12.

statistically significant. In Appendix Table A17, we show that a similar result is obtained by using the stated ideal number of children in the first interview or the difference between the ideal and the actual number of children, showing that the stated ideal number of children is correlated with behavioral choices like conceiving in the future, even if less robustly so than for stated intentions.

These findings are consistent with a well-established body of evidence in the demographic and economic literature. Among others, Schoen et al. (1999), Miller and Pasta (1995), and Morgan and Rackin (2010) show that individuals who state an intention to have a child are substantially more likely to realize that birth in the subsequent years than those who do not. Even recent studies documenting that realizations do not entirely match intentions, consistently find that short-term fertility intentions are especially predictive, since they are closer to concrete life-course decisions and less susceptible to revision (Toulemon and Testa, 2005; Harknett and Hartnett, 2014). By contrast, lifetime “ideal family size” is a weaker predictor, often overstated and revised downward as constraints emerge (Hayford, 2009).

6 Conceptual Framework

We now introduce a simple conceptual framework for two purposes. First, we use it to analyze the experimental treatment as an exogenous acceleration in migrants’ learning about native fertility norms. Second, we use the insights from our experiment to make broader considerations about long-term, society-wide convergence of fertility social norms for migrants.

Setting

Our model builds on Akerlof (1997) and Brock and Durlauf (2001), introducing distinct groups and frictions in one’s group updating about the actions of the other group. Suppose that fertility intentions depend on two separable and additive components: the intrinsic utility of having children and the utility from conforming to the behavior of others. The intrinsic utility parents derive from giving birth and raising a child consists of a constant term b and a random, mean-zero component ε , i.i.d. type-1 Gumbel distributed, modeling heterogeneity in fertility preferences in the population. The utility of conforming to other people’s choices is shaped by interactions with different groups in society who may hold distinct preferences. We assume that migrants interact with other migrants and natives, with probability p_m and p_n , respectively, such that $p_m + p_n = 1$.

In this setting, allowing fertility intentions and shocks to change over time, an individual

has children at time t if and only if:

$$b + p_m a_m(t) + p_n a_n(t) + \varepsilon_t \geq p_m(1 - a_m(t)) + p_n(1 - a_n(t)) \quad (3)$$

where $a_m(t)$ denotes the perceived fraction of migrants who have children, and $a_n(t)$ denotes the perceived fraction of natives having children. More generally, the binary choice and the corresponding population shares may represent having many children or holding a high ideal number of children.

Expression 3 already suggests that the dynamics of migrants' convergence to natives' fertility will be influenced by the relative value of conforming. If b is high, fertility preferences are mostly driven by the intrinsic value of having children, and other people's norms (native or migrants alike) have a relatively low impact on behavior.

We assume that migrants have perfect knowledge of migrants' descriptive social norms, but they are not perfectly informed about the fertility norms of natives. We define $\bar{a}_m(t)$ and $\bar{a}_n(t)$ as the actual fraction having children, among migrants and natives, respectively. We assume that the perceived fraction having children among migrants is the actual one, $\bar{a}_m(t) = a_m(t)$. The actual fertility level for natives is at steady state $\bar{a}_n$, but migrants' beliefs about it evolve over time according to:

$$a_n(t+1) = (1 - \gamma)a_n(t) + \gamma\bar{a}_n, \quad \gamma \in (0, 1] \quad (4)$$

where γ determines the speed of beliefs' convergence. High γ implies a quick convergence of beliefs to the true value and vice versa.^{§§§} Assuming that migrants' fertility in their host country is higher than natives', and that they believe that natives' fertility is similar to theirs upon arrival, we can derive testable implications from this theory.

Comparative statistics and link to the experiment

Lemma 6.1 *Taking as given the law of motion for beliefs about native fertility, fertility intentions in the host country then follow a logistic decision rule:*

$$\bar{a}_m(t+1) = \sigma(b - p_m - p_n + 2p_m\bar{a}_m(t) + 2p_na_n(t)), \quad \text{where } \sigma(z) = \frac{1}{1 + e^{-z}} \quad (5)$$

Suppose that $\bar{a}_n < a_n(t) < \bar{a}_m(t)$. The fraction of migrants having children in time $t+1$ increases in p_m . Call $z_t = b - p_m - p_n + 2p_m\bar{a}_m(t) + 2p_na_n(t)$ the utility from having children.

^{§§§} We are implicitly assuming that this steady-state does not change with the arrival of migrants. This may, for example, be due to the migrants' population not being large enough to affect it.

The derivative of future migrants' fertility in the speed of updating is given by:

$$\frac{\partial \bar{a}_m(t+1)}{\partial \gamma} = 2(1 - p_m)\sigma(z_t)(1 - \sigma(z_t))(\bar{a}_n - a_n(t-1)) < 0.$$

The cross-derivative of $\bar{a}_m(t+1)$ in γ and p_m is positive for high enough z_t , or for γ low enough. There exists a $\tilde{z} \in \mathbb{R}$ such that the cross derivative in b is negative for $z_t < \tilde{z}$, positive for $z_t > \tilde{z}$ and 0 for $z_t = \tilde{z}$.

Equation 5 helps us understand the main mechanism driving individuals' fertility choices. Higher intrinsic value of fertility b increases the number of migrants having children. In addition, fertility increases with higher childbearing among either migrants or natives because of the utility from conformity. Finally, an increase in the probability of interacting with migrants, p_m , drives an increase in fertility, by shifting the relevant reference group.

In the experiment, the informational treatment corresponds to an exogenous increase in the belief-updating parameter γ . By providing information about native fertility, the treatment accelerates the adjustment of migrants' beliefs towards the true native fertility level $\bar{a}_n$. Empirically, this is captured by comparing post-treatment beliefs between treated and control respondents, which provides a direct reduced-form estimate of the effect of increasing γ . Because migrants initially overestimate native fertility, the model predicts that a higher γ reduces fertility intentions, by lowering the social norm value of having children. This is consistent with our empirical findings.

The magnitude of this effect depends on both social segregation and intrinsic fertility preferences. A higher p_m has two opposing implications. On the one hand, higher p_m directly raises the utility of having children by increasing the weight migrants place on the fertility norms of their own community, which exhibits higher fertility. On the other hand, by reducing the weight placed on native norms, higher p_m weakens the indirect channel through which faster learning affects fertility intentions. The net effect depends on the interaction between these two forces, captured by the cross-derivative of $\bar{a}_m(t+1)$ in γ and p_m . When this is positive, greater segregation makes the negative effect of faster updating less pronounced. Migrants remain more strongly anchored to the fertility norm of their own community. The lemma specifies that this occurs when learning is slow enough or when the utility of having a children is high enough. The role of b is similarly state-dependent. A larger intrinsic value of fertility may either attenuate or amplify the response to information. In this case, a larger b amplifies the fertility-reducing effect of faster updating when z_t is sufficiently low.

The heterogeneous treatment effects on gender and religiosity that we estimate above map naturally onto the parameters of the model, and help characterize predictions that are theoretically ambiguous. Syrian male migrants report higher skills in Turkish, both written

and spoken, and a higher frequency of having Turkish friends. This pattern may, in part, be driven by the substantially higher share of males who are actively working—69% versus 5% of female, and it is well represented by men having a higher probability of interactive with native, p_n .^{¶¶¶} The stronger response to the main treatment among males suggests that we are not in the region where lower segregation reduces the fertility-reducing effect of faster belief updating; in other words, the utility of having children z_t is not high in the sample.

For religious individuals, for whom the intrinsic value of having children, b , is plausibly higher, larger effects of the treatment indicate that we are in the region where a higher intrinsic value of fertility amplifies rather than attenuates the response to native norm information, again corresponding to the utility of having children, z_t , being relatively low. However, results on religiosity may be interpreted also in light of differences in segregation p_m , similarly to results on gender. While religious males have a slightly lower probability of working than non-religious males, they might have more socializing occasions to meet natives. Indeed, almost 10% of religious males nominated more than one Turkish friend, while this share does not reach even 5% in the overall population.

Long-run dynamics

The results we just derived and our intervention inform us about the short-term and medium-term effects of raising belief convergence speed γ . However, we can use our theory to think more generally about the long-run dynamics of integration in the destination country. Assume that migrants' initial beliefs about natives' fertility correspond to the fertility of migrants in the host country, and that this is higher than steady-state fertility for natives in the host country.

As migrants gradually learn the true native norm, their fertility choices adjust as well. Proposition 6.1 characterizes the resulting decline in migrant fertility relative to its initial level.

Proposition 6.1 *Define the difference between migrants' fertility at time t and fertility at arrival, $x_t = \bar{a}_m(0) - \bar{a}_m(t)$. Call z_0 the initial utility from having children:*

$$z_0 = b - 1 + 2\bar{a}_m(0).$$

^{¶¶¶} Consistent with this, the average self-reported score for males for spoken Turkish is 2.81 among males and 2.1 among females; for written Turkish it is 2.4 among males and 2 among females. Among males, 29% report having Turkish friends compared to 13% among females.

Suppose that $a_n(0) = \bar{a}_m(0) > \bar{a}_n$. Then:

$$x_t \approx \bar{x}_t \equiv \mu \left[\frac{1 - \lambda^t}{1 - \lambda} - \frac{(1 - \gamma)^t - \lambda^t}{1 - \gamma - \lambda} \right] > 0$$

where λ and μ are defined as follows:

$$\begin{cases} \lambda = 2\sigma'(z_0)p_m \\ \mu = 2\sigma'(z_0)p_n(\bar{a}_m(0) - \bar{a}_n) \end{cases}$$

The dynamics of migrants' fertility are influenced by three main forces in the model: the value of conforming to other migrants p_m , the speed of beliefs updating γ , and the scaled initial gap in fertility between natives and migrants $\bar{a}_m(0) - \bar{a}_n$.

Proposition 6.2 Suppose that $p_m = 0$. Then:

$$x_t \approx \tilde{x}_t \equiv 2\sigma'(z_0)(\bar{a}_m(0) - \bar{a}_n) \left(1 - \frac{(1 - \gamma)^t}{1 - \gamma} \right).$$

If instead $p_m > 0$, for t large enough $\bar{x}_t < \tilde{x}_t$. Further, for t small enough, x_t decreases in p_m .

Proposition 6.2 isolates the role of segregation. When $p_m = 0$ (full integration), migrants respond only to native behavior, and the dynamics are driven entirely by the speed of belief updating. In this case, convergence is slowed down only by belief updating frictions.

When $p_m > 0$, migrants place some weight on the behavior of other migrants. Because migrant fertility is initially higher, this creates persistence: current migrant fertility affects future migrant fertility through the conformity channel. Greater segregation therefore slows convergence, both by reducing the weight placed on native norms and by reinforcing the initially higher fertility norm within the migrant community.

Proposition 6.3 If $\gamma \rightarrow 0$, $x_t \approx 0$. If instead $\gamma \rightarrow 1$:

$$x_t \approx \hat{x}_t \equiv \mu \left[\frac{1 - \lambda^{t-1}}{1 - \lambda} \right]$$

If $0 < \gamma < 1$, the derivative $\partial x_t / \partial \gamma$ is positive.

Proposition 6.3 instead isolates the role of information frictions. If γ approaches zero, beliefs about native fertility do not adjust and migrant fertility remains close to its initial level. If γ approaches one, migrants learn the native norm immediately. Even in this case,

however, fertility convergence need not be instantaneous, because choices remain partly anchored to the behavior of other migrants whenever $p_m > 0$. More generally, x_t increases with γ . In words, faster belief updating produces faster convergence toward native fertility.

Overall, the theoretical results help interpret our empirical findings and extend them to a society-wide, long-run setting. The information treatment can be viewed as an exogenous increase in the speed at which migrants update their beliefs about native fertility norms, revealing how belief updating affects fertility preferences and intentions in the short and medium run. The model then moves beyond the experimental horizon to study the equilibrium dynamics of norm convergence, in which migrants’ beliefs and fertility choices evolve jointly. The speed and extent of convergence depend on information frictions, on social segregation, the intrinsic value of fertility, and the initial gap between migrant and native norms.

7 Conclusion

Migrants’ fertility levels tend to converge toward those of native populations over generations, or even earlier when migrants arrive in the destination country as children. This convergence may reflect adaptation to the economic and institutional environment of the host country, including changes in education, employment, and labor market incentives. At the same time, migration exposes individuals to new peer groups and social norms. Understanding whether migrants learn about and respond to these norms is therefore important for explaining the process of cultural integration.

In this paper, we provide causal evidence that information frictions about natives’ descriptive social norms can shape migrants’ preferences and intended behavior. Using a randomized information intervention among Syrian migrants in Türkiye, we show that providing information about Turkish fertility norms lowers short- and medium-term fertility intentions and the ideal number of children. The same information also changes perceptions of the social stigma associated with family size and corrects migrants’ beliefs about natives’ fertility behavior and preferences. By contrast, providing comparable information about Syrian migrants has no statistically significant effect on fertility intentions and substantially smaller effects on ideal family size. Taken together, these findings suggest that the identity of the reference group matters and that migrants respond specifically to information about the norms of the host society.

Other than shedding light on the role of information frictions in slowing down cultural integration, our paper shows how these dynamics are at play in the case of forced displacement. This contribution is especially important at a time of historically high levels of forced

migration worldwide. Syrian migrants in Türkiye are a prime example: many have remained in the host country for years under temporary protection while facing persistent uncertainty about return. These features make both the extent and the timing of convergence toward native social and cultural patterns especially difficult to predict.

Our findings point to learning about the host society as one mechanism underlying this convergence. What appears in observational data as a gradual convergence of migrants' preferences toward those of natives may partly reflect a process of learning about the social environment at destination. Migrants may initially hold inaccurate beliefs about what natives do and prefer, particularly for behaviors and attitudes that are difficult to observe through casual interactions. As these information frictions are reduced, migrants may adjust their own preferences and intended behavior toward those prevailing in the host society. The stronger and more persistent responses among individuals more exposed to fertility-related social pressure and among men, who are more integrated into Turkish social and economic life in our sample, are consistent with heterogeneity in migrants' responsiveness to host-country norms.

More broadly, our findings suggest that fertility preferences may be socially embedded and influenced by conformity motives. This has important implications for public policy. In societies characterized by persistently low fertility, fertility choices may not respond strongly to simple targeted economic incentives if individuals partly coordinate their behavior with prevailing social norms. Understanding how such norms are formed, transmitted, and updated may therefore be important for the design of policies aimed at influencing fertility behavior.

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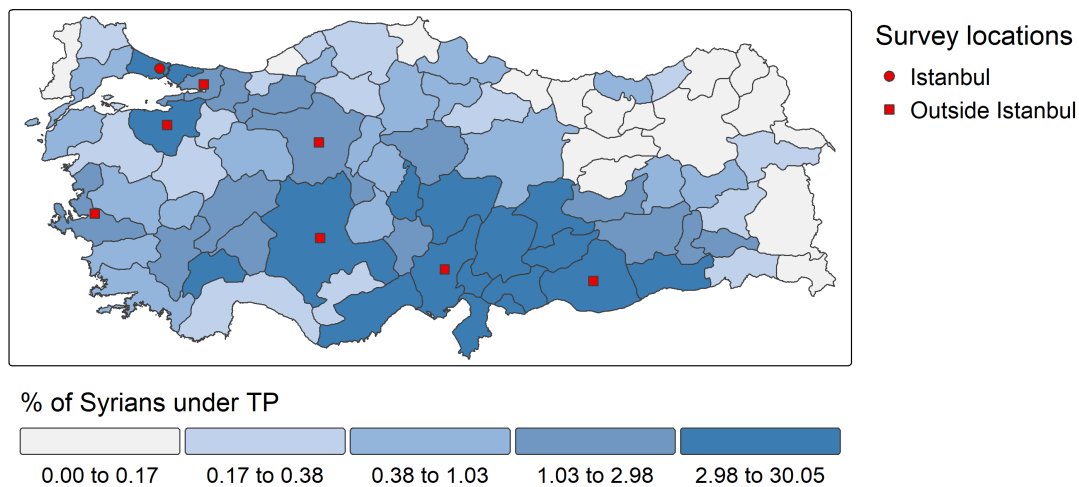
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Appendix

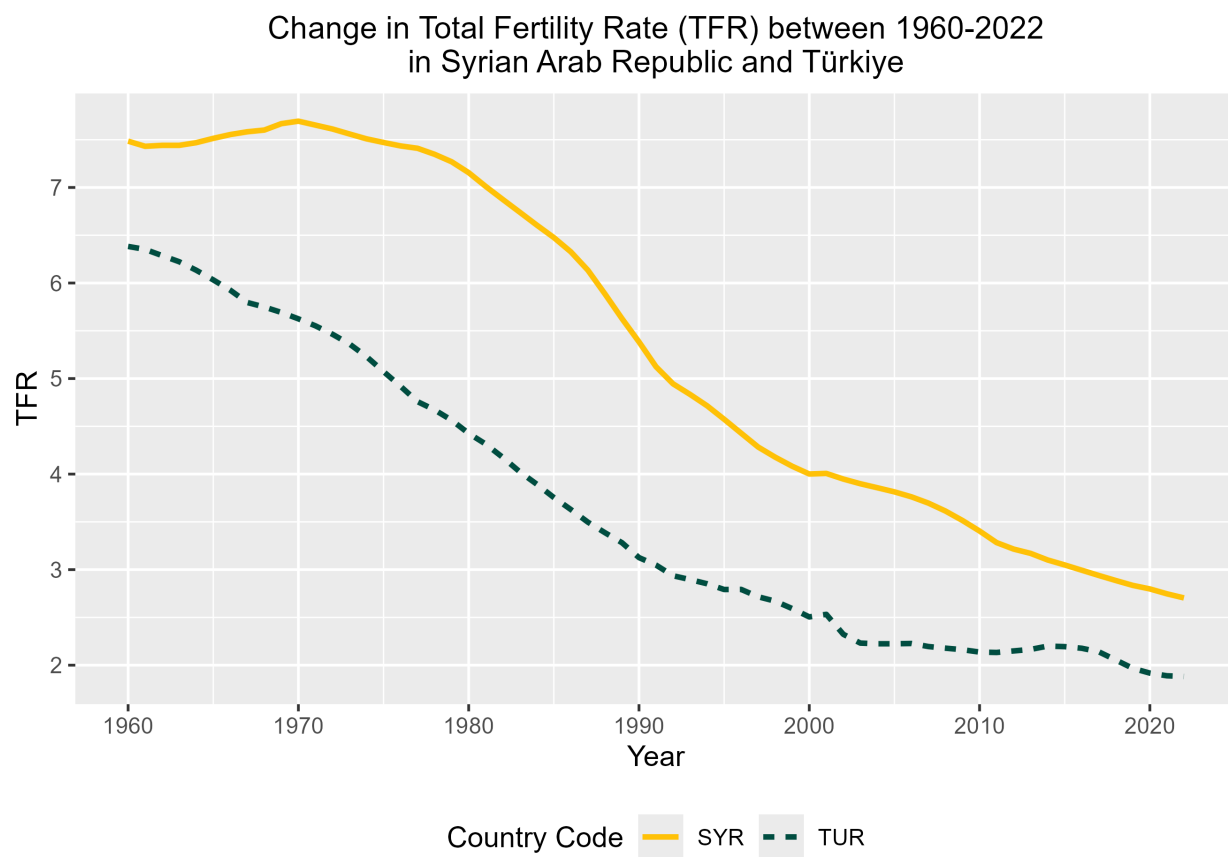
Figures

Figure A1: Distribution of Syrians across Provinces and Survey Locations



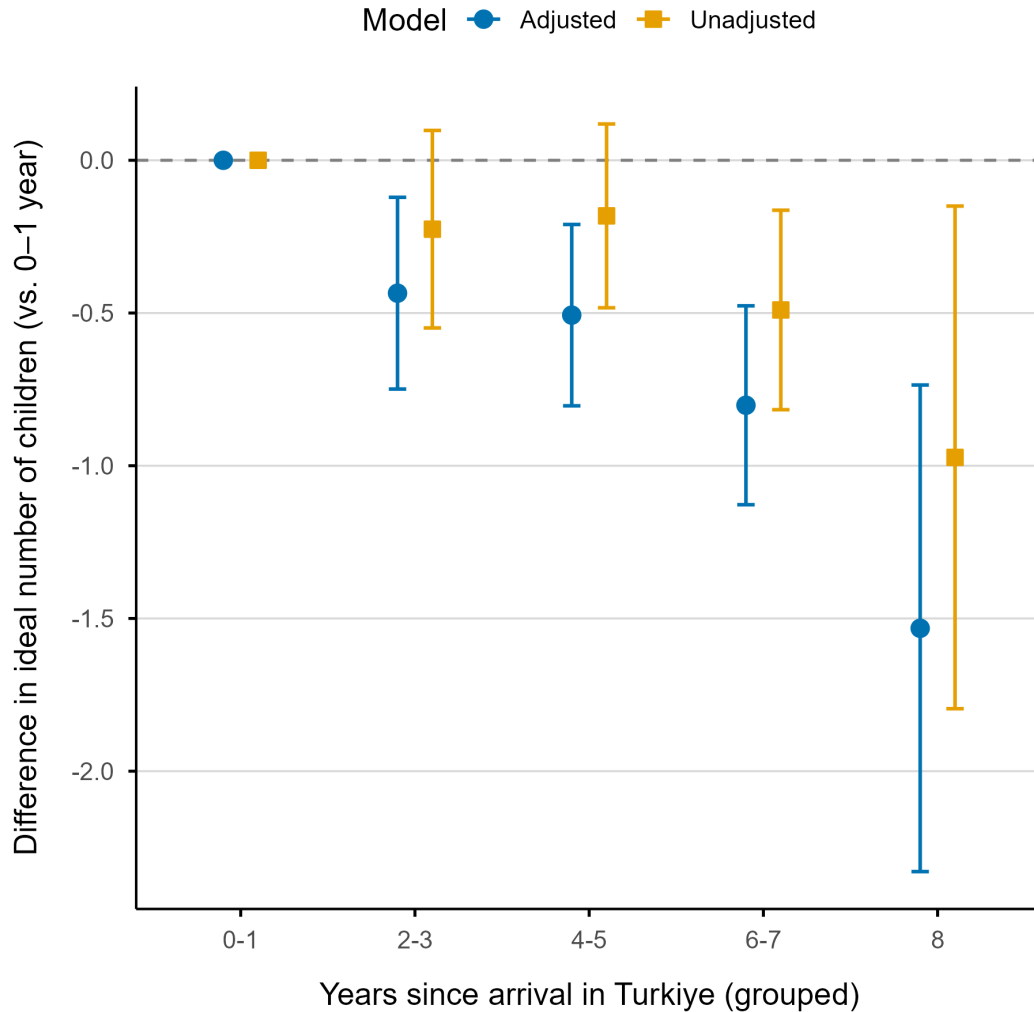
Notes: Source: Directorate General of Migration Management. The map shows distribution of Syrians under temporary protection (TP) across provinces in Türkiye, as percentage share of the total population (resident population and Syrians under TP). The breaks correspond to quantiles. Data as of 31 October 2024.

Figure A2: Comparison of the Change in Total Fertility Rates in Syria and Türkiye



Notes: Source: World Bank Group. The World Bank data come from a combination of United Nations Population Division, World Population Prospects: 2022 Revision and national statistical offices. While there may be slight differences with the data from Turkish Statistical Institute, we used World Bank data for both countries in this figure to maintain consistency.

Figure A3



The figure descriptively demonstrates the differences in the answers to the question on *ideal number of children* by years since arrival in Türkiye in the TDHS Syrian Sample 2018, relative to the 0-1 year after arrival. The figure shows the coefficient plots from weighted linear regressions with point estimates depicted by dots and 95% confidence intervals depicted by whiskers. The dependent variable is ideal number of children, main explanatory variable is the grouped years since arrival in Türkiye (categorical). The adjusted model also includes respondent's age, age squared, number of living children, childhood region of residence (in Syria), current region of residence (in Türkiye) and total years of education as controls. The horizontal dashed line at 0 indicates parity with the reference group, which is set as 0-1 year since arrival in Türkiye. 2011 is the earliest year of arrival in the dataset after cleaning, in order to include arrivals from Syria only after the start of the civil war, making 8 years as the maximum duration of stay possible in TDHS Syrian Sample 2018.

Tables

Table A1: Balance table

	(1) Control Mean	(2) Δ SY Info Treatment	(3) Δ TR Info Treatment
Employed Before Migration	0.358 (0.480)	0.014 (0.029)	0.075** (0.030)
Financial Distress	0.710 (0.454)	-0.030 (0.028)	-0.045 (0.028)
Social Security	0.204 (0.403)	0.016 (0.025)	0.037 (0.025)
Blue-collar	0.285 (0.452)	-0.053** (0.027)	-0.007 (0.027)
White-collar	0.120 (0.325)	-0.018 (0.019)	0.005 (0.020)
Currently Unemployed	0.135 (0.342)	-0.017 (0.020)	-0.019 (0.020)
Mother Alive	0.801 (0.399)	-0.051** (0.026)	-0.034 (0.025)
Father Alive	0.646 (0.479)	-0.032 (0.029)	-0.050* (0.029)
Given birth	0.787 (0.410)	0.057** (0.023)	-0.031 (0.025)
Speaking Proficiency in Turkish	2.440 (1.092)	-0.120* (0.063)	-0.017 (0.064)
Reading Proficiency in Turkish	2.279 (1.146)	-0.202*** (0.067)	-0.104 (0.068)

Table A1 (continued)

	(1) Control Mean	(2) Δ SY Info Treatment	(3) Δ TR Info Treatment
Nr. of people living in household	5.551 (2.120)	-0.149 (0.125)	-0.047 (0.125)
Nr. of people working in household	1.262 (0.721)	-0.121*** (0.043)	-0.026 (0.045)
Nr. of single siblings	1.292 (1.516)	-0.086 (0.091)	-0.005 (0.099)
Nr. of married siblings	4.335 (3.133)	0.017 (0.199)	-0.166 (0.185)
Conformistic	0.356 (0.479)	0.142*** (0.030)	0.206*** (0.030)
Durable PCA Index	-0.004 (2.049)	-0.137 (0.116)	0.131 (0.127)
Origin			
Southern Syria	0.167 (0.374)	-0.023 (0.021)	0.002 (0.022)
Aleppo	0.485 (0.500)	0.000 (0.030)	-0.041 (0.030)
North-East Syria excl. Aleppo	0.232 (0.422)	0.039 (0.026)	0.041 (0.027)
Central Syria	0.091 (0.288)	-0.031* (0.016)	-0.001 (0.018)
Coastal Syria	0.025 (0.155)	0.015 (0.011)	-0.000 (0.010)
Observations	534	1,067	1,067

Notes: The first column reports the control mean of the variable and its standard deviation in parenthesis. The last two columns report differences between the Syrian Information Treatment, the Turkish Information Treatment and the control group, with OLS estimates and standard errors (in parentheses). *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A2: Descriptive Statistics by Gender and Region

	Male			Female		
	West	Center, South, East	Total	West	Center, South, East	Total
<i>Our sample</i>						
Age	33.47	36.47	34.57	32.38	34.28	33.52
Number of children	1.50	3.74	2.32	2.58	3.73	3.27
Ideal number of children	3.77	4.53	4.05	3.68	4.32	4.07
Age at first birth	25.47	24.93	25.21	21.78	21.38	21.53
Years since arrival	7.33	7.39	7.36	7.55	7.34	7.42
Years of education	11.06	11.04	11.05	11.28	10.19	10.62
Employment	0.70	0.67	0.69	0.09	0.02	0.05
Turkish speaking: good/very good	0.69	0.53	0.63	0.45	0.20	0.30
Origin						
Southern Syria	0.27	0.07	0.20	0.27	0.04	0.13
Aleppo	0.35	0.65	0.45	0.39	0.55	0.48
North-East excl. Aleppo	0.21	0.21	0.21	0.20	0.36	0.29
Central Syria	0.12	0.06	0.10	0.10	0.04	0.07
Coastal Syria	0.05	0.02	0.04	0.04	0.01	0.02
<i>TDHS sample</i>						
Age				27.66	28.08	27.99
Number of (living) children				2.24	2.61	2.53
Ideal number of children				3.60	4.04	3.95
Age at first birth				20.28	19.90	19.98
Years since arrival				3.63	4.34	4.19
Years of education				6.50	6.74	6.69
Employment				0.09	0.09	0.09
Turkish proficiency (speaking)				0.23	0.19	0.20
Origin						
Southern Syria				0.12	0.04	0.06
Aleppo				0.74	0.55	0.59
North-East excl. Aleppo				0.10	0.21	0.19
Central Syria				0.02	0.12	0.10
Coastal Syria				0.01	0.04	0.03

Notes: This table reports sample means by gender and region for our 2024 sample and weighted means for the TDHS 2018 Syrian women's sample. Regions are harmonized into West and Central/South/East; North is excluded from the TDHS comparison because it is not covered in our survey and hosts relatively few Syrians. Employment, Turkish proficiency, education, and Syrian province of origin are harmonized across datasets where possible. TDHS male columns are blank because the TDHS Syrian sample includes women only.

Table A3: Treatments' impacts on beliefs about Syrians couples

	(1)	(2)	(3)	(4)
	Beliefs: n. children		Beliefs: ideal children	
SY Info. Treatment	-0.0252 (0.0927)	-0.0710 (0.0845)	-0.522*** (0.169)	-0.501*** (0.143)
TR Info. Treatment	-0.365*** (0.0914)	-0.349*** (0.0820)	-0.768*** (0.163)	-0.732*** (0.137)
Controls	No	Yes	No	Yes
<i>p-value: SY = TR</i>	0.000	0.001	0.101	0.072
<i>N</i>	1600	1600	1600	1600
Control mean	4.57	4.57	5.89	5.89

Notes: In the first two columns, the outcome is the subjective expectation about the average number of children Syrian couples have. In the last two columns, the outcome is the subjective expectation about the ideal number of children Syrian couples have if they could choose. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A4: Total Fertility Rate (TFR) by province

	(1)	(2)	(3)	(4)
	Beliefs: n. children		Beliefs: ideal children	
SY Info. Treatment	-0.0252 (0.0927)	-0.0710 (0.0845)	-0.522*** (0.169)	-0.501*** (0.143)
TR Info. Treatment	-0.365*** (0.0914)	-0.349*** (0.0820)	-0.768*** (0.163)	-0.732*** (0.137)
Controls	No	Yes	No	Yes
<i>p-value: SY = TR</i>	0.000	0.001	0.101	0.072
<i>N</i>	1600	1600	1600	1600
Control mean	4.57	4.57	5.89	5.89

Notes: In the first two columns, the outcome is the subjective expectation about the average number of children Syrian couples have. In the last two columns, the outcome is the subjective expectation about the ideal number of children Syrian couples have if they could choose. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A5: Treatments' impact intentions to have a child: HTE by religiosity

	(1)	(2)	(3)	(4)	(5)	(6)
	Within 2 years		Within 5 years		At some point	
SY Info. Treatment	0.0185 (0.0272)	0.00986 (0.0266)	0.00911 (0.0339)	0.00557 (0.0319)	0.0782* (0.0405)	0.0784** (0.0362)
TR Info. Treatment	0.00740 (0.0276)	0.00536 (0.0263)	0.0395 (0.0355)	-0.00608 (0.0324)	0.0832** (0.0413)	0.0538 (0.0382)
Religious	0.0898*** (0.0310)	0.0614** (0.0297)	0.0674* (0.0367)	0.0527 (0.0351)	0.0325 (0.0416)	0.0509 (0.0382)
T1 $\times$ Religious	-0.0931** (0.0424)	-0.0589 (0.0411)	-0.0968* (0.0508)	-0.0474 (0.0476)	-0.147** (0.0597)	-0.0815 (0.0529)
T2 $\times$ Religious	-0.121*** (0.0407)	-0.113*** (0.0391)	-0.180*** (0.0498)	-0.112** (0.0463)	-0.200*** (0.0587)	-0.140*** (0.0531)
Controls	No	Yes	No	Yes	No	Yes
<i>p-value: SY + SY $\times$ Religious = 0</i>	0.022	0.123	0.021	0.244	0.115	0.938
<i>p-value: TR + TR $\times$ Religious = 0</i>	0.000	0.000	0.000	0.000	0.005	0.022
<i>N</i>	1600	1600	1600	1600	1600	1600
Control mean	0.15	0.15	0.25	0.25	0.45	0.45

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with religiosity on the intention to have child. In the first two columns, the outcome is a dummy that equals one if the individual intends to have a child within two years, in the second two, it is intention to have a child in 5 years; and in the third two, it is intention to have a child at some point. Odd columns report the estimates obtained without controls in the regression, and even columns report the estimates obtained using controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A6: Treatments' impact on stigma: HTE by religiosity

	(1)	(2)	(3)	(4)
	People think I should have more children		People think I should have fewer children	
SY Info. Treatment	0.0295 (0.0403)	0.0423 (0.0396)	0.0570* (0.0297)	0.0679** (0.0283)
TR Info. Treatment	0.0630 (0.0418)	0.104** (0.0411)	0.0691** (0.0316)	0.0426 (0.0315)
Religious	0.138*** (0.0423)	0.130*** (0.0406)	0.0604** (0.0306)	0.0759** (0.0304)
SY×Religious	-0.0567 (0.0599)	-0.0741 (0.0577)	0.0277 (0.0473)	-0.0114 (0.0438)
TR×Religious	-0.188*** (0.0593)	-0.258*** (0.0577)	0.0786 (0.0482)	0.0752* (0.0448)
Controls	No	Yes	No	Yes
<i>p-value: SY+ SY × Religious = 0</i>	0.538	0.454	0.021	0.089
<i>p-value: TR+ TR × Religious = 0</i>	0.003	0.000	0.000	0.000
<i>N</i>	1600	1600	1600	1600
Control mean	0.40	0.40	0.15	0.15

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with religiosity on the stigma variables. In the first two columns, the outcome is perceived higher stigmatization about having children, and in the second two columns, the outcome is perceived lower stigmatization about having children. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A7: Impact of treatments on intentions to have a child: HTE by gender

	(1)	(2)	(3)	(4)	(5)	(6)
	Within 2 years		Within 5 years		At some point	
SY Info. Treatment	-0.0578*	-0.0440	-0.0641*	-0.0274	0.0288	0.0560
	(0.0315)	(0.0306)	(0.0385)	(0.0357)	(0.0461)	(0.0408)
TR Info. Treatment	-0.101***	-0.0965***	-0.0996***	-0.117***	-0.0700	-0.0892**
	(0.0302)	(0.0294)	(0.0369)	(0.0343)	(0.0442)	(0.0393)
Female	-0.0552*	-0.0409	-0.107***	-0.0602*	-0.105**	-0.0965**
	(0.0292)	(0.0312)	(0.0356)	(0.0365)	(0.0427)	(0.0418)
T1×Female	0.0545	0.0440	0.0501	0.0184	-0.0269	-0.0264
	(0.0412)	(0.0397)	(0.0503)	(0.0464)	(0.0603)	(0.0531)
T2×Female	0.0876**	0.0806**	0.0796	0.0989**	0.0846	0.133**
	(0.0409)	(0.0396)	(0.0499)	(0.0462)	(0.0598)	(0.0529)
Controls	No	Yes	No	Yes	No	Yes
$p\text{-value: } SY + SY \times Female = 0$	0.899	1.000	0.666	0.765	0.961	0.393
$p\text{-value: } TR + TR \times Female = 0$	0.626	0.555	0.552	0.565	0.716	0.224
N	1600	1600	1600	1600	1600	1600
Control mean	0.15	0.15	0.25	0.25	0.45	0.45

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with gender on the intention to have a child. In the first two columns, the outcome is a dummy that equals one if the individual intends to have a child within two years, in the second two, it is intention to have a child in 5 years; and in the third two, it is intention to have a child at some point. Odd columns report the estimates obtained without controls in the regression, and even columns report the estimates obtained using controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A8: Treatments' impact on stigma: HTE by gender

	(1)	(2)	(3)	(4)
	People think I should have more children		People think I should have fewer children	
SY Info. Treatment	0.0217 (0.0461)	0.0266 (0.0440)	0.112*** (0.0361)	0.0917*** (0.0319)
TR Info. Treatment	-0.0289 (0.0436)	-0.0451 (0.0413)	0.166*** (0.0356)	0.113*** (0.0310)
Female	0.0537 (0.0430)	-0.00560 (0.0450)	0.0369 (0.0306)	0.0973*** (0.0319)
SY×Female	-0.0396 (0.0607)	-0.0372 (0.0579)	-0.0747 (0.0476)	-0.0493 (0.0431)
TR×Female	0.00115 (0.0598)	0.0307 (0.0576)	-0.0988** (0.0489)	-0.0562 (0.0442)
Controls	No	Yes	No	Yes
<i>p-value: SY+ SY × Female = 0</i>	0.652	0.783	0.231	0.145
<i>p-value: TR+ TR × Female = 0</i>	0.496	0.723	0.042	0.072
<i>N</i>	1600	1600	1600	1600
Control mean	0.40	0.40	0.15	0.15

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with gender on the stigmatization variables. In the first two columns, the outcome is perceived higher stigmatization about having children, and in the second two columns, the outcome is perceived lower stigmatization about having children. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A9: Treatments' impact on stigma: HTE by gender and religiosity

	(1)	(2)	(3)	(4)	(5)	(6)
	Within 2 years		Within 5 years		At some point	
SY Info. Treatment	0.0250 (0.0490)	0.0168 (0.0469)	-0.0181 (0.0628)	0.0206 (0.0575)	0.0943 (0.0649)	0.109** (0.0551)
TR Info. Treatment	-0.0179 (0.0461)	-0.0241 (0.0437)	0.0244 (0.0629)	-0.0794 (0.0545)	0.0911 (0.0636)	-0.0118 (0.0581)
Female	-0.0247 (0.0401)	-0.0329 (0.0412)	-0.142*** (0.0513)	-0.0772 (0.0507)	-0.156*** (0.0581)	-0.120** (0.0557)
SY×Female	-0.00954 (0.0587)	-0.0106 (0.0567)	0.0472 (0.0738)	-0.0225 (0.0684)	-0.0205 (0.0825)	-0.0471 (0.0720)
TR×Female	0.0414 (0.0575)	0.0480 (0.0550)	0.0201 (0.0754)	0.120* (0.0677)	-0.0189 (0.0831)	0.107 (0.0759)
Religious	0.111** (0.0504)	0.0601 (0.0477)	0.0128 (0.0596)	0.0227 (0.0566)	-0.0370 (0.0622)	0.0125 (0.0545)
SY×Religious	-0.156** (0.0690)	-0.117* (0.0661)	-0.0894 (0.0852)	-0.0937 (0.0793)	-0.131 (0.0919)	-0.104 (0.0768)
TR×Religious	-0.149** (0.0635)	-0.126** (0.0603)	-0.207*** (0.0802)	-0.0647 (0.0724)	-0.263*** (0.0858)	-0.131* (0.0766)
SY×Religious×Female	0.114 (0.0876)	0.105 (0.0846)	-0.00737 (0.106)	0.0797 (0.0991)	-0.0346 (0.121)	0.0317 (0.105)
TR×Religious×Female	0.0668 (0.0833)	0.0374 (0.0798)	0.0635 (0.103)	-0.0647 (0.0946)	0.136 (0.118)	0.0150 (0.105)
Controls	No	Yes	No	Yes	No	Yes
<i>p-value: SY+ SY × Female = 0</i>	0.630	0.844	0.452	0.959	0.148	0.186
<i>p-value: TR+ TR × Female = 0</i>	0.494	0.471	0.283	0.315	0.177	0.055
<i>p-value: SY+ SY × Religious = 0</i>	0.007	0.032	0.062	0.179	0.575	0.914
<i>p-value: TR+ TR × Religious = 0</i>	0.000	0.000	0.000	0.003	0.003	0.005
<i>p-value: SY+ SY × Relig. × Fem. = 0</i>	0.066	0.135	0.520	0.278	0.588	0.646
<i>p-value: TR+ TR × Relig. × Fem. = 0</i>	0.082	0.143	0.072	0.768	0.059	0.700
<i>N</i>	1600	1600	1600	1600	1600	1600
Control mean	0.15	0.15	0.25	0.25	0.45	0.45

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with gender, religiosity and a triple interaction between them. In the first two columns, the outcome is a dummy that equals one if the individual intends to have a child within two years, in the second two, it is intention to have a child in 5 years; and in the third two, it is intention to have a child at some point. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A10: Treatments' impact on intentions to have child: HTE by neighborhood type

	(1)	(2)	(3)	(4)	(5)	(6)
	Within 2 years		Within 5 years		At some point	
SY Info. Treatment	-0.00965 (0.0288)	-0.0197 (0.0278)	-0.0194 (0.0345)	-0.0195 (0.0319)	0.0404 (0.0391)	0.0420 (0.0340)
TR Info. Treatment	-0.0545** (0.0271)	-0.0631** (0.0258)	-0.0379 (0.0341)	-0.0739** (0.0307)	0.0101 (0.0390)	-0.0218 (0.0344)
Segregated	-0.00814 (0.0316)	-0.00153 (0.0309)	-0.0364 (0.0369)	0.00195 (0.0356)	-0.0312 (0.0424)	0.00484 (0.0393)
T1×Segregated	-0.0421 (0.0421)	0.00122 (0.0416)	-0.0437 (0.0503)	0.00365 (0.0478)	-0.0757 (0.0603)	-0.00906 (0.0541)
T2×Segregated	0.00512 (0.0409)	0.0256 (0.0404)	-0.0330 (0.0495)	0.0254 (0.0477)	-0.0704 (0.0597)	0.00945 (0.0549)
Controls	No	Yes	No	Yes	No	Yes
<i>p-value: SY+ SY × TR majority = 0</i>	0.092	0.552	0.085	0.659	0.442	0.439
<i>p-value: TR+ TR × TR majority = 0</i>	0.106	0.232	0.048	0.187	0.182	0.774
<i>N</i>	1600	1600	1600	1600	1600	1600
Control mean	0.15	0.15	0.25	0.25	0.45	0.45

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with majority of migrants in the environment on the intentions to have a child. In the first two columns, the outcome is a dummy that equals one if the individual intends to have a child within two years, in the second two, it is intention to have a child in 5 years; and in the third two, it is intention to have a child at some point. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A11: Treatments' impact on stigma: HTE by neighborhood type

	(1)	(2)	(3)	(4)
	People think I should have more children		People think I should have fewer children	
SY Info. Treatment	0.00964 (0.0388)	0.00946 (0.0372)	0.0315 (0.0261)	0.0502** (0.0248)
TR Info. Treatment	-0.0455 (0.0385)	-0.0355 (0.0373)	0.0829*** (0.0285)	0.0845*** (0.0266)
Segregated	0.0407 (0.0436)	-0.0307 (0.0415)	0.0956*** (0.0325)	0.105*** (0.0319)
T1×Segregated	-0.0248 (0.0612)	-0.0133 (0.0595)	0.0898* (0.0495)	0.0331 (0.0456)
T2×Segregated	0.0320 (0.0606)	0.0153 (0.0599)	0.0652 (0.0506)	-0.00580 (0.0471)
Controls	No	Yes	No	Yes
$p\text{-value: } SY + SY \times TR \text{ majority} = 0$	0.750	0.934	0.004	0.031
$p\text{-value: } TR + TR \times TR \text{ majority} = 0$	0.775	0.668	0.000	0.040
N	1600	1600	1600	1600
Control mean	0.40	0.40	0.15	0.15

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with majority of migrants in the environment on the stigmatization variables. In the first two columns, the outcome is perceived higher stigmatization about having children and in the second two columns, the outcome is perceived lower stigmatization about having children. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A12: Treatments' impact the intentions to have a child at follow-up

	(1)	(2)	(3)	(4)	(5)	(6)
	Child within 2 years		Child within 5 years		Child at some point	
SY Info Treat.	0.00801 (0.0186)	0.00537 (0.0185)	-0.00505 (0.0246)	0.00212 (0.0240)	0.0412 (0.0321)	0.0520* (0.0296)
TR Info Treat.	-0.0229 (0.0171)	-0.0252 (0.0170)	-0.0224 (0.0242)	-0.0295 (0.0235)	0.00506 (0.0320)	0.00874 (0.0294)
Controls	No	Yes	No	Yes	No	Yes
<i>p-value: SY = TR</i>	0.076	0.075	0.468	0.157	0.259	0.138
<i>N</i>	1366	1366	1366	1366	1366	1366
Control mean	0.08	0.08	0.17	0.17	0.36	0.36

Notes: This table reports OLS estimates of the effects of the treatments on the intentions to have children or fertility intention variables. The outcome is a dummy that equals one if the individual intends to have a child within two years (columns 1 and 2), in 5 years (columns 3 and 4), or at some point (columns 5 and 6). Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A13: Treatments' impact on stigma at follow-up

	(1)	(2)	(3)	(4)
	People think I should have more children		People think I should have fewer children	
SY Info. Treatment	-0.0649** (0.0316)	-0.0464 (0.0303)	0.0456 (0.0291)	0.0399 (0.0270)
TR Info. Treatment	-0.0754** (0.0316)	-0.0644** (0.0301)	0.0254 (0.0288)	0.00392 (0.0259)
Controls	No	Yes	No	Yes
<i>p-value: SY = TR</i>	0.732	0.536	0.493	0.165
<i>N</i>	1366	1366	1366	1366
Control mean	0.39	0.39	0.24	0.24

Notes: This table reports OLS estimates of the effects of the treatments on the stigmatization variables. In the first two columns, the outcome is perceived higher stigmatization about having children, and in the second two columns, the outcome is perceived lower stigmatization about having children. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A14: Treatments' impact on beliefs about Turkish couples at follow-up

	(1)	(2)	(3)	(4)
	Beliefs: n. children		Beliefs: ideal children	
SY Info. Treatment	0.318*** (0.0672)	0.160*** (0.0600)	-0.0267 (0.0759)	-0.199*** (0.0702)
TR Info. Treatment	0.227*** (0.0643)	0.0628 (0.0605)	-0.0886 (0.0766)	-0.203*** (0.0698)
Controls	No	Yes	No	Yes
p -value: $SY = TR$	0.161	0.087	0.408	0.955
N	1366	1366	1366	1366
Control mean	2.50	2.50	2.55	2.55

Notes: This table reports OLS estimates of the effects of the treatments on the beliefs about Turkish couples' number of children variables. In the first two columns, the outcome is the subjective expectation about the average number of children that Turkish couples have, in the second two columns, the outcome is the subjective expectation about the ideal number of children Turkish couples have if they could choose. Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A15: Treatments' impact intentions to have a child at follow-up: HTE by gender

	(1)	(2)	(3)	(4)	(5)	(6)
	Within 2 years		Within 5 years		At some point	
SY Info. Treatment	0.00687 (0.0300)	0.00301 (0.0290)	0.0376 (0.0423)	0.0455 (0.0390)	0.118** (0.0510)	0.112** (0.0443)
TR Info. Treatment	-0.0596** (0.0235)	-0.0623*** (0.0235)	-0.0264 (0.0381)	-0.0443 (0.0355)	0.00538 (0.0483)	-0.0181 (0.0425)
Female	-0.00746 (0.0257)	-0.0210 (0.0282)	-0.0294 (0.0354)	-0.0228 (0.0379)	-0.0154 (0.0459)	-0.0332 (0.0461)
SY×Female	0.00223 (0.0381)	0.00605 (0.0372)	-0.0670 (0.0516)	-0.0699 (0.0480)	-0.124* (0.0656)	-0.0971* (0.0577)
TR×Female	0.0674** (0.0342)	0.0673** (0.0333)	0.00613 (0.0493)	0.0276 (0.0460)	-0.00116 (0.0645)	0.0498 (0.0573)
Controls	No	Yes	No	Yes	No	Yes
$p\text{-value: } SY + SY \times Female = 0$	0.700	0.702	0.322	0.407	0.889	0.691
$p\text{-value: } TR + TR \times Female = 0$	0.752	0.834	0.515	0.583	0.922	0.425
N	1366	1366	1366	1366	1366	1366
Control mean	0.08	0.08	0.17	0.17	0.36	0.36

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with gender on the intention to have child variables. The outcome is a dummy that equals one if the individual intends to have a child within two years (columns 1 and 2), in 5 years (columns 3 and 4), or at some point (columns 5 and 6). Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A16: Treatments' impact the intentions to have a child at follow-up: HTE by religiosity

	(1)	(2)	(3)	(4)	(5)	(6)
	Within 2 years		Within 5 years		At some point	
SY Info. Treatment	0.0339 (0.0233)	0.0168 (0.0235)	0.00836 (0.0330)	-0.00665 (0.0322)	0.0756* (0.0442)	0.0531 (0.0410)
TR Info. Treatment	0.0283 (0.0242)	0.0173 (0.0235)	0.0445 (0.0358)	-0.00211 (0.0339)	0.0340 (0.0458)	-0.00411 (0.0432)
Religious	0.0562** (0.0263)	0.0524** (0.0264)	0.0246 (0.0355)	0.0325 (0.0350)	-0.0179 (0.0454)	0.00679 (0.0416)
SY×Religious	-0.0539 (0.0376)	-0.0228 (0.0374)	-0.0284 (0.0496)	0.0203 (0.0476)	-0.0783 (0.0642)	-0.00330 (0.0585)
TR×Religious	-0.102*** (0.0346)	-0.0855** (0.0339)	-0.129*** (0.0486)	-0.0553 (0.0457)	-0.0536 (0.0640)	0.0235 (0.0577)
Controls	No	Yes	No	Yes	No	Yes
$p\text{-value: } SY + SY \times Religious = 0$	0.496	0.837	0.589	0.701	0.953	0.239
$p\text{-value: } TR + TR \times Religious = 0$	0.003	0.006	0.010	0.073	0.662	0.622
N	1366	1366	1366	1366	1366	1366
Control mean	0.08	0.08	0.17	0.17	0.36	0.36

Notes: This table reports OLS estimates of the effects of the treatments and their interaction with religiosity on the intention to have child variables. The outcome is a dummy that equals one if the individual intends to have a child within two years (columns 1 and 2), in 5 years (columns 3 and 4), or at some point (columns 5 and 6). Odd columns report estimates obtained only controlling for the stratification dummy, and even columns report the estimates obtained also using additional controls. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Table A17: Ideal Children correlation with pregnancy 2nd wave

	(1)	(2)	(3)	(4)	(5)	(6)
	Ideal # Children		Pregnancy at follow up			
			Δ Ideal - Present		Δ Ideal - Present (≥ 0)	
	No	Yes	No	Yes	No	Yes
Ideal N. Children	0.000207 (0.00366)	0.00986** (0.00455)	0.0153*** (0.00319)	0.0101*** (0.00342)	0.0186*** (0.00456)	0.0134** (0.00520)
Controls	No	Yes	No	Yes	No	Yes
<i>N</i>	1366	1366	1366	1366	1366	1366

Notes: This table reports OLS estimates of the effect of ideal nr. of children on being pregnant or having a pregnant partner in the follow-up. First two columns, use the raw ideal number, the second two columns use the difference between ideal and present nr. of children, the last two columns use again the same difference, but negative numbers are forced as 0. Standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5 and 1 percent level, respectively.

Proofs

Proof of Lemma 6.1

Setup. Recall the belief-updating rule for migrants' perception of native fertility:

$$a_n(t) = (1 - \gamma)a_n(t-1) + \gamma\bar{a}_n,$$

so that

$$\frac{\partial a_n(t)}{\partial \gamma} = \bar{a}_n - a_n(t-1).$$

Define the utility index

$$z_t = b - p_m - p_n + 2p_m\bar{a}_m(t) + 2p_na_n(t).$$

Substituting $p_n = 1 - p_m$ this simplifies to

$$z_t = b - 1 + 2a_n(t) + 2p_m(\bar{a}_m(t) - a_n(t)),$$

and the law of motion for migrant fertility is

$$\bar{a}_m(t+1) = \sigma(z_t), \quad \sigma(z) = \frac{1}{1 + e^{-z}}.$$

We use throughout $\sigma'(z) = \sigma(z)(1 - \sigma(z)) > 0$ and $\sigma''(z) = \sigma'(z)(1 - 2\sigma(z))$.

Part 1: $\bar{a}_m(t+1)$ is increasing in p_m .

Differentiating z_t with respect to p_m :

$$\frac{\partial z_t}{\partial p_m} = 2(\bar{a}_m(t) - a_n(t)).$$

By the chain rule:

$$\frac{\partial \bar{a}_m(t+1)}{\partial p_m} = \sigma'(z_t) \cdot 2(\bar{a}_m(t) - a_n(t)).$$

Under the assumption $\bar{a}_n < a_n(t) < \bar{a}_m(t)$, we have $\bar{a}_m(t) - a_n(t) > 0$, and since $\sigma'(z_t) > 0$ always, this derivative is strictly positive.

Part 2: The derivative of $\bar{a}_m(t+1)$ with respect to γ is negative.

Differentiating z_t with respect to γ :

$$\frac{\partial z_t}{\partial \gamma} = 2p_n \frac{\partial a_n(t)}{\partial \gamma} = 2(1 - p_m)(\bar{a}_n - a_n(t-1)).$$

By the chain rule:

$$\frac{\partial \bar{a}_m(t+1)}{\partial \gamma} = 2(1-p_m) \sigma'(z_t) (\bar{a}_n - a_n(t-1)) = 2(1-p_m) \sigma(z_t)(1-\sigma(z_t)) (\bar{a}_n - a_n(t-1)).$$

This is negative because $\sigma'(z_t) > 0$, $(1-p_m) \geq 0$, and migrants hold beliefs above the true native level and converge from above, so $\bar{a}_n < a_n(t-1)$, giving $\bar{a}_n - a_n(t-1) < 0$.

Part 3: The cross-derivative in γ and p_m is positive for z_t high enough or for γ low enough.

Differentiating $\frac{\partial \bar{a}_m(t+1)}{\partial \gamma}$ with respect to p_m via the product rule:

$$\frac{\partial^2 \bar{a}_m(t+1)}{\partial \gamma \partial p_m} = 2(\bar{a}_n - a_n(t-1)) \left[-\sigma'(z_t) + (1-p_m) \cdot 2(\bar{a}_m(t) - a_n(t)) \cdot \sigma''(z_t) \right].$$

The first term arises from differentiating $(1-p_m)$; the second from differentiating $\sigma'(z_t)$ via $\frac{\partial z_t}{\partial p_m} = 2(\bar{a}_m(t) - a_n(t))$. Substituting $\sigma''(z_t) = \sigma'(z_t)(1-2\sigma(z_t))$ and factoring out $\sigma'(z_t)$:

$$\frac{\partial^2 \bar{a}_m(t+1)}{\partial \gamma \partial p_m} = 2(\bar{a}_n - a_n(t-1)) \sigma'(z_t) \left[-1 + 2(1-p_m)(\bar{a}_m(t) - a_n(t))(1-2\sigma(z_t)) \right].$$

Since $(\bar{a}_n - a_n(t-1)) < 0$ and $\sigma'(z_t) > 0$, the cross-derivative is positive if and only if the bracket is negative, i.e.:

$$2(1-p_m)(\bar{a}_m(t) - a_n(t))(1-2\sigma(z_t)) < 1.$$

For $z_t > 0$ we have $\sigma(z_t) > \frac{1}{2}$, so $(1-2\sigma(z_t)) < 0$. Since $(1-p_m) \geq 0$ and $\bar{a}_m(t) - a_n(t) \geq 0$, the left-hand side is non-positive, and hence strictly less than 1. The cross-derivative is therefore positive for all $z_t > 0$. This condition holds if and only if

$$\gamma < \frac{b-1+2a_n(t-1)+2p_m(\bar{a}_m(t)-a_n(t-1))}{2(1-p_m)(a_n(t-1)-\bar{a}_n)} \equiv \underline{\gamma}.$$

Part 4: There exists $\tilde{z}$ such that the cross-derivative in γ and b changes sign at $z_t = \tilde{z}$.

Since $\frac{\partial z_t}{\partial b} = 1$, differentiating $\frac{\partial \bar{a}_m(t+1)}{\partial \gamma}$ with respect to b :

$$\begin{aligned} \frac{\partial^2 \bar{a}_m(t+1)}{\partial \gamma \partial b} &= 2(1-p_m)(\bar{a}_n - a_n(t-1)) \cdot \sigma''(z_t) \\ &= 2(1-p_m)(\bar{a}_n - a_n(t-1)) \sigma'(z_t)(1-2\sigma(z_t)). \end{aligned}$$

The factors $2(1 - p_m)(\bar{a}_n - a_n(t - 1))$ and $\sigma'(z_t)$ are both nonzero, so the sign is determined entirely by $(1 - 2\sigma(z_t))$. Since σ is strictly increasing and $\sigma(0) = \frac{1}{2}$:

$$1 - 2\sigma(z_t) \begin{cases} > 0 & \text{if } z_t < 0, \\ = 0 & \text{if } z_t = 0, \\ < 0 & \text{if } z_t > 0. \end{cases}$$

Combined with the negative prefactor $2(1 - p_m)(\bar{a}_n - a_n(t - 1)) < 0$, the cross-derivative is negative for $z_t < 0$ and positive for $z_t > 0$. Setting $\tilde{z} = 0$ gives the threshold stated in the lemma.

Proof of Proposition 6.1

Setup. Before arriving in the destination country, migrants interact only with other migrants, so fertility is at steady state:

$$\bar{a}_m(0) = \sigma(b - 1 + 2\bar{a}_m(0)).$$

Upon arrival, migrants initially believe native fertility equals their own, $a_n(0) = \bar{a}_m(0)$. By the belief-updating equation, beliefs about native fertility then evolve as:

$$a_n(t) = \bar{a}_n + (\bar{a}_m(0) - \bar{a}_n)(1 - \gamma)^t.$$

Linearization. Define $x_t = \bar{a}_m(0) - \bar{a}_m(t) \geq 0$ as the decline in migrant fertility since arrival. The law of motion for migrant fertility is:

$$\bar{a}_m(t + 1) = \sigma(b - 1 + 2p_m\bar{a}_m(t) + 2p_na_n(t)).$$

Rewriting in terms of x_t :

$$\bar{a}_m(0) - x_{t+1} = \sigma(b - 1 + 2p_m(\bar{a}_m(0) - x_t) + 2p_na_n(t)).$$

We linearize around the initial point $(x_t, a_n(t)) = (0, \bar{a}_m(0))$, where $z_0 = b - 1 + 2(p_m\bar{a}_m(0) + p_n\bar{a}_m(0)) = b - 1 + 2\bar{a}_m(0)$, and note that $\sigma(z_0) = \bar{a}_m(0)$ by the steady-state condition. A first-order Taylor expansion gives:

$$\bar{a}_m(0) - x_{t+1} \approx \bar{a}_m(0) - 2\sigma'(z_0)p_mx_t + 2\sigma'(z_0)p_n(a_n(t) - \bar{a}_m(0)),$$

so that:

$$x_{t+1} \approx 2\sigma'(z_0)p_mx_t - 2\sigma'(z_0)p_n(a_n(t) - \bar{a}_m(0)).$$

Substituting $a_n(t) - \bar{a}_m(0) = (\bar{a}_n - \bar{a}_m(0))(1 - (1 - \gamma)^t) + (\bar{a}_n - \bar{a}_m(0)) \cdot 0$. More precisely:

$$a_n(t) - \bar{a}_m(0) = -(\bar{a}_m(0) - \bar{a}_n)(1 - \gamma)^t + \bar{a}_n - \bar{a}_m(0) + (\bar{a}_m(0) - \bar{a}_n)(1 - \gamma)^t = (\bar{a}_n - \bar{a}_m(0)) [1 - (1 - \gamma)^t].$$

Defining

$$\lambda = 2\sigma'(z_0)p_m, \quad \mu = 2\sigma'(z_0)p_n(\bar{a}_m(0) - \bar{a}_n) > 0,$$

the recursive system becomes:

$$x_{t+1} \approx \lambda x_t + \mu [1 - (1 - \gamma)^t].$$

Solving the recursion. Starting from $x_0 = 0$ and iterating forward:

$$x_t = \sum_{k=0}^{t-1} \lambda^{t-1-k} \mu [1 - (1 - \gamma)^k] = \mu \sum_{k=0}^{t-1} \lambda^{t-1-k} - \mu \sum_{k=0}^{t-1} \lambda^{t-1-k} (1 - \gamma)^k.$$

The first sum is a standard geometric series:

$$\sum_{k=0}^{t-1} \lambda^{t-1-k} = \frac{1 - \lambda^t}{1 - \lambda}.$$

The second sum, assuming $\lambda \neq 1 - \gamma$, is:

$$\sum_{k=0}^{t-1} \lambda^{t-1-k} (1 - \gamma)^k = \lambda^{t-1} \sum_{k=0}^{t-1} \left(\frac{1 - \gamma}{\lambda} \right)^k = \frac{\lambda^t - (1 - \gamma)^t}{\lambda - (1 - \gamma)} = \frac{(1 - \gamma)^t - \lambda^t}{1 - \gamma - \lambda}.$$

Combining:

$$x_t \approx \bar{x}_t \equiv \mu \left[\frac{1 - \lambda^t}{1 - \lambda} - \frac{(1 - \gamma)^t - \lambda^t}{1 - \gamma - \lambda} \right].$$

Positivity. We establish $x_t > 0$ for all $t \geq 2$ directly from the recursion

$$x_{t+1} = \lambda x_t + \mu [1 - (1 - \gamma)^t],$$

with $\lambda > 0$ and $\mu > 0$. At $t = 1$: $x_1 = \mu[1 - (1 - \gamma)^0] = 0$. At $t = 2$: $x_2 = \mu[1 - (1 - \gamma)] = \mu\gamma > 0$. For $t \geq 2$, both $\lambda x_t > 0$ and $\mu[1 - (1 - \gamma)^t] > 0$, so $x_{t+1} > 0$ follows by induction.

Proof of Proposition 6.2

The proof of the closed-form expression and its positivity follows from the previous proposition.

Part 1: $p_m = 0$. Setting $\lambda = 0$ and $\mu_0 = 2\sigma'(z_0)(\bar{a}_m(0) - \bar{a}_n)$ in the closed form:

$$x_t = \mu_0 \left[\frac{1-0}{1-0} - \frac{(1-\gamma)^t - 0}{1-\gamma-0} \right] = \mu_0 \left[1 - \frac{(1-\gamma)^t}{1-\gamma} \right] = \tilde{x}_t.$$

Part 2: $\bar{x}_t < \tilde{x}_t$ for $p_m > 0$ and t large enough. For large t , both $\lambda^t \rightarrow 0$ and $(1-\gamma)^t \rightarrow 0$, so:

$$x_t \rightarrow \frac{\mu}{1-\lambda}, \quad \tilde{x}_t \rightarrow \mu_0.$$

We need to show $\frac{\mu}{1-\lambda} < \mu_0$. Since $p_n = 1 - p_m$, we have $\mu = \mu_0(1 - p_m)$, so the condition becomes:

$$\frac{\mu_0(1 - p_m)}{1 - \lambda} < \mu_0,$$

which simplifies to $1 - p_m < 1 - \lambda$, or equivalently $\lambda < p_m$. Since $\lambda = 2\sigma'(z_0)p_m$ and $\sigma'(z_0) = \sigma(z_0)(1 - \sigma(z_0))$, we have $\sigma'(z_0) \leq \frac{1}{4}$, so:

$$\lambda = 2\sigma'(z_0)p_m \leq \frac{p_m}{2} < p_m.$$

Hence $x_t < \tilde{x}_t$ for t large enough.

Part 3: x_t decreases in p_m for t small enough. From the recursion $x_{t+1} = \lambda x_t + \mu[1 - (1 - \gamma)^t]$, we have $x_1 = 0$ for all p_m , and:

$$x_2 = \mu\gamma = 2\sigma'(z_0)(1 - p_m)(\bar{a}_m(0) - \bar{a}_n)\gamma.$$

Since $\mu = 2\sigma'(z_0)(1 - p_m)(\bar{a}_m(0) - \bar{a}_n)$ is strictly decreasing in p_m (notice that p_m does not affect z_0), and $\lambda x_1 = 0$, we have that x_2 is strictly decreasing in p_m . By continuity, x_t is decreasing in p_m for t small enough.

Proof of Proposition 6.3

Part 1: $\gamma \rightarrow 0$. As $\gamma \rightarrow 0$, $(1 - \gamma)^t \rightarrow 1$ for all finite t , so the closed form gives:

$$x_t \rightarrow \mu \left[\frac{1 - \lambda^t}{1 - \lambda} - \frac{1 - \lambda^t}{1 - \lambda} \right] = 0.$$

Part 2: $\gamma \rightarrow 1$. As $\gamma \rightarrow 1$, $(1 - \gamma)^t \rightarrow 0$. Substituting directly into the second term of the closed form:

$$\frac{(1 - \gamma)^t - \lambda^t}{1 - \gamma - \lambda} \rightarrow \frac{-\lambda^t}{-\lambda} = \lambda^{t-1}.$$

Substituting into the closed form:

$$x_t \rightarrow \mu \left[\frac{1 - \lambda^t}{1 - \lambda} - \lambda^{t-1} \right] = \mu \left[\frac{1 - \lambda^t - \lambda^{t-1}(1 - \lambda)}{1 - \lambda} \right] = \mu \left[\frac{1 - \lambda^{t-1}}{1 - \lambda} \right] = \hat{x}_t.$$

Part 3: $\partial x_t / \partial \gamma > 0$. Since λ and μ do not depend on γ , letting $\alpha = 1 - \gamma$ and using $\frac{\partial}{\partial \gamma} = -\frac{\partial}{\partial \alpha}$:

$$\frac{\partial x_t}{\partial \gamma} = \mu \frac{\partial}{\partial \alpha} \left[\frac{\alpha^t - \lambda^t}{\alpha - \lambda} \right] = \mu \frac{t\alpha^{t-1}(\alpha - \lambda) - (\alpha^t - \lambda^t)}{(\alpha - \lambda)^2}.$$

The denominator is positive. For the numerator, use the factorization $\alpha^t - \lambda^t = (\alpha - \lambda)(\alpha^{t-1} + \alpha^{t-2}\lambda + \dots + \lambda^{t-1})$ to rewrite it as:

$$(\alpha - \lambda) \left[t\alpha^{t-1} - \sum_{k=0}^{t-1} \alpha^{t-1-k} \lambda^k \right] = (\alpha - \lambda) \sum_{k=0}^{t-1} (\alpha^{t-1} - \alpha^{t-1-k} \lambda^k).$$

Since $\alpha > \lambda > 0$, each term $\alpha^{t-1} - \alpha^{t-1-k} \lambda^k > 0$, so the numerator is positive and hence $\frac{\partial x_t}{\partial \gamma} > 0$ for all $0 < \gamma < 1$.