The Labor Market Integration of Syrian Refugees in Turkey*

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Abstract:

Turkey hosts the largest population of refugees globally; however, we know little about their labor market outcomes at the national level. We use the 2018 round of the Turkey Demographic and Health Survey, which includes a representative sample of Syrian refugees in Turkey for the first time, to examine a rich set of labor market outcomes. We find that the native-refugee gap in men's employment in Turkey (in favor of natives) is much smaller than that reported for most developed countries. Moreover, men's employment peaks quite early (one year) after arrival and remains there, whereas women's employment is lower to begin with and changes little over time. Once we account for demographic and educational differences, the native-refugee gap in men's (women's) paid employment reduces to 4.7 (4.0) percentage points (pp). These small gaps conceal the fact that refugees' formal employment is much lower. Even after accounting for the covariates, refugee men's formal employment rate is 58 pp lower. In addition, the native-refugee gap is the smallest in manufacturing for men and in agriculture for women, and the gap is also much smaller in wage-employment than self-employment and unpaid family work for both genders. Young refugees are more likely to work than natives, whereas the gap favors natives among the prime-age working people. Moreover, the native-refugee gap in employment widens for more educated refugees. Finally, accounting for the differences in covariates, the native-refugee gap in men's employment vanishes for Turkish-speaking refugees but persists for Arabic- and Kurdish-speaking refugees.

Keywords: Syrian refugees, labor market integration, employment, Turkey

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1. Introduction

The UNHCR (2021) reports that one in every 95 people in the world has fled their homes due to conflict and persecution. The number of forcibly displaced people worldwide has doubled in the last ten years and currently stands at 82.4 million. Refugees constitute 26.4 million of this population. In addition, there are 4.1 million asylum-seekers and 3.9 million Venezuelans displaced abroad. Of the world's refugees and Venezuelans displaced abroad, 86% are hosted in developing countries and 73% are hosted in neighboring countries (UNHCR, 2021). Syria is the major source country of these refugees, with 6.7 million Syrians seeking protection abroad, and Turkey hosts the largest population of refugees globally (which includes 3.7 million Syrians as of 2021). Of the Syrian refugees in Turkey, 49% are aged between 18 and 59 (Turkish Directorate General of Migration Management, 2021). In this paper, we examine the labor market integration of Syrian refugees in Turkey for the first time in the literature using a nationally representative dataset for them.

While an extensive literature exists on the labor market integration of economic migrants, the economic integration of refugees, less documented, could be different for several reasons. First, many refugees go through the traumatic events of conflict and forced migration—which might have long-lasting effects on their mental health, influencing their labor market integration. Second, while economic migrants choose their destination, refugees often find themselves in another country based on the ease of transportation. Hence, refugees are not self-selected based on their labor market skills or the transferability of their skills to the host country.[1] Third, refugees often face restrictions on mobility and employment in the host country. Therefore, the labor market integration of refugees could be more challenging.

The increasing number of refugees worldwide has ignited the research on their socioeconomic well-being and their impact on the host countries.[2] A key determinant of refugees' socioeconomic well-being is their labor market outcomes. In a recent paper, Brell, Dustmann, and Preston (2020) review the labor market integration of refugees in high-income countries. However,

[1] Chin and Cortes (2015) provide empirical evidence that refugees in the US are less positively selected on attributes associated with labor market success compared to other migrants.

[2] See Becker and Ferrera (2019), Maystadt et al. (2019), and Verme and Schuettler (2019) for survey articles on this issue.

as stated by these authors, we know little about refugees' labor market integration in low- or middle-income countries—where most refugees live.

Refugees' labor market integration in low- or middle-income countries could be different due to many reasons. First, high-income countries have the institutions for processing refugees' arrival and smoothing their integration, whereas these generally take place in a haphazard manner in low- or middle-income countries. For instance, it took years for Turkey to establish institutions for this purpose after the onset of the Syrian refugees' arrival. These institutions in high-income countries provide language learning, integration courses, vocational training, and job-search assistance, which help refugees' labor market integration.[3] In addition, the conditions for the recognition of qualifications and the procedures for study are already set. While the lack of these institutions hampers the refugees' labor market integration in developing countries, another important typical feature of developing-country labor markets helps it: the large informal sector. Refugees have access to job opportunities in the informal sector without needing any approval from the hosting government, and many firms are willing to hire them to avoid the payroll taxes and to be exempt from paying the mandated minimum wage level.[4]

Our context is similar in many ways to the refugee contexts in other developing countries. First, the overwhelming majority of the refugees in Turkey live in urban areas. In this sense, it is similar to the refugee contexts in Lebanon, Jordan, Pakistan, and Venezuelans in Latin American countries.[5] Second, they primarily work in the informal labor market, as in most refugee contexts in low- and middle-income countries. Third, barriers against their formal employment exist. While

[3] Sarvimäki and Hämäläinen (2016) find that an active labor market program targeting immigrants raised the compliers' earnings by 47% over a ten-year follow-up period and that the program's benefits stemmed from gearing the content towards' immigrants' special needs such as language education. Lochmann et al. (2019) report the positive effects of a language training program in France on the labor force participation of all migrant groups, including refugees. Arendt et al. (2021) report the beneficial effects of a similar reform on language training in Denmark on immigrants' earnings. Furthermore, Battisti et al. (2019) find a positive effect of a job-search assistance program on refugees' employment.

[4] Many developed countries have temporary bans on refugees' employment for a certain period after their arrival. Fasani et al. (2021) show that this policy has adverse long-term consequences on refugees' labor market outcomes. Although Turkey has a similar 6-month ban on formal employment, it is ineffective due to the availability of informal employment.

[5] On the other hand, as Clemens et al. (2018) report, refugees are generally in camps in Bangladesh, Ethiopia, and Kenya. In Uganda, they are mostly in non-camp rural areas.

Syrian refugees have been allowed to work in the formal sector since 2016, their numbers in the formal sector are low due to certain restrictions (discussed below).

Although Turkey hosts the most refugees globally, we knew almost nothing about their labor market outcomes at the national level until the launch of the 2018 round of the Turkey Demographic and Health Survey (TDHS),[6] which includes an ad-hoc module of Syrian refugees that is representative at the national level.[7] In our study, using both the native and refugee samples, we compare labor market outcomes of refugees with those of natives. The TDHS elicits certain questions about all household members, but more detailed questions about 15- to 49-year-old women (which is the target population). For all household members, we know the paid employment status. On the other hand, for all 15- to 49-year-old women and their husbands, we have information about a variety of labor market outcomes: current employment status (including paid and unpaid employment), employment status within the last 12 months, unemployment status, type and sector of employment, full-time vs. part-time status, and formal vs. informal status. We also observe a rich set of background characteristics, including the time of arrival and certain origin characteristics of refugees.

We find that refugee men in Turkey do not have much lower paid employment rates than natives. About four years after their arrival in Turkey, 61.8% of Syrian men have paid jobs (are gainfully employed) compared to 68.9% of native men. The gap is wider among women; only 6% of Syrian women in Turkey compared to 22.2% of native women have paid jobs. The baseline native-refugee gap of 7.1 (16.1) percentage points (pp) among men (women) reduces to 4.7 (4.0) pp once we account for the differences in native and refugee characteristics.

[6] The only exception is an attempt by Pinedo-Caro (2020) to identify the Syrian refugees in the 2017 Turkish Household Labor Force Survey (THLFS). The THLFS targets the permanent residents in Turkey but not the "temporary-resident" Syrian refugees; however, the sampling procedure captures some refugee households. Under certain assumptions, Pinedo-Caro (2020) tries to identify the Syrians in the 2017 THLFS. He calculates the labor force participation rate as 13.7% for female refugees, 81.0% for male refugees, 37.6% for female natives, and 77.9% for male natives (among 15- to 65-year-olds).

[7] A book published by the researchers of Hacettepe University Institute of Population Studies, which is in charge of collecting the TDHS, includes a chapter by Özgören and Arslan (2020), where the authors provide descriptive statistics of refugees' employment outcomes and examine the socioeconomic correlates of their employment.

Age, education, mother tongue, the duration of residence, and the region of residence matter substantially in refugees' paid employment—after accounting for the other covariates. While refugees younger than 25 are more likely to work than natives, older refugees are less likely to work. No native-refugee gap in paid employment exists for men with the lowest level of education (less than primary education), whereas it persists for all other education groups after accounting for the covariates. Among women, the native-refugee gap increases monotonically in education. Refugees' duration of residence matters much for paid employment of men but not for that of women. The native-refugee gap in men's paid employment, which is significant at arrival, narrows sharply within the first year of residence, after which little or no gap remains. On the other hand, the gap for women changes little by the duration of residence and persists over time. Native language matters in men's paid employment but not women's; no native-refugee gap remains for Turkish-speaking men but persists for Arabic- and Kurdish-speaking men after accounting for other covariates. Region of residence is also relevant; the native-refugee gap in men's paid employment vanishes in Istanbul (which provides many job opportunities in manufacturing), whereas the gap in women's employment vanishes in the Mediterranean and the Southeast Anatolia regions, which provide more job opportunities in agriculture.

As discussed above, the data allow the investigation of a broader set of employment outcomes for married men and all women. We find that native-refugee differences in married men's employment result from the differences in labor force participation; no native-refugee gap in men's unemployment exists. On the other hand, the native-refugee gap in women's labor force participation is wider than the gap in employment because refugee women are also less likely to be unemployed than native women after accounting for the covariates. Married refugee men above age 35 and all refugee women above age 21 are more likely to be out of the labor force than natives. The significant rise in married men's employment within their first year of residence mostly results from a fall in unemployment than a rise in labor force participation.

Our analysis by the type of employment reveals that refugees' lower employment results mainly from the larger native-refugee differences in self-employment and unpaid family work. The gap in wage employment is much lower. In fact, the gap in wage employment within the last 12 months among married men is in favor of refugees. In terms of the sector of employment, the native-refugee gap is the least in manufacturing for married men and in agriculture for women.

Both part-time and full-time employment contribute to the native-refugee gap in women's employment; however, only full-time employment contributes to the gap in married men's employment. The critical difference between natives and refugees is regarding their formal vs. informal status, particularly among men. The baseline native-refugee gap in men's formal employment is remarkably 68 pp, and it drops only to 58 pp after we account for the covariates. Among women, the baseline native-refugee formal-employment gap of 18.4 pp reduces to 6.5 pp after controlling for the covariates. On the other hand, no gap in women's informal employment remains once we control for the covariates.

Our finding that the employment rate of refugees is close to that of natives is very different from the findings for European countries, where refugees have even lower employment rates than other migrants (Brell et al., 2020). Brell et al. (2020) report that only less than 20 percent of refugees are employed in their first years after arrival in many European countries.[8] Although the employment rates of refugees increase more rapidly over time compared to that of other migrants, refugees' employment still lags behind even 10 years after their arrival in most European countries (Brell et al., 2020). Fasani et al. (2018), using data across several EU countries, show that the gap in labor market outcomes between refugees and other migrants remains even after accounting for a rich set of characteristics—which persists until about 10 years after immigration.[9] Several studies for Scandinavian countries also show that refugees do not close the employment gap.[10] The US as a host country seems to be an exception in this sense, where several studies show that refugees do relatively better in terms of employment. Evans and Fitzgerald (2017) find that refugees in the US

8 Dustmann et al. (2017) also document substantial variation in refugees' labor market integration by country of origin, and Ruiz and Vargas (2018) report worse employment outcomes for refugees than natives in the UK.

9 Similar findings are also observed in the Canadian context, where labor force participation of refugees is significantly lower than that of other migrant groups in the initial years after immigration, but the gap closes over time to some degree (Aydemir, 2011). Bevelander and Pendakur (2014) compare the labor market integration of the same group of refugees across Sweden and Canada and find that the employment and earning trajectories are remarkably similar in the two countries.

10 For instance, Bevelander (2020) shows that refugees' average employment rate is substantially lower than that of economic migrants at arrival in Sweden; even though refugees' employment rate increases at a faster rate, it remains at a lower level even after 20 years of residence. See Bratsberg, Raaum, and Røed 2014, 2017; Lundborg, 2013; Sarvimaki, 2017; Schultz-Nielsen, 2017 for similar evidence in the Scandinavian context.

work at higher rates than natives after six years of residence; however, their earnings remain much lower.[11]

On the other hand, our findings are similar in the way that integration improves over time. Brell et al. (2020) report that the first several years are critical for refugees' labor market integration in European countries.[12] However, the difference is that this takes place quickly in Turkey—refugees' employment rates do not change after the first year—unlike in developed countries. Our findings are similar to those in developed countries also in the way that labor market integration is harder for women. Syrian female refugees' employment levels are much lower and not much integration takes place over time, as Brell et al. (2020) report for female refugees in developed countries. Similarly, Ruiz and Vargas (2017) for female refugees in the UK and Bedaso (2021) and Brücker et al. (2019) for female refugees in Germany also report larger disadvantages.

Our findings are similar to the findings of the literature on the labor market outcomes of Venezuelan migrants in other Latin American countries. These studies report high employment rates for refugees but also significant occupational downgrading and informal employment (see Lebow (2021) and Bahar et al. (2018) for Colombia; Olivieri et al. (2020) for Ecuador; Shamsuddin et al. (2021) for Brazil). The context of Venezuelan migrants in Latin American countries is different in two important ways: (i) they are relatively high-skilled migrants, (ii) they speak the language of the host country. Hence, it is perhaps not surprising that these studies report very high employment rates. For instance, Olivieri et al. (2020) find that Venezuelan migrants' employment rate is 17 pp higher than Ecuadorans. They also report a remarkable improvement within the first year that stalls afterward—which is highly similar to our findings for male Syrian refugees in Turkey.

[11] Akresh (2008) and Connor (2010) find that although employment rates of refugees in the US are similar to those of other immigrants, they lag behind in earnings and occupational status. Capps et al. (2015) find that male refugees' employment rates are actually higher than those of native-born men, but female refugees have similar employment rates as native-born women. Fix, Hooper, and Zong (2017) also find that refugees in the US do not lag behind in terms of employment rates.

[12] Cortes (1994) finds a higher rate of human capital accumulation for refugees than economic migrants in the US, using the 1980 and 1990 censuses; she also reports that refugees' labor market outcomes surpassed those of natives after a while. Ruiz and Vargas (2017) find that refugees in the UK have significantly worse outcomes 8 to 15 months after arrival than other migrants but also report an improvement by 21 months. Finally, Zwysen (2019) reports a faster improvement in refugees' labor market integration than other migrants despite their worse outcomes at arrival.

In the context of Syrian refugees in other countries, the only study we know of is Krafft et al. (2018) for Jordan. They report much lower absolute levels of employment rates for Syrian refugees and lower relative levels compared to natives—compared to our findings. For example, 55% of 15- to 64-year-old Jordanian men worked compared to 38% of Syrian refugee men in 2016. Among women, 11% of Jordanians worked compared to 3% of Syrians. On the other hand, our findings are similar in the way that the most common type of work for Syrians is informal private regular wage work. A reason for the native-refugee gap in Jordan could be the very high public employment rate among natives; in fact, Krafft et al. (2018) report that 42% of Jordanian employed men are in public sector jobs. Although most Syrian refugees speak the same language as the hosting community in the Jordanian context, refugees' lack of access to jobs in the large public sector might hamper their labor market integration. In the Turkish context, although the language is likely to be a barrier in the integration of most Syrian refugees, there are wider job opportunities in the private sector compared to Jordan and refugees can be employed in these jobs without work permits (e.g., 83% of employed native men in Turkey work in the private sector compared to 58% of male workers in Jordan). Our findings reveal that this type of economic structure helps with the integration of refugees.

The remainder of the paper is organized as follows. Section 2 provides background information on Syrian refugees and labor market conditions in Turkey. Section 3 introduces the data and empirical strategy. Section 4 presents the results, and Section 5 concludes.

2. Background Information

2.1 Syrian Refugees in Turkey

The civil war in Syria has displaced millions of Syrians since March 2011. Turkey started receiving refugees in April 2011. Their numbers were small initially, at only about 8,000 at the end of 2011 and 168,000 at the end of 2012. However, the pace of their arrival picked up after 2012, and there were already 2.5 million Syrian refugees in Turkey at the end of 2015. Their numbers continued to rise from 2015 to 2018, albeit at a slower pace, and reached 3.6 million by the end of 2018. After 2018, their number has remained relatively steady. In other words, at the time of the TDHS, the majority of Syrians residing in Turkey as of 2021 had already arrived.

In 2012, Turkey officially implemented the Temporary Protection Status for Syrian refugees. The following year, in 2013, the Law on Foreigners and International Protection (LFIP) was ratified, in which the rights and obligations of persons under temporary protection were regulated. Syrian refugees were initially accommodated in camps set up by the Turkish Disaster and Emergency Management Authority (TDEMA). Later, the Turkish government set up the Turkish Directorate General for Migration Management (TDGMM) in October 2014 for registration and overall coordination of refugees. Simultaneously, the Turkish government passed the *Temporary Protection Regime*, which defined the rights of the Syrian refugees regarding their access to health, education, and social protection. Over time, Syrians left the camps and moved into cities. According to our tabulations based on the dataset used in this study, the share of refugees residing in camps decreased to 4.3% as of 2018. The statistics of the Turkish government show that this fraction dropped to 1.4% as of 2021 (TDGMM, 2021).

As refugees started marching toward Europe in large numbers in 2015, the EU signed an agreement with Turkey on the handling and funding of the refugee crisis. Consequently, the Emergency Social Safety Net (ESSN) program was established. The ESSN was first implemented in November 2016, and it reached 1.8 million refugees as of February 2021 (IFRC, 2021). The amount of payments at the household level is sizeable. Aygun et al. (2021) calculate that the monthly payment for an average refugee household with 6 members corresponded to 36% of refugee households' average monthly consumption value in 2018. The eligibility for the ESSN benefits is lost with the formal employment of household members, as detailed in Section 2.3

In terms of demographics, Syrians are younger, less educated, and have a higher male to female ratio (Aksu et al., 2018). In addition, Syrian refugees are poorer. Dayioglu et al. (2021) find that 79 percent of Syrian households are in the bottom quintile of the wealth index they generate for both natives and refugees using 21 household assets. WFP (2016) reports that 28.6 percent of Syrian refugees residing outside camps were food insecure and 93 percent were below the poverty line. A more detailed description of Syrian refugees' demographic characteristics and their comparison to natives is provided in Section 3 based on the dataset used in this study.

2.2 Labor Market Conditions in Turkey

The statistics we provide in this subsection are for the 18- to 59-year-old individuals in the Turkish Household Labor Force Survey for 2018 (the year that the TDHS with the Syrian sample is collected). Although men's labor force participation rate in Turkey is similar to that of OECD countries (except for older workers for whom early retirement possibilities were available), the female labor force participation rates are much lower for all age groups in Turkey (Tunali et al., 2021). The participation rate of 18- to 59-year-olds in 2018 was 85% for men but 42% for women. The unemployment rate was 8.3% for men and 6.1% for women. Many workers in Turkey are not wage earners. Self-employment (17.8% among employed men and 9.5% among employed women) and unpaid family work (3.7% among employed men and 21.4% among employed women) are common.

In addition, agriculture is still an important provider of employment. Among 18- to 59-year-olds, 11.7% of all employed men and 23.2% of all employed women worked in agriculture in 2018. Many workers in Turkey are employed informally—without social security coverage. In fact, 24.5% employed men and 38.5% of employed women work informally among the 18- to 59-year-olds. The fraction among women is high primarily because they are more likely to work in agriculture. Informal employment is more prevalent in agriculture and construction. In 2018, the incidence of informality in the 18-59 age group was 79.6% in agriculture, whereas it was 18% in manufacturing, 32.4% in construction, and 18.8% in services. In terms of the type of employment, informality is less common among wage workers than the self-employed because the latter group is more likely to be in agriculture. Among 18- to 59-year-olds, 15.8% of wage workers were informally employed compared to 59.9% of the self-employed.

2.3 Syrian Refugees in the Turkish Labor Market

Syrian refugees did not have the right to formal employment until 2016, except for special circumstances. Only 7,692 work permits were issued to Syrians until 2016, mainly to those who started a business. With the enactment of Law 8375 in January 2016, Syrian refugees under temporary protection gained the right to formal employment under certain conditions. First, they need to be registered with the TDGMM; most satisfy this condition as it is also a precondition for receiving the ESSN cash transfers. Second, six months must have passed after receiving an ID

from the TDGMM. Third, a limit exists to the number of refugees that employers can hire; in particular, the number of refugees cannot surpass ten percent of the Turkish employees in any firm (Içduygu and Şimşek, 2016). Fourth, refugees are supposed to take formal employment in the province they are registered. Although changing the province of registration is technically possible, it is a cumbersome and costly procedure (del Carpio et al., 2018). Finally, the most critical impediment against formal employment is that families lose their eligibility for the ESSN program in case of formal employment of a family member. This matters much, given the high number of ESSN beneficiaries and the generosity of the cash transfers, as discussed above. It is also important to note that work permits are given for a year, which can be extended with a renewing application. Therefore, the number of work permits given to Syrians remained small even after 2016. It was 13,290 in 2016, 20,966 in 2017, and 34,573 in 2018—the year of our analysis.[13]

Little is known about the labor market performance of Syrian refugees in Turkey to date because of a lack of nationally representative data for them. Only recently, Dayioglu et al. (2021) have examined child labor among Syrian refugees (for 12- to 17-year-olds) using the same dataset as our study. They report very high paid employment rates among refugee boys: 18.8% for 12- to 14-year-olds and a remarkable 48.0% for 15- to 17-year-olds. These rates are higher than those for similarly aged native boys. Using the 2009 Syria Family Health Survey (SFHS-2009), they also note that these percentages are also considerably higher than the corresponding values for pre-war Syria at 7.6% and 29.0%, respectively.

3. Data and Empirical Methodology

3.1 Data

We use the 2018 round of the Turkey Demographic and Health Survey (TDHS), conducted by the Institute of Population Studies of Hacettepe University. The survey is conducted every five years and provides a snapshot of the demographic characteristics and health status of women and their children in Turkey. The 2018 wave includes a module (TDHS-S) that gathers similar information from Syrian refugees residing in Turkey. Households in the survey are chosen to be

[13] Similarly, Bahar et al. (2021) find that the regularization of undocumented Venezuelans in Colombia in 2018, which gave them the right to acquire work permits, had a minimal impact on their formal employment.

representative of native and refugee populations as of 2018 in Turkey. In this study, we use data from the refugee module and data about natives from the main survey. Data in the survey are collected with two questionnaires. In the first one, the main demographical and employment indicators are collected for each household member. We refer to the data from this questionnaire as the "Person Data" throughout the study. In the second questionnaire, a more detailed set of demographic characteristics, including women's marriage and birth history, and more detailed information on labor market outcomes, including work history, are collected from each woman aged between 15 and 49. We refer to the data from this questionnaire as the "Women Data" throughout the study. In the Women Data, detailed information about labor market activities of husbands of the women in the sample is also collected, and we use this information in our empirical analysis as well.

Various labor market activities are observed in the TDHS. The Person Data provides information about paid employment as the only measure of employment for both genders, whereas the Women Data provides information about current employment, job search, and labor force participation for each woman and their husbands. The Women Data also provides the employment history of each woman in the target sample (i.e., women aged between 15 and 49). In particular, for each job held since age 12, the start and end dates of this employment and several job characteristics (including the wage status, industry, sector, social security status, and full-time vs. part-time status) are collected for women in the data. Using the employment history, we obtain the characteristics of current employment and whether each woman who was not employed at the survey time had worked in the preceding 12 months. We also identify the characteristics of this job in the preceding 12 months. Moreover, if the woman observed in the Women Data was married by the survey time, similar information about her husband's recent labor market activities (including his current employment or employment in the preceding 12 months along with this job's characteristics) is gathered. We analyze these outcomes as dependent variables in our analysis.

It is important to highlight that some indicators of labor market outcomes in TDHS data are slightly different from the corresponding items in the standard labor market surveys. First, the Person Data elicits whether the individual works in a paid job. A caveat of this information is that it measures the type of employment that results in earnings. It is clear that wage earners would respond to this question in the affirmative. For self-employed and employers, it is less obvious;

some individuals in these types of employment would answer this question in a non-affirmative way. On the other hand, the Women Data collects information on employment in any job. Indeed, as discussed in the next section, our tabulations based on the comparison of employment statistics for the sample individuals subject to the same sampling restrictions across data sources show that paid employment rate in the Person Data is lower than the current employment rate in the Women Data (about 10% lower for men and about 20% for women.) Second, in the Women Data, information on the job search is gathered from women who were currently not employed by the survey time, which is more consistent with the definition of unemployment in the standard labor force surveys. However, the Women Data collects job search information from husbands if they were not employed in the preceding 12 months. Lastly, our measure of the labor force participation in the Women Data is slightly different from its conventional definition. In particular, we consider individuals who were employed or were searching for a job or had worked in the last 12 months at the time of the survey as in the labor force.

In sum, the Person Data covers all individuals; however, we only know paid employment status of individuals. The Women Data covers all women, and we know about a rich set of employment variables (including labor force participation and unemployment status, the type of employment, the sector of employment, formal vs. informal status, and full-time vs. part-time status). Women Data covers only *married* men, but we have the same rich set of labor market outcomes for this group.

Main demographic indicators are available both in the Person and Women Data of the TDHS. From these variables, we employ age, educational attainment, relation to household head, the composition of household members, and region and type of current residence as control variables in our regression analysis. We additionally use information about language and arrival year to explore the heterogeneity of the labor market integration among Syrian refugees. It is important to highlight that the educational attainment of men is coded differently in the Person and Women Data. To enhance the consistency of the analysis, we obtain the educational attainment of husbands from the Person Data when analyzing their labor market outcomes in the Women Data.[14]

[14] In this merging, we could not find educational information of 265 observations either because the husband in the Person Data or information about his education is missing. For such cases, we use the educational attainment information in the Women Data to infer the missing information. In the Women Data, junior secondary education (i.e.,

Similarly, information on language is gathered only in the Women Data, and we take the language variable from the Women Data in our analysis of the Person Data.[15]

3.2 Descriptive Statistics

We restrict our sample to 18- to 59-year-old men and women in the Person Data to study the labor market integration of Syrian refugees among working-age adults. In the Women Data, we restrict our sample to 18- to 49-year-old women (because older women are not observed) and their 18- to 59-year-old husbands. Thus, the samples of men differ by their marital status across the Person and Women Data, whereas the samples of women mainly differ by their age. We additionally exclude a few observations with missing information on labor market outcomes.[16] In total, we analyze 10972 native men, 2580 refugee men, 11202 native women, and 2444 refugee women from the Person Data in this study, while we analyze 5056 native men, 1710 refugee men, 6731 native women, and 1995 refugee women from the Women Data.

3.2.1 Demographic and Educational Outcomes

Table 1 demonstrates demographic characteristics of interest separately for each gender and nativity group. Native men and women observed both in the Person and Women Data are on average older than refugees. In particular, the share of refugees who are younger than 30 is considerably larger (about 55% of refugee men and women in the Person Data) than the fraction of natives in these age groups (about 35% of native men and women). It is important to highlight that the age distribution of observations differs between the Person and Women data because of the data constraints. Since the sample of men in the Women Data is restricted to married men, individuals in this dataset are expected to be older than those observed in the Person Data, and this

6- to 8-year-education) is not separated from secondary education (high school). Therefore, we assume that those coded as "incomplete secondary" in the Women Data belong to the category of "incomplete secondary" in the classification of the Person Data, and we also assume that those codes as "complete secondary" in the Women Data belong to the category of "complete high schools" in the Person Data.

[15] For observations that are not matched and missing this information, we infer it from the language of the women sharing the same household.

[16] In particular, eight observations with missing information for paid employment are excluded from the analysis of the Person Data, and 16 observations with missing information of employment, unemployment, or labor force participation are excluded from the analysis of the Women Data.

conjecture holds both for native and refugee men. However, women observed in the Women Data are on average younger than those in the Person Data because the sample in the Women Data does not include women older than 49.

There are noticeable differences in educational attainment between natives and refugees, and these differences are apparent both in the Person and Women Data. Natives are more educated on average than refugees. For instance, 16.2% of refugee men (23.8% of refugee women) in the Person Data do not have a primary school degree, whereas only 3.9% of native men (14.4% of native women) have the same educational status. At the other end of the educational attainment spectrum, the share of individuals who have completed high school or attended university is considerably larger among natives. In particular, 47.3% of native men (compared to 17.9% of refugee men) and 38.4% of native women (compared to 14.8% of refugee women) in the Person Data hold a high school or university degree.

The household composition also differs among natives and refugees in several ways. First, refugees live in more crowded households. In particular, the number of household members in each age category, including those younger than 7, those between 7 and 17, and those between 18 and 59, is larger in refugee houses than native houses. Second, the share of household members who are children of the household head is larger among natives (except for refugees in the sample of married men in the Women Data), whereas the share of household members who are not children of the household head is larger among refugees. This observation is likely to stem from the fact that some refugees in the sample share the same house with distant relatives or other refugees to reduce per-capita housing expenses.

Table 2 presents the characteristics of refugees in our sample. This table helps us understand the migration experience of Syrian refugees residing in Turkey as of 2018. The distribution of years of arrival and that of origins of Syrian refugees observed in the data are consistent with the progress of the Syrian Civil War. As a consequence of the increasing intensity of the war, the number of Syrians migrating to Turkey increased between 2011 and 2016. As the Syrian army took control of Aleppo, the largest city of Syria before the civil war, back from rebels in 2016, a large number of Syrians fled to Turkey. As consistent with this event, the most common year of arrival is 2016 and the most common origin is Aleppo among the refugees in our sample.

As of the survey year, an average Syrian refugee in our sample had spent 3.8 years in Turkey after their migration, and this number is quite similar among men and women.

3.2.2 Employment Outcomes

Table 3 provides the summary of employment statistics. Natives in the data are more likely to be employed based on different employment measures. For instance, we observe that 68.9% of native men were employed in a paid job in the survey year (2018), whereas 61.8% of refugee men were employed in a paid job. The difference in employment between natives and refugees is larger among women, with 22.2% of native women being employed in a paid job compared to only 6% of refugee women in the Person Data. As noted above, the definition of employment and the sample of analyzed individuals differ across the Person and Women Data. To achieve comparability in employment statistics between the data sources, we also tabulate the paid employment rate for 18- to 59- year-old married men and for 18- to 49-year-old women in the Person Data (i.e., the same restrictions that are applied in the analysis of the Women Data). Our tabulations show that 78.6% of married native men, 60.9% of married refugee men, 24.8% of native women, and 6.5% of refugee women in this sample were employed in a paid job.

Our tabulations from the Women Data show that 85.6% of married native men and 67.1% of married refugee men were currently employed at the survey date, whereas 30% of native women and 8.2% of refugee women were. As expected, these employment rates are higher than the paid employment rates for the same groups obtained from the Person Data because they also cover unpaid family workers as well as all of the self-employed and employers. Despite the differences in the definition of employment, the same pattern emerges in the labor market integration of refugees in both data sources. Namely, refugees are less likely to be employed than natives, and this divergence is more evident with the more comprehensive employment definition in the Women Data. The data about the type of employment, discussed below, provide clues as to why the native-refugee gap in employment is wider than the gap in paid employment.

The Women Data also allows us to construct a broader definition of employment by providing information on the employment status in the 12 months preceding the survey. Using this information, we generate the fraction of individuals who were either employed at the survey time or had been employed in the last 12 months before the survey date. The native-refugee gap for

men (92.7% versus 85.7%) narrows with this definition; however, the gap for women does not change noticeably (34.6% versus 10.6%). Combined with the information in the previous paragraph, this suggests that the fraction who were employed in the last 12 months but are not currently is higher among refugee men than native men—suggesting higher employment volatility among refugee men.

As shown in Table 3, we observe that the likelihood of job search is higher for refugees among married men but lower among refugee women than native women. Our tabulations based on the Women Data also show that refugees are more likely to be out of the labor force, and this discrepancy between refugees and natives is noticeable especially for women. The lower rates of both employment and unemployment among refugee women compared to native women generate this large gap in their participation.

Table 3 also displays significant differences in job characteristics between natives and refugees. For instance, the percentage of wage workers among all currently employed individuals is much higher among refugees despite their lower employment rates. In particular, 88.3% of refugee workers are employed as wage workers among married men, whereas this ratio is 73.1% among natives. Put differently, the native-refugee gap in wage employment of married men is small; it is only 3 percentage points. However, the gap in self-employment is almost 10 percentage points and the gap in working as an employer is 5.4 percentage points. This pattern is similar among women, although the native-refugee gap is wide in women's wage employment. While 4.1% of native women are unpaid family workers, only 0.1% of refugee women are.

The industry distribution of current jobs also differs between natives and refugees. The fraction of male workers employed in manufacturing is higher among refugees, and the fraction employed in services is lower. Among female workers, the fraction employed in agriculture is significantly higher and the fraction in services is again lower. The fact that the fraction of refugee workers employed in services is lower among both men and women suggests a role for language barriers against refugees in this sector.

In terms of working hours, our tabulations show that refugees in the data are slightly more likely to be part-time workers. Moreover, the behavior of part-time employment is more common among women, and the discrepancy in part-time employment between natives and refugees is even

more evident (29.1% versus 21.0% among workers). The most striking difference in employment of natives and refugees is regarding their social security coverage. In fact, 97.9% of married refugee workers are employed in the informal sector compared to 19.1% of married native workers among men. Similarly, while 98.0% of refugee women are in the informal sector, 38.3% of native women are.

The patterns of the native-refugee gap in terms of the characteristics of the last job in the 12 months preceding the survey date are quite similar to those observed for their current employment. In particular, refugee workers are more likely to be wage workers and to work in manufacturing, informally, and in the private sector in their last jobs compared to natives (see Appendix Table 1 for these statistics).

3.3 Empirical Strategy

Our tabulations discussed in the previous section highlight noticeable differences in demographic characteristics and employment statistics between natives and refugees. To understand whether the differences in employment statistics are explained by the different demographic patterns of natives and refugees, we estimate a linear probability model. In our analysis, we estimate determinants of various labor market outcomes by treating the dummy variable indicating the refugee status (i.e., the Syrian dummy) as the key independent variable of interest. We analyze each outcome separately for men and women. We use household weights provided by TDHS and cluster standard errors at the household level.

We employ the following set of variables as control variables in our estimates: dummies for age categories (18-21, 22-25, 26-30, 31-35, 36-40, 41-45, 46-50, and 51-59), dummies for educational attainment (no education, incomplete primary school, complete primary school, incomplete secondary schooling, complete secondary schooling, incomplete high school, complete high school, and higher than high school), the interactions between dummies for the NUTS-1 region and dummies for the type of current residence (urban, rural, and refugee camp), dummies

for the relation to household head, and the logarithm of the number of household members in each age category (younger than 7, between 7 and 17, between 18 and 59, and older than 59).[17]

To understand the heterogeneity in the labor market integration of Syrian refugees, we also estimate the same linear probability model by including the interaction of the Syrian dummy with each characteristic of interest. In particular, we explore the heterogeneity by age, educational attainment, language, years since the arrival in Turkey, and region of residency in Turkey.

4. Results

Table 4 presents the estimates for refugee dummies in our six specifications. In the baseline specification, we include only the refugee dummy as an explanatory variable, whereas we add a particular set of control variables to the baseline in the other four specifications and include all the control variables in the last one. The baseline native-refugee gap in men's paid employment is 7.1 percentage points. All sets of controls but household characteristics in column (5) reduce this gap. Controlling for age and education reduces the gap, as refugees are on average younger and less educated. Accounting for the region of residence matters even more; the gap reduces to 4.4 percentage points because refugees are more likely to live in southern and southeastern provinces where employment rates are low. Column (6) shows that when we account for all sets of controls, the baseline gap of 7.1 percentage points in men's paid employment reduces to 4.7 percentage points.

Similarly, with the Women Data, the native-refugee gaps among married men diminish as we account for differences in demographic characteristics and education. The gap in current employment drops from 18.5 to 14.4 percentage points in column (6), which includes all the sets of controls. The remaining gap in current employment at 14.4 pp is higher than the remaining gap in paid employment at 4.7 pp. This difference might result from the change in the analyzed sample or from the change in the definition of employment or both. To separate the role of each reason, in Table 4, we present the gap in paid employment for the sample of 18- to 59-year-old married men (i.e., the sample analyzed in the Women Data). The estimates show that the gap in paid employment is 17.5 percentage points for the sample of married men in the Person Data after

[17] We calculate these logarithmic variables by adding one to the number of household members in each category to deal with potential cases of log zero.

accounting for differences in other control variables. This estimate is closer to the estimated gap in current employment of the same group of individuals in the Women Data. This finding suggests that the magnitude of the native-refugee gap in employment differs across datasets for men mainly because of the difference in the analyzed sample.

Table 4 also shows that the gap in employment within the last 12 months reduces from 6.9 to 6.2 percentage points among married refugee and native men. The smaller native-refugee gap in employment within the last 12 months than the gap in current employment suggests that refugees are more likely to make a transition from employment to non-employment. In addition, the gap between natives and refugees in unemployment is almost null once we account for the covariates.

The estimates for women, given in panel (B), are more striking. The baseline native-refugee gap of 16.1 percentage points in paid employment reduces to only 4.0 percentage points once we account for all sets of covariates. Here, educational differences matter much; only accounting for education in column (3) reduces the gap from 16.1 to 10.8 percentage points. Similarly, the analysis of employment outcomes in the Women Data shows significant narrowing of native-refugee gaps among women once we account for the covariates. The gap in current employment diminishes from 21.8 to 5.8 percentage points, the gap in employment within the last 12 months from 24.0 to 7.6 percentage points. The remaining gaps for current employment (5.8 pp) and employment within the last 12 months (7.6 pp)—both of which include all types of employment—are somewhat larger than the remaining gap in paid employment (4.0 pp for the sample of 18- to 59-year-olds and 4.1 pp for the sample of 18- to 49-year-olds). In terms of women's unemployment, the native-refugee gap reduces from 5.8 to 3.3 percentage points. In a parallel manner, the native-refugee gap in women's labor force participation decreases from 28.5 to 10.4 percentage points.

Table 5 shows how accounting for all the sets of covariates (as in column (6) in Table 4) changes the gaps in employment outcomes by type and sector of employment, formal and informal status, and full-time and part-time status. The results for men's type of employment show that the gap in current employment remains for all types of employment. However, each remaining gap as a percentage of the baseline level of the corresponding type of employment shows significant variation. For instance, wage employment of refugee men is only 7.5% behind that of natives, whereas self-employment, employer status, and unpaid family work are much less likely among

refugees than natives—even after accounting for the differences in covariates. In particular, self-employment is 43% less likely among refugee men, and being an employer is 39% less likely. This is presumably not a surprise as refugees are less likely to possess the financial resources needed to establish this type of work. In addition, when we examine employment within the last 12 months, we find that refugee men are more likely to be wage workers than natives—accounting for the differences in covariates.

For women, the gaps in all types of employment reduce significantly, in line with the findings in Table 4. No evidence of a gap in employer status remains; however, this fraction is low among women to begin with. The remaining gap as a percentage of the baseline levels for native women is higher for self-employment and unpaid family work. As for refugee men, entering the labor market as a wage worker has been easier than entering as self-employed or unpaid family workers for refugee women.

In terms of the men's employment sector, the native-refugee gap persists in all sectors after we account for the covariates. Although the baseline native-refugee gap in manufacturing favors refugees, it turns in favor of natives once we account for the covariates. While the remaining gap is higher in services than in other sectors in terms of percentage points, it is higher in agriculture as a percentage of the baseline level for natives. When we examine employment within the last 12 months, the native-refugee gap vanishes in manufacturing but remains in the other two sectors. In essence, vis-à-vis natives, refugee men have a higher propensity to work in manufacturing.

Among women, the baseline gaps in both agriculture and manufacturing vanish once we account for native-refugee differences in characteristics. However, the gap in services persists. Quantitatively, the remaining gap as a percentage of natives' baseline levels is the lowest in agriculture for both current employment and employment within the last 12 months. In other words, refugee women have the highest propensity to work in agriculture.

In terms of full-time vs. part-time employment status, evidence of a native-refugee gap exists only for full-time employment among men but for both full-time and part-time employment among women, after we account for native-refugee differences in covariates. The remaining gap as a percentage of the baseline levels for natives is higher for full-time employment among men but higher for part-time employment among women. Although part-time work has become more

prevalent among Turkish women over the years, it seems that refugee women cannot particularly benefit from this type of employment.

Finally, we examine how refugees compare to natives in terms of formal vs. informal employment. Table 5 shows that the native-refugee gap in men's formal employment reduces from 67.9 to 57.9 percentage points. The remaining gap is substantial; refugee men's formal employment probability is 84% lower than native men's—even after holding the covariates constant. The native-refugee gap in women's formal employment drops from 18.4 to 6.5 percentage points once we account for the covariates. Compared to native women's baseline level, refugee women's formal employment probability is 35% lower.

4.1 Heterogeneity Analysis

In this subsection, we examine how native-refugee differences in employment outcomes vary by age, education, refugees' duration of residence in Turkey, mother tongue, and region of residence in Figures 1–5, after controlling for the differences in the full set of covariates (as in column (6) of Table 4). In each figure, heterogeneity is given for five outcomes: paid employment, current employment, employment within the last 12 months, unemployment, and labor force participation. These outcomes in each row are given for men in the left column and for women in the right column.

Figure 1 shows the heterogeneity by age. For the three employment outcomes, we observe a significant negative relationship with age for both men and women. Younger refugees (aged 18–25 among men and 18–21 among women) are more likely to be in paid employment than natives of the corresponding ages. However, after age 25, it is just the opposite; refugees are less likely to be employed. The relationship between age and the native-refugee gap in employment is monotonic for men, whereas it narrows after age 45 among women—due to the early exit of native Turkish women from the labor market, widely reported in the literature (e.g., Tunalı et al., 2021).

Figure 1 also shows that young refugee men and women are less likely to be unemployed than natives. Among men, only for the oldest age groups (above 45), we observe that refugees are more likely to be unemployed. Among women, refugees are not more likely to be unemployed for any age group. Although unemployment rates of refugees are not higher, they are more likely to

be out of the labor force. We observe this for all refugee men above age 35 and all refugee women except the very young (18- to 21-year-olds).

Figure 2 presents the heterogeneity by education. We observe a negative correlation between the native-refugee gap in paid employment and education level both for men and women. However, this correlation is much stronger for women. Moreover, while this negative correlation exists for all three employment outcomes among women, it is only more prominent for paid employment among men. In addition, while the native-refugee gap is lower among the least educated (those with less than a primary school degree) than all other education groups among men, the negative relationship is more monotonous among women. The native-refugee gap among women with the highest education level (high school or higher) is higher than that among women with lower education. In understanding the widening native-refugee gap in women's employment by education, we need to remember that Turkish women's employment is highly correlated with education. Turkish women with high school and particularly with college degrees have much higher employment rates than women with lower education (see Appendix Table 2).

The patterns are similar for unemployment and labor force participation in Figure 2. No apparent relationship exists between education and the native-refugee gap in unemployment among men, whereas the native-refugee gap increases in education among women. Actually, refugees are less likely to be unemployed than natives among the less-educated women, whereas no difference remains among the more-educated women. In terms of labor force participation, the native-refugee gap among the least educated men is not statistically different from zero, whereas refugee men are more likely to be out of the labor force than native men among all other education groups. This pattern among men is similar to that for employment. Similarly, among women, the native-refugee gap in labor force participation exists for all groups but the least educated. However, unlike for men, the native-refugee gap (where refugee women are more likely to be out of the labor force) is the most acute among the most educated.

Figure 3 displays how refugees' labor market integration evolves over their duration of residence in Turkey. The key feature of the finding for men is the difference between the first year of residence and the later years. While the native-refugee gap in employment is wide during the first year of refugee men's residence, it substantially narrows afterward. In fact, the statistical evidence for the gap in paid employment vanishes after the first year. On the other hand, the native-

refugee gap among women does not change over time much; i.e., no evidence of improvement of the integration of refugee women into the labor market over time exists. In terms of unemployment, the patterns of the native-refugee gap for men are similar to those of the native-refugee gap in employment. Refugee men are more likely to be unemployed within their first year of residence but not afterward. For women, no obvious pattern exists in the relationship between the native-refugee gap in unemployment and duration of residence. Furthermore, there is no evidence of a relationship between the native-refugee gap in labor force participation and duration of residence either for men or women.

Next, we examine the relationship between refugees' labor market integration and native language (i.e., mother tongue). As can be seen in Figure 4, for all three measures of employment, refugee men whose native language is Arabic or Kurdish lag behind native men, whereas refugee men whose native language is Turkish do not. We observe no statistical evidence of differences in native-refugee gaps in unemployment by language. However, the differences in the native-refugee gaps in employment by language result from the differences in the gaps in labor force participation. Arabic- and Kurdish-speaking refugee men are less likely to participate in the labor market compared to natives, whereas Turkish-speaking refugee men are as likely to participate as native men. For women, the evidence for Turkish-speaking refugee women is mixed in terms of employment. While Arabic-speaking refugee women lag behind native women in terms of employment, Kurdish-speaking women do not. All groups of refugee women, regardless of their mother tongue, are more likely to be out of the labor force.

Lastly, we analyze the relationship between the region of residence and the native-refugee gap in labor market outcomes. As displayed in Figure 5, the gap in paid employment among men is different in Istanbul than the gap observed in other regions. Probably because of job opportunities in the manufacturing sector, the gap is in favor of refugee men in the Istanbul region. However, the employment of refugee men falls behind in all other regions, and the estimated advantage of refugees for paid employment in Istanbul also vanishes for broader definitions of employment. Among women, the native-refugee gap does not exist in the Mediterranean and the Southern Anatolia regions for the three employment outcomes, and the gaps in labor force participation in these two regions are also smaller than those in other regions. Apparently, the large agricultural sectors in these regions help with the labor market integration of refugee women. In

terms of unemployment, we observe no particular pattern in the relationship between the region of residence and refugee integration.

5. Conclusion

This paper examines the labor market integration of Syrian refugees in Turkey, using a nationally representative dataset for them for the first time. We find that refugee men's employment rate is close to that of native men; the baseline native-refugee gap of 7.1 pp reduces to 4.7 pp once we account for the native-refugee differences in demographic and educational characteristics. Although the baseline gap among women is wider at 16.1 pp, it drops to 4.0 pp accounting for the covariates. No gap remains between the unemployment rates of native and refugee men, but it does remain among women once we control for the native-refugee differences in covariates. In terms of the type of employment, the native-refugee gap is the smallest in wage employment but larger in self-employment and unpaid family work. Regarding the sector of employment, the gap is the smallest in manufacturing for men and in agriculture for women. Although the native-refugee gap is small in terms of employment, it is large in terms of job quality. Refugees are much more likely to work in the informal sector. Even after accounting for the covariates, refugee men are 58 pp less likely to be formally employed.

Employment of men improves significantly within their first year of residence but remains relatively constant afterward. Essentially, little or no gap remains in men's paid employment after the refugees' first year in Turkey. On the other hand, no improvement in women's employment takes place. Refugee women doing worse in the labor market is similar to the findings in the literature in other contexts. In our context, refugees' age matter substantially. While refugee employment is higher than native employment among the youth, it is lower among the prime-age working people. Another interesting finding is concerning education. The gap with natives is wider for more educated natives, particularly among women. Native language also matters much in men's employment but not women's. After accounting for the covariates, no native-refugee gap remains for Turkish-speaking refugees, but it persists for Kurdish- and Arabic-speaking refugees. Finally, the regional structure in sectors of employment matters in refugee's employment. The gap in men's employment vanishes in Istanbul, which provides many job opportunities in manufacturing, and the gap in women's employment vanishes in the Mediterranean and the Southeast Anatolia regions, which provide many jobs in agriculture.

Our findings are different from those for developed country contexts in the way that the native-refugee gap is smaller and the convergence for men takes place quite early. The availability of the large informal sector in Turkey—where it is easier for refugees to find jobs—plays an essential role in this difference. In fact, our findings are similar to the context of Venezuelan refugees in Latin American countries—where the informal sector is also significant. In that context, refugees are different in the way that they are relatively more skilled and can speak the language of the host country. In line with this, refugees in those countries have even higher employment rates. On the other hand, our findings are different from those in the context of Syrian refugees in Jordan. Syrian refugees' employment rates in Jordan are lower both in absolute terms and relative to the natives. The relative lack of jobs in manufacturing and in the private sector in general is likely to be the reason because a much larger of the native population works for the public sector there. In addition, the overall employment rate is lower in Jordan, presumably due to the country's high reliance on remittances. (In 2020, personal remittances were 8.9% of Jordan's GDP, down from 17.3% in 2014 and 22.4% in 2001 (WDI, 2021)). Another important distinction in the Syrian-refugee contexts between Jordan and Turkey, which might explain refugees' better labor market integration in Turkey, is that a lower percentage of Syrian refugees in Turkey live in camps (e.g., 4.3% of refugees in Turkey live in camps four years after their arrival, whereas 16% of refugees do so after spending four years in Jordan (Krafft et al., 2018)).

We need to also consider the impact of refugees on natives' labor market outcomes when considering their labor market integration. Although the availability of a large informal sector helped refugees find jobs, the findings of previous literature indicate that this came at the expense of natives' employment in the informal sector (Ceritoğlu et al., 2017; del Carpio and Wagner, 2016; Aksu et al., 2018). Moreover, Aracı et al. (2021) find that this impact has been stronger in the less-developed regions of the country. On the other hand, the arrival of refugees pushed natives into the formal sector (del Carpio and Wagner, 2016; Aksu et al., 2018). Aksu et al. (2018) also report a transition of native workers from wage employment to self-employment and unpaid family work, which is consistent with our finding of a small native-refugee gap in wage employment but a large one in self-employment and unpaid family work. Finally, Aksu et al. (2018) find that the arrival of refugees increases native men's full-time employment at the expense of part-time employment, which is also consistent with our finding of a higher native-refugee gap in men's full-time employment.

Although refugees do relatively well in terms of employment, they work in the informal sector—where wages are on average lower and job loss is more likely. In fact, when we compare employment within the last 12 months and current employment, we find a much larger gap for refugees in current employment—suggesting a higher frequency of a quit or a layoff among refugees. In many refugee settings, barriers exist against their formal employment. In the Turkish case, the most critical impediment is that refugees lose eligibility to the ESSN program when they are formally employed. As suggested by Clemens et al. (2018), formalization would raise refugees' productivity and earnings (particularly for the more skilled refugees) and hence also benefit the state coffers. Moreover, it would reduce the chances of exploitation and vulnerability. In addition, it would distribute refugees' labor market impact on natives across different subgroups; currently, native informal workers are exposed to the refugee impact, but native formal workers are shielded from it. However, the Turkish economy has also benefitted from the availability of cheap refugee labor, particularly in certain sectors. Akgündüz et al. (2020) find that the arrival of refugees increased firms' sales and fostered the establishment of new firms—although the new firms tend to be small, which are on average less productive in Turkey. They also report a decline in export prices, resulting from the competitiveness accruing from lower production costs achieved with Syrian refugees. These benefits would be smaller if Syrian refugees worked in the formal sector. At the same time, it is important to acknowledge that advantages accruing from refugees in production are not limited to lower production costs. Akgündüz et al. (2020) also identify a migrant network effect, controlling for the cost advantages accruing from the refugees, which increases exports and product variety in exports to the MENA region.

Our study also uncovers the refugee groups with the most difficulty integrating into the Turkish labor market. First, it is harder for educated and older individuals to find jobs because the jobs available for refugees in the informal labor market generally require physical power. Moreover, it is harder for educated and older refugees to transfer their home-country labor market skills and experience. In particular, the lack of language skills and the difficulty of validating Syrian educational credentials affect them more. In addition, the obstacles to refugees' formal employment (particularly the eligibility conditions to the ESSN program and the mobility restrictions that discourage formal employment) are more detrimental for educated refugees, as they would be less willing to take jobs in the informal sector. Second, women refugees experience more difficulties in integrating into the labor market. Given that women are more likely to spend

their time and socialize at home than men among the socially conservative Syrian refugees, their chances of improving their language skills are lower. Third, refugees that lack Turkish-language skills lag behind. Hence, language education courses and other interventions targeting refugees' needs (such as integration courses, vocational training, and job-search assistance) could be particularly beneficial, as shown in other migrant settings (see, e.g., Arendt et al. (2021), Battisti et al. (2019), Lochmann et al. (2019), and Sarvimäki and Hämäläinen (2016)). Moreover, these policies could be more beneficial for the more educated (as Lochmann et al. (2019) report) and female refugees—the groups which have a more difficult time integrating. Improved validation mechanisms of home-country credentials of refugees would also particularly benefit more-educated refugees. Providing refugees access to active labor market policies provided to natives, such as job training, could be helpful because refugees' human capital accumulation is faster than other migrants and natives, as shown in several studies for developed countries.

In sum, our study shows that the integration of Syrian refugees into the labor market in terms of employment is better in Turkey than in most other contexts; however, refugees tend to hold lower-quality jobs and some sub-groups of refugees have more difficulty in integration. As the Turkish economy takes a downturn, the integration of refugees becomes even more important, but enhancing it becomes more challenging at the same time. Erdoğan, Kirişçi, and Uysal (2021) report that the Turkish GDP per capita has declined from $11,200 in 2011 to $8600 in 2020 ($8200 if Syrians were included). The ESSN cash transfers of refugees have not increased as much as the inflation. Moreover, the conditions that the pandemic generated have hit the informal workers harder, for whom distant work is more difficult. In fact, the HLFS shows that 69.4% of the workers in 2020 were formally employed, although this share was about 65–66% from 2014 to 2019—indicating higher job loss due to the pandemic for informal workers. Hence, sustaining high-level employment among refugees and improving the integration of the disadvantaged refugee groups, by providing integration and employment training and lifting barriers for their formal employment, become more vital in these challenging conditions. The issue of integration becomes even more critical as the refugees become more likely to settle in permanently as their duration of residence in Turkey increases (as found by Balcılar and Nugent, 2019).

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Table 1: Demographic Characteristics of Working Age Adults

	Panel A: Person Data				Panel B: Women Data			
	Men		Women		Married Men		Women	
	Natives	Refugees	Natives	Refugees	Natives	Refugees	Natives	Refugees
Number of Observations	10972	2580	11202	2444	5056	1710	6731	1995
Mean Age	37.1	31.4	37.5	31.8	39.5	34.3	33.5	29.3
Age Distribution								
18-21	0.114	0.182	0.111	0.200	0.004	0.040	0.114	0.222
22-25	0.112	0.184	0.104	0.164	0.040	0.142	0.124	0.181
26-30	0.127	0.184	0.121	0.182	0.119	0.218	0.154	0.204
31-35	0.119	0.141	0.121	0.136	0.173	0.205	0.171	0.152
36-40	0.128	0.115	0.128	0.101	0.207	0.159	0.176	0.114
41-45	0.116	0.069	0.115	0.074	0.194	0.102	0.153	0.085
46-50	0.110	0.057	0.110	0.056	0.164	0.077	0.110	0.042
51-59	0.174	0.067	0.190	0.088	0.098	0.058	0.000	0.000
Educational Attainment								
No education	0.021	0.109	0.113	0.181	0.017	0.109	0.081	0.132
Incomplete primary	0.018	0.053	0.031	0.057	0.023	0.063	0.026	0.057
Complete primary	0.250	0.302	0.320	0.321	0.315	0.325	0.304	0.337
Incomplete secondary	0.042	0.144	0.023	0.122	0.051	0.143	0.028	0.138
Complete secondary	0.119	0.174	0.092	0.132	0.122	0.165	0.111	0.145
Incomplete high school	0.073	0.026	0.036	0.035	0.060	0.018	0.049	0.040
Complete high school	0.209	0.087	0.156	0.080	0.211	0.082	0.166	0.081
Higher than high school	0.264	0.092	0.228	0.069	0.198	0.091	0.236	0.069
Relation to Household Head								
Head	0.620	0.568	0.082	0.059	0.861	0.754	0.073	0.046
Spouse	0.021	0.004	0.623	0.614	0.032	0.005	0.652	0.646
Children	0.307	0.260	0.193	0.107	0.068	0.140	0.181	0.105
Other	0.052	0.168	0.102	0.220	0.011	0.063	0.093	0.203
Number of Household Members								
Younger than 7	0.465	1.407	0.494	1.692	0.757	1.804	0.622	1.734
Between 7 and 17	0.790	1.592	0.815	1.801	1.076	1.789	1.004	1.849
Between 18 and 59	2.897	3.590	2.816	3.406	2.634	3.196	2.761	3.287
Older than 59	0.255	0.192	0.279	0.244	0.173	0.174	0.220	0.217

Notes: Statistics are calculated based on the native and refugee samples of the 2018 wave of Turkey Demographic and Health Survey. The sample in the panel of "Person Data" is restricted to 18- to 59-age-year-old adults, the sample in the panel of "Women Data" is restricted to 18- to 49-age-year-old women and their 18- to 59-age-year-old husbands. Tabulations are calculated by using sampling weights at the household level. Eight observations with missing information on paid employment are excluded in Panel A, and 16 observations with missing information on employment, unemployment, or labor force participation are excluded in Panel B.

Table 2: Characteristics of Syrian Refugees in Turkey as of 2018

	Person Data		Women Data	
	Men	Women	Married Men	Women
Number of Observations	2580	2444	1710	1995
Year of Arrival				
Year 2011	0.025	0.038	0.025	0.039
Year 2012	0.063	0.064	0.054	0.069
Year 2013	0.102	0.116	0.092	0.117
Year 2014	0.181	0.174	0.160	0.176
Year 2015	0.226	0.203	0.220	0.209
Year 2016	0.254	0.254	0.266	0.248
Year 2017	0.118	0.117	0.117	0.112
Year 2018	0.028	0.031	0.024	0.027
Years in Turkey (Mean)	3.896	3.832	3.744	3.783
Origin Region				
Aleppo	0.578	0.583	0.598	0.595
Hama	0.077	0.066	0.062	0.060
Homs	0.053	0.052	0.054	0.050
Idlib	0.080	0.085	0.072	0.078
Latakia	0.031	0.031	0.033	0.029
Raqqa	0.040	0.036	0.039	0.039
Damascus	0.057	0.043	0.052	0.047
Other	0.085	0.104	0.085	0.097

Notes: The data come from the refugee sample of the 2018 wave of Turkey Demographic and Health Survey. See notes to Table 1 for sample restrictions. Origin region shows the province of birth in Syria. Tabulations are calculated by using sampling weights at the household level.

Table 3: Employment Statistics of Working Age Adults

	Men				Women			
	Natives		Refugees		Natives		Refugees	
Panel A: Person Data: Employed in a Paid Job								
18- to 59-Year-Old Men and Women	0.689		0.618		0.222		0.060	
Married Men and 18- to 49-Year-Old Women	0.786		0.609		0.248		0.065	
Single Men	0.503		0.641		x		x	
Panel B: Women Data (Married Men and 18- to 49-Year-Old Women)								
Currently Employed	0.856		0.671		0.300		0.082	
Employed in Last 12 Months	0.927		0.857		0.346		0.106	
Searching for a Job	0.029		0.053		0.108		0.050	
Not in Labor Force	0.044		0.090		0.564		0.849	
Type of Current Employment								
Wage worker	0.623	73.1%	0.593	88.3%	0.201	66.9%	0.069	83.4%
Self-employed	0.153	17.9%	0.055	8.2%	0.044	14.6%	0.011	13.4%
Employer	0.071	8.4%	0.017	2.6%	0.010	3.2%	0.001	1.3%
Unpaid family worker	0.005	0.6%	0.001	0.1%	0.041	13.6%	0.001	0.7%
Industry of Current Employment								
Agriculture	0.076	8.9%	0.044	6.5%	0.057	19.0%	0.027	33.3%
Manufacturing	0.179	20.9%	0.198	29.6%	0.018	6.0%	0.007	8.5%
Service	0.601	70.2%	0.429	63.9%	0.225	75.1%	0.048	58.2%
Characteristics of Current Employment								
Full-time	0.817	95.4%	0.626	93.3%	0.237	79.0%	0.058	70.9%
Part-time	0.039	4.6%	0.045	6.7%	0.063	21.0%	0.024	29.1%
Formal	0.690	80.9%	0.014	2.1%	0.185	61.7%	0.002	2.0%
Informal	0.163	19.1%	0.657	97.9%	0.115	38.3%	0.081	98.0%

Notes: The data come from the 2018 wave of Turkey Demographic and Health Survey. The sample in the panel of "Person Data" is restricted to 18- to 59-age-year-old adults, the sample in the panel of "Women Data" is restricted to 18- to 49-age-year-old women and their 18- to 59-age-year-old husbands. Tabulations are calculated by using sampling weights at the household level. The percentages are calculated for observations without missing data on relevant outcome variables. Information on industry is missing for one native man, information on the status of formal employment is missing for 21 native men and for one refugee man, and information on the status of full- time employment is missing for one native man in the data.

Table 4: Differences in Main Labor Market Outcomes between Natives and Refugees

	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	Baseline + Age	Baseline + Educ	Baseline + Region	Baseline + HH Char.	All
Panel A: Results for Men						
Person Data (Employed in a paid job)						
18-to 59-year old men	-0.071***	-0.063***	-0.062***	-0.044***	-0.099***	-0.047***
18-to 59-year-old married men	-0.177***	-0.246***	-0.142***	-0.153***	-0.212***	-0.175***
18-to 59-year-old single men	0.139***	0.210***	0.118***	0.175***	0.175***	0.213***
Women Data (Married Men)						
Currently employed	-0.185***	-0.214***	-0.165***	-0.149***	-0.172***	-0.144***
Employed in last 12 months	-0.069***	-0.098***	-0.058***	-0.056***	-0.072***	-0.062***
Searching for a job	0.023***	0.028***	0.017***	0.012*	0.015**	0.004
Not in labor force	0.046***	0.070***	0.041***	0.044***	0.057***	0.058***
Panel B: Results for Women						
Person Data (Employed in a paid job)						
18-to 59-year old women	-0.161***	-0.167***	-0.108***	-0.144***	-0.099***	-0.040***
18-to 49-year old women	-0.183***	-0.175***	-0.122***	-0.164***	-0.097***	-0.041***
Women Data (18- to 49-year old women)						
Currently employed	-0.218***	-0.197***	-0.176***	-0.165***	-0.143***	-0.058***
Employed in last 12 months	-0.240***	-0.224***	-0.193***	-0.191***	-0.153***	-0.076***
Searching for a job	-0.058***	-0.067***	-0.038***	-0.074***	-0.030***	-0.033***
Not in labor force	0.285***	0.277***	0.224***	0.248***	0.179***	0.104***
Age	No	Yes	No	No	No	Yes
Education	No	No	Yes	No	No	Yes
Region and Type of Residence	No	No	No	Yes	No	Yes
Household Composition and Relation to Household Head	No	No	No	No	Yes	Yes

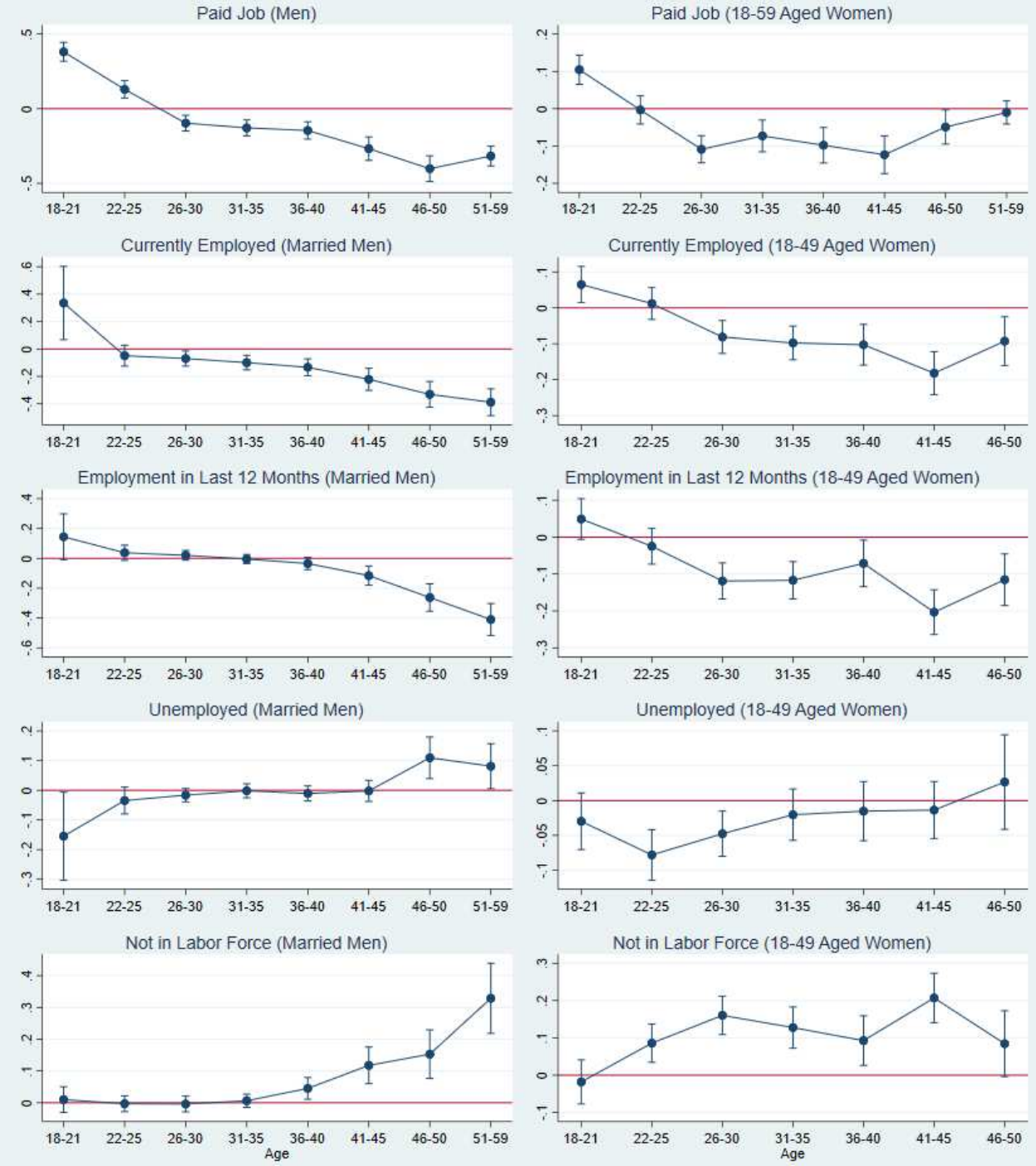
Notes: The data come from the 2018 wave of Turkey Demographic and Health Survey. See notes to Table 1 for sample restrictions. The sample consists of 13,552 men and 13,646 women in Person data and 6,766 married men and 8,726 women in Women Data. Each cell presents the coefficient estimate of the Syrian refugee dummy for the specified labor market outcome. Employment in last 12 months takes the value of one for individuals who were either employed by the survey date or had worked in the 12 months preceding the survey. Each column displays estimates for a different set of control variables as specified at the bottom of the table. Sampling weights at the household level are used in the estimation. Standard errors are clustered at the household level. Statistical significance: * 10 percent level, ** 5 percent level, *** 1 percent level.

Table 5: Differences in Job Characteristics between Natives and Refugees

	18- to 59-Year-Old Married Men						18- to 49-Year-Old Women					
	Current			Last 12 months			Current			Last 12 months		
	(1)	(2)		(1)	(2)		(1)	(2)		(1)	(2)	
Wage Type												
Wage worker	-0.030**	-0.047**	7.5%	0.089***	0.040**	6.0%	-0.132***	-0.025**	12.4%	-0.148***	-0.038***	15.9%
Self-employed	-0.098***	-0.066***	43.2%	-0.098***	-0.067***	39.2%	-0.033***	-0.017***	38.8%	-0.037***	-0.022***	46.1%
Employer	-0.054***	-0.028***	39.2%	-0.055***	-0.029***	39.7%	-0.008***	-0.001	10.5%	-0.009***	-0.000	0.0%
Unpaid family worker	-0.005***	-0.005**	91.8%	-0.007***	-0.006***	79.8%	-0.040***	-0.014***	34.2%	-0.041***	-0.015***	35.2%
Industry												
Agriculture	-0.032***	-0.017**	22.4%	-0.018**	-0.016*	17.7%	-0.030***	-0.007	12.3%	-0.024***	-0.005	8.3%
Manufacturing	0.019	-0.031*	17.3%	0.060***	0.006	3.1%	-0.011***	-0.004	22.4%	-0.014***	-0.006	25.6%
Service	-0.172***	-0.096***	16.0%	-0.112***	-0.052***	8.1%	-0.178***	-0.046***	20.4%	-0.202***	-0.065***	24.8%
Work Hours												
Full-time	-0.191***	-0.140***	17.1%	-0.079***	-0.060***	6.9%	-0.179***	-0.036***	15.2%	-0.197***	-0.050***	18.1%
Part-time	0.006	-0.005	12.7%	0.007	-0.002	3.9%	-0.039***	-0.022***	34.9%	-0.043***	-0.027***	38.2%
Social Security Coverage												
Formal job	-0.679***	-0.579***	83.9%	-0.670***	-0.616***	84.3%	-0.184***	-0.065***	35.1%	-0.212***	-0.087***	40.8%
Informal job	0.493***	0.434***	266.6%	0.598***	0.554***	289.0%	-0.034***	0.008	7.0%	-0.028***	0.010	7.5%

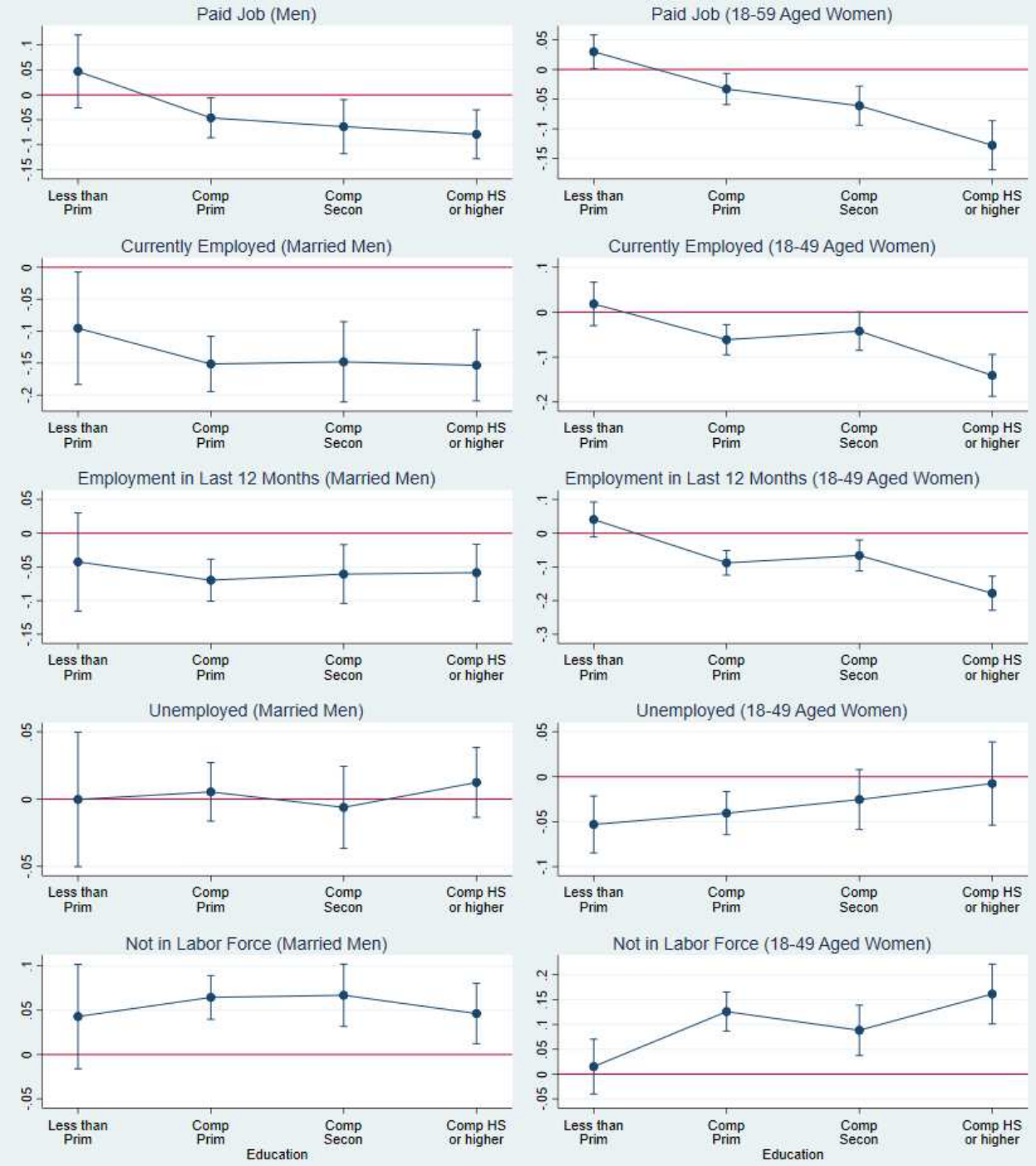
Notes: The data come from the 2018 wave of Turkey Demographic and Health Survey. The table shows the coefficient estimate of the Syrian refugee dummy for the specified labor market outcome and the magnitude of the estimated effect in percentages. The percentage effects are calculated with respect to the fraction of native population of the same gender who held the specified type of employment in the sample. Employment in last 12 months takes the value of one for individuals who were either employed by the survey date or had worked in the 12 months preceding the survey. Regressions employ the full set of control variables as listed in the last column of Table 4. Sampling weights at the household level are used in the estimation. Standard errors are clustered at the household level. Statistical significance: * 10 percent level, ** 5 percent level, *** 1 percent level.

Figure 1: Refugee-Native Differences in Main Labor Market Outcomes by Age



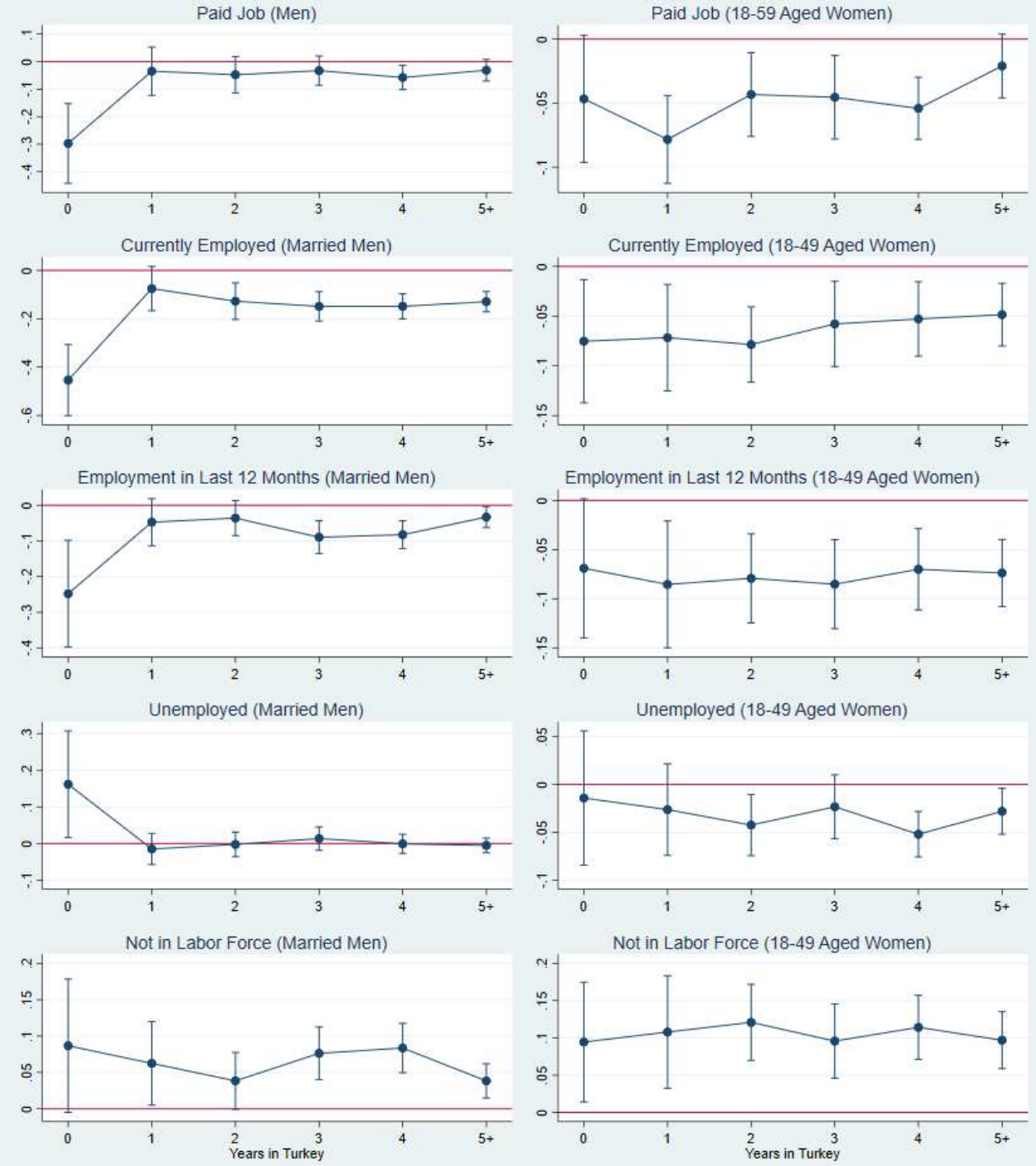
Notes: Each subfigure shows the coefficient estimates for the interaction of the Syrian refugee dummy with age categories from the regression where the dependent variables is the specified type of labor market outcome for the stated gender. Regressions employ the full set of control variables as listed in the last column of Table 4. Sampling weights at the household level are used in the estimation. Standard errors are clustered at the household level. The bars display the 95% confidence intervals for the estimated interaction coefficients.

Figure 2: Refugee-Native Differences in Main Labor Market Outcomes by Education



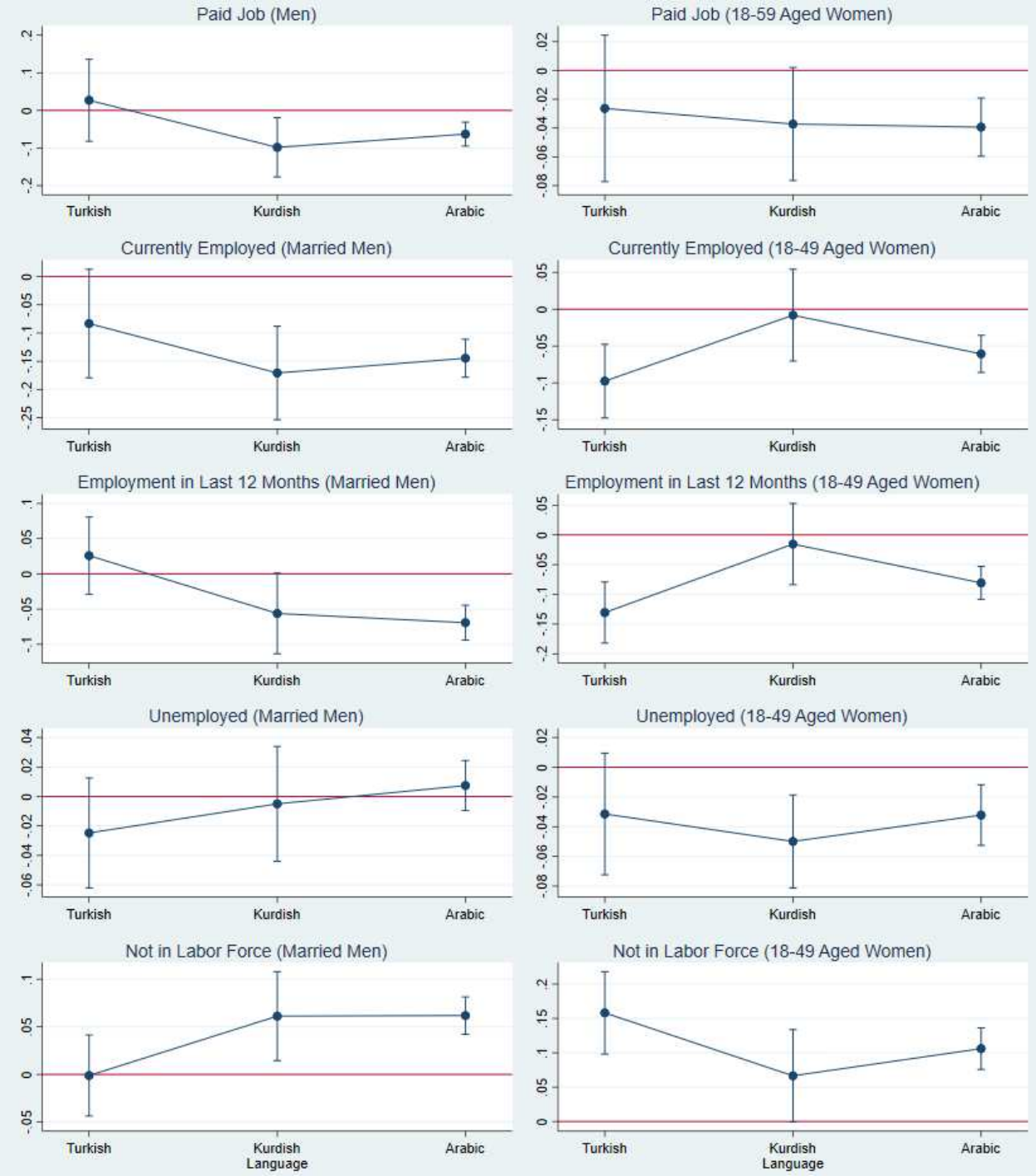
Notes: Each subfigure shows the coefficient estimates for the interaction of the Syrian refugee dummy with education categories (less than primary, completed primary, completed secondary, and completed high school or higher) from the regression where the dependent variable is the specified type of labor market outcome for the stated gender. The bars display the 95% confidence intervals for the estimated interaction coefficients. See notes to Figure 1 for details of regressions.

Figure 3: Refugee-Native Differences in Main Labor Market Outcomes by Years after Arrival



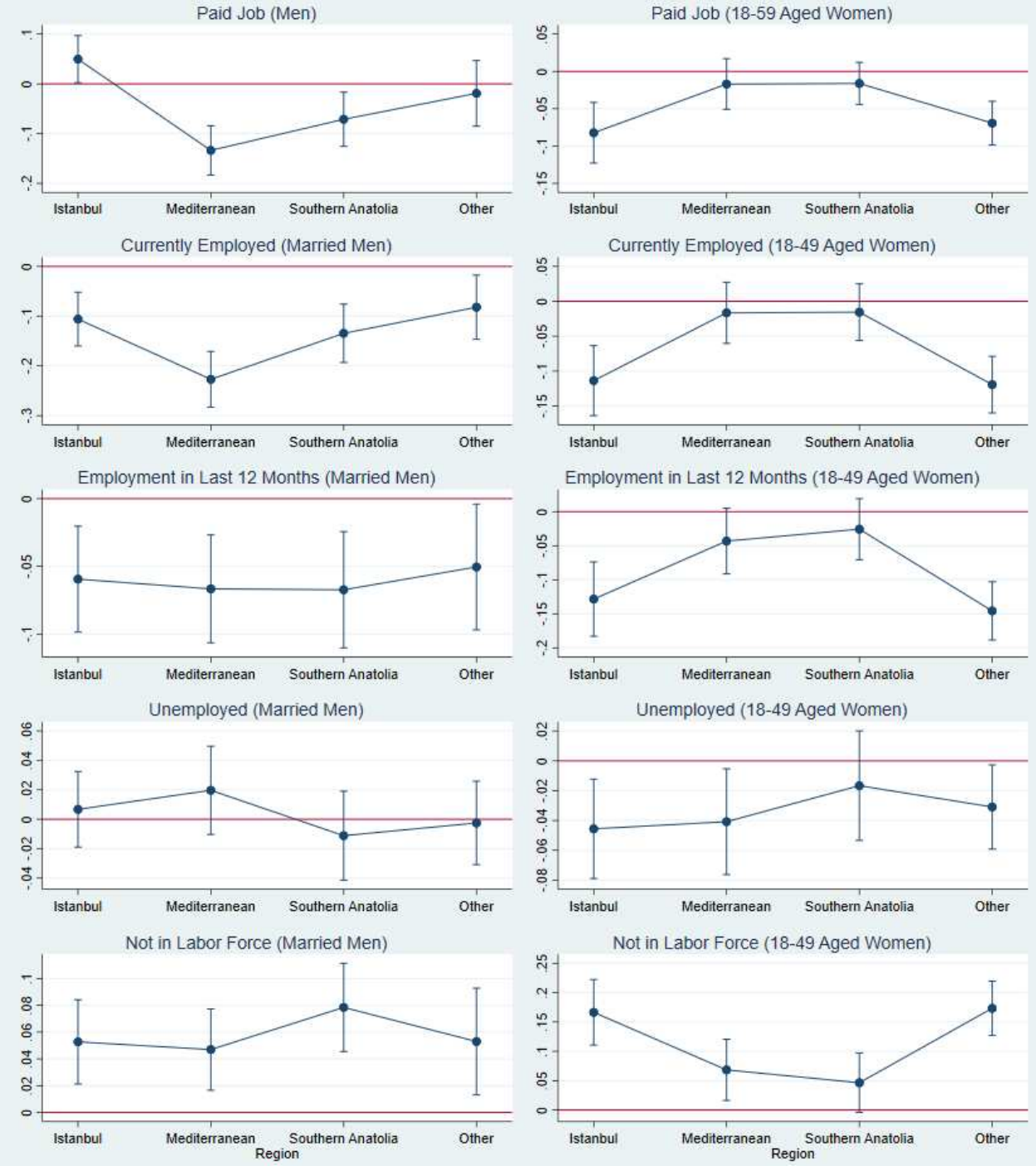
Notes: Each subfigure shows the coefficient estimates for the interaction of the Syrian refugee dummy with years passed after the arrival in Turkey from the regression where the dependent variable is the specified type of labor market outcome for the stated gender. The bars display the 95% confidence intervals for the estimated interaction coefficients. See notes to Figure 1 for details of regressions.

Figure 4: Refugee-Native Differences in Main Labor Market Outcomes by Language



Notes: Each subfigure shows the coefficient estimates for the interaction of the Syrian refugee dummy with language from the regression where the dependent variables is the specified type of labor market outcome for the stated gender. The bars display the 95% confidence intervals for the estimated interaction coefficients. See notes to Figure 1 for details of regressions.

Figure 5: Refugee-Native Differences in Main Labor Market Outcomes by Region of Residence



Notes: Each subfigure shows the coefficient estimates for the interaction of the Syrian refugee dummy with the region of residence in Turkey (the NUST-1 regions of Istanbul, Mediterranean, South Anatolia, and all other regions) where the dependent variables is the specified type of labor market outcome for the stated gender. The bars display the 95% confidence intervals for the estimated interaction coefficients. See notes to Figure 1 for details of regressions.

ONLINE APPENDIX – Not for Print Publication

Appendix Table 1: Characteristics of Last Employment

	Men				Women			
	Natives		Refugees		Natives		Refugees	
Type of Last Employment								
Wage worker	0.048	68.5%	0.167	89.4%	0.038	82.2%	0.022	90.9%
Self-employed	0.018	26.2%	0.018	9.6%	0.004	8.7%	0.000	0.0%
Employer	0.002	2.4%	0.001	0.3%	0.001	1.3%	0.001	2.3%
Unpaid family worker	0.002	3.0%	0.000	0.0%	0.002	3.7%	0.001	4.5%
Industry of Last Employment								
Agriculture	0.014	20.2%	0.028	15.1%	0.004	7.6%	0.009	37.9%
Manufacturing	0.014	20.2%	0.055	29.8%	0.006	12.0%	0.003	11.4%
Service	0.042	59.6%	0.103	55.1%	0.037	80.4%	0.012	50.7%
Characteristics of Last Employment								
Full-time	0.059	83.7%	0.166	89.2%	0.038	83.5%	0.020	85.6%
Part-time	0.011	16.3%	0.020	10.8%	0.008	16.5%	0.003	14.4%
Formal	0.041	58.5%	0.000	0.0%	0.028	60.8%	0.000	0.0%
Informal	0.029	41.5%	0.186	100.0%	0.018	39.2%	0.024	100.0%

Notes: The data come from the 2018 wave of Turkey Demographic and Health Survey. See notes to Table 1 for sample restrictions. Tabulations are calculated by using sampling weights at the household level. Last employment is defined for those who are currently not employed and refers to the job held in the 12 months preceding the survey. The percentages are calculated for observations without missing data on relevant outcome variables. Information on industry is missing for one native man, information on the status of formal employment is missing for 21 native men and for one refugee man, and information on the status of full-time employment is missing for one native man in the data.

Appendix Table 2: Paid Employment by Worker Characteristics

	Men		Women	
	Natives	Refugees	Natives	Refugees
Age Distribution				
18-21	0.282	0.638	0.135	0.033
22-25	0.568	0.708	0.236	0.052
26-30	0.795	0.686	0.293	0.067
31-35	0.858	0.700	0.277	0.099
36-40	0.870	0.682	0.275	0.092
41-45	0.853	0.543	0.283	0.082
46-50	0.799	0.335	0.204	0.050
51-59	0.530	0.169	0.121	0.017
Educational Attainment				
Less than primary	0.500	0.564	0.064	0.061
Complete primary	0.712	0.630	0.160	0.042
Complete secondary	0.712	0.639	0.176	0.043
Complete high school or higher	0.681	0.609	0.350	0.133
Language				
Turkish	0.763	0.656	0.257	0.051
Kurdish	0.656	0.615	0.083	0.061
Arabic	0.691	0.606	0.077	0.060

Notes: The data come from the 2018 wave of Turkey Demographic and Health Survey. See notes to Table 1 for sample restrictions. Tabulations are calculated by using sampling weights at the household level.