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Pulling Effects in Migrant Entrepreneurship: Does Gender Matter?

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Abstract

In this paper, we examine whether the existing stock of migrant firms induces more new firms of the same co-ethnic group in the same sector and province. We do so by analyzing the number of new firms created each year by country of origin, sector, and province, drawing on administrative data of the population of individual entrepreneurs observed over the period 2002-2013. We find support for a strong attractiveness (pulling) effect. We also find that this effect significantly differs by gender: female migrant entrepreneurs show lower reactivity to the existing stock of firms compared to their male counterparts. We finally show that such gender differences are stronger for migrants coming from more gender-unequal countries. On the contrary, the degree of gender inequality in the region of destination does not matter.

Keywords: Migrant entrepreneurship, pulling effect, gender differences, gender inequality, country of origin, region of destination.

JEL: L26; J15; J16.

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1. Introduction

Entrepreneurship is key to growth by generating employment and innovation. The degrees of entrepreneurial activities vary across regions and types of activity. In many industrialized countries, immigrants are among the most active entrepreneurs (OECD, 2010b). In Italy, migrant entrepreneurs keep their increasing pace and are now more than 14% of total entrepreneurs (CENSIS, 2016). Moreover, immigrant entrepreneurs have kept their increasing trend despite the substantial decrease in entrepreneurial activities in the last years due to the Great Recession. Therefore, immigrant entrepreneurship represents a strong and robust component of entrepreneurship in Italy. It is widely recognized that immigrants show a high propensity to entrepreneurship and have exploited opportunities for small businesses creation in many territories (OECD, 2010a). Although these businesses are sometimes low value-added activities, immigrant entrepreneurship is an important channel to promote entry into the labor market and migrants' integration in the territory of the settlement. Moreover, it also contributes to the economic and social vitality of the host regions (Ndofor and Priem, 2011).

Another dimension that is differently shaping the labor force - and, particularly, entrepreneurship - is represented by women as entrepreneurs. Although men are more often entrepreneurs than women, the ratio of women is at a constant rise, also among immigrants (OECD, 2017). Self-employment often represents a way for more flexibility in working hours and arrangements. It is thereby often considered by women as more appealing than less flexible jobs. It also can represent an effective alternative to unemployment. In this view, entrepreneurship can help females enhancing their economic empowerment (OECD, 2014). This is particularly relevant for female migrants, which are often in the weakest segments of the labor force (Fullin and Reyneri, 2010). On the other side, women meet more constraints than men in starting up a business, which might intensify in the case of immigrants - especially those from less developed countries. For instance, women are less financially educated and ask and obtain less credit than men (Basiglio et al., 2019; Oggero et al., 2019).

Understanding the channels and mechanisms favoring new firm creation by foreign-born individuals, and, especially, foreign-born women, in the host region is, therefore, essential for promoting integration, well-being, and local vitality. It is hence crucial to understand the dynamics of migrant entrepreneurship and possible gender differences in this respect (Acs et al., 2011).

Although very little is known about the driving forces of immigrant entrepreneurship, there is evidence that immigrant groups tend to cluster in particular business sectors. Kerr and Mandorff (2015) document this phenomenon in the United States and explain it through a model showing how social relationships in efficient markets can generate long-run occupa-

tional stratification. Tavassoli and Tripl (2019) investigate the impact of ethnic communities (ECs) on immigrants' entrepreneurship in Sweden. They find that immigrants have higher propensity to become entrepreneurs if they are located in ECs that have a high share of same-ethnic/same-sector entrepreneurs. They explain this as the outcome of ECs acting as providers of industry-specific institutional knowledge and by the "role model" effect (Bosma et al., 2012; Chlosta et al., 2012; Krueger JR et al., 2000; Krumboltz et al., 1976; Van Auken et al., 2006a,b).¹

Another relevant concept to study immigrants' entrepreneurship is that of "mixed embeddedness" (Jones et al., 2014; Kloosterman, 2010; Kloosterman et al., 1998, 1999; Price and Chacko, 2009). This refers to the embeddedness of immigrants in social networks of co-ethnic communities and in the socioeconomic and political-institutional environment of the territory of the settlement. Embeddedness spurs entrepreneurship by giving access to social networks providing capital, support, knowledge, and a supply or customer base (Tavassoli and Tripl, 2019). These networks are particularly important for immigrants to overcome the fact that they have less knowledge of local regulations, norms, routines, and culture compared to natives.

This paper builds on the concepts of "role model" and "mixed embeddedness" to study new business formation by nationality of migrant, sector, and province, drawing on administrative data of individual entrepreneurs observed over the period 2002-2013 in Italian NUTS-3 regions. After having investigated whether the existing stock of migrant firms induces more new firms of the same co-ethnic group in the same sector and province, we explore whether this pulling effect differs by gender. By doing so, this is the first paper to link the literature on the determinants of immigrant entrepreneurship with studies on gender differences in the exploitation of social networks (Friebel et al., 2017; Lalanne and Seabright, 2014; Lindenlaub and Prummer, 2014).

This literature builds on the notion of strong and weak links (Granovetter, 1973, 1974). It shows that women are more likely than men to engage in strong links (i.e., in close relationships) rather than in opportunistic ones (Baumeister and Sommer, 1997; Benenson, 1993; Booth, 1972; Moore, 1990), and that weak links favor better work-related outcomes compared to strong links. Based on this evidence, we argue that the determinants of new firm creation by immigrants can differ by gender, with men building more strongly on existing networks.

We find strong and robust evidence that the existing stock of migrant firms induces more

¹A role model is a common reference to individuals who set themselves as examples to be emulated by others, and who may stimulate or inspire other individuals to make certain (career) decisions and achieve certain goals (Bosma et al., 2012; Gibson, 2004).

new firms of the same co-ethnic group in the same sector and province and that this pulling effect is stronger for men than for women. We also find that gender differences are higher for migrants coming from countries with low levels of gender equality. Finally, the characteristics of the country of origin of migrants matter more than those of the region of destination in determining gender differences in the pulling effect.

The rest of the paper is structured as follows. Section 2 discusses the theoretical framework and introduces the research questions. Empirical methodology and data are presented in Section 3 and Section 4, respectively. Section 5 discusses the results. Conclusions and implications are discussed in Section 6.

2. Conceptual framework and research questions

It is widely acknowledged that ethnic communities spur immigrant entrepreneurship (Kloosterman et al., 1999; Light et al., 1993; Rodríguez-Pose and von Berlepsch, 2014; Tavassoli and Tripl, 2019). Although scholars have historically devoted scant attention to disentangling the different channels ruling these dynamics, more recently, Tavassoli and Tripl (2019) have paved the way for a deeper understanding of the role played by ECs in immigrants’ decisions to become entrepreneurs.

A first mechanism lies in the knowledge spillovers from the ethnic community. Immigrants are likely to know less the regulations of the host country, as well as norms, routines, and culture compared to their native peers. This lack of knowledge can be compensated by belonging to an ethnic community, which works as a device providing necessary knowledge on how to get around the host country’s institutional settings (Andersson and Larsson, 2016; Fritsch and Wyrwich, 2014; Guiso and Schivardi, 2011; Minniti, 2005). This argument is grounded in the “mixed embeddedness” approach, which stresses the relevance of immigrants’ embeddedness in the social networks of co-ethnic communities, on the one hand, and in the socioeconomic and political-institutional context of the host region, on the other hand (Jones et al., 2014; Kloosterman, 2010; Kloosterman et al., 1998, 1999; Price and Chacko, 2009). Immigrants can also benefit from knowledge spillovers coming from same-ethnic entrepreneurs employed in the same industry. Social networks of co-ethnic communities indeed exert a critical role in diffusing industry-specific information that relates to, for example, supply-chain or marketing channels and that is useful for the new business (Damm, 2009; Raijman and Tienda, 2000). These arguments about institutional and industry-specific knowledge spillovers within social networks of co-ethnic communities stress the importance of the “learning-by-support” mechanism (Bosma et al., 2012; Chlosta et al., 2012).

A further argument to explain the influence of ethnic communities on immigrant entrepreneurship consists of the “role model” effect (Bosma et al., 2012; Chlosta et al., 2012).

It has been widely acknowledged that role models may strongly affect career choices (Krumboltz et al., 1976), including decisions to become an entrepreneur (Krueger JR et al., 2000; Van Auken et al., 2006a,b). Through “learning-by-example” mechanisms, individuals may learn new skills inspired by the observation of role models with whom they can identify (Gibson, 2004). According to the role identification theory, however, the degree of similarity between the would-be entrepreneur and the role model matters. The extent to which the role model inspire the would-be entrepreneur, indeed, depends upon the perceived compatibility between the role model behavior with the own behavioral opportunities (Slack, 2005). Previous empirical analyses have provided support to this theory and have confirmed that entrepreneurs and their role models tend to be similar in terms of race (Hernandez, 1995; Maccoby and Jacklin, 1974; Ruef et al., 2003), nationality, and sector (Bosma et al., 2012). These dynamics also emerge at the regional level. Previous empirical works have revealed that regional variance in entrepreneurship can be explained by the availability of role models at the local level (Fornahl, 2003; Lafuente et al., 2007; Sternberg, 2009). The presence of entrepreneurs within a region may indeed encourage new entrepreneurial activities as it is easier to find an appropriate example in close geographical proximity. Moreover, the existence of entrepreneurs nearby may legitimize entrepreneurial aspirations and actions (Davidsson and Wiklund, 1997; Mueller, 2006).² In this line of reasoning, we expect that immigrants are influenced by same-ethnic, same-industry, same-province entrepreneurs in the choice to start their own business. Characteristics like sector and ethnicity indeed facilitate role identification of would-be entrepreneurs within a region. Given these arguments, we propose the first research question:

RQ 1: Is the stock of immigrant entrepreneurs positively correlated with new firm formation of the same co-ethnic group in the same sector and province?

Documented empirical findings show that men’s and women’s social networks differ. Women tend to form networks that are more stable, path-dependent, and composed to a higher degree of strong rather than weak links. On the contrary, men are less selective and more opportunistic in their interpersonal behavior, which leads them to develop networks with more new links and consisting of weaker ties. Early work by Granovetter (1973, 1974), distinguishing between strong links (i.e., close relationships) and weak links (i.e., more casual and opportunistic acquaintanceships), argues that weak links are often more useful in

²Wyrwich et al. (2019) analyze the impact of failing role models on the perception of entrepreneurship among non-entrepreneurs at the local level. They show that, while observing successful entrepreneurs reduces the fear of failure, observing business failure increases it.

contexts such as job search, where acquaintances' greater ability to provide novel information outweighs their lower motivation to provide support and help. Women also tend to build more informal networks within their family and friend sphere (Brush, 1992; Ibarra, 1992; Munch et al., 1997; Verheul et al., 2002), whereas, on the contrary, men rely on more formal networks that could be relevant and useful sources of knowledge when starting a new business. These differences could have a significant impact on the entrepreneurial propensity and effectiveness of women's networks.

Men and women also differ in the use of social networks. Previous studies focused on entrepreneurs reveal that women entrepreneurs have fewer networks compared to their male counterparts (Aldrich, 1989; Cromie and Birley, 1992; Hanson and Blake, 2009; Munch et al., 1997). The main argument proposed by these works is that women entrepreneurs were homemakers or anyway held non-managerial positions before starting their entrepreneurial career, and, therefore, their network is less extensive and developed. Furthermore, women entrepreneurs also spend less time networking since they face higher barriers in balancing family and work responsibilities compared to their male counterpart (Verheul et al., 2002). These differences in the use of social networks may thus negatively affect entrepreneurial activities for women.

Moreover, recent evidence supports the view that women and men leverage their networks differently (Beaman et al., 2018; Mengel, 2015) and obtain different work-related benefits because of different network structures (Lalanne and Seabright, 2014; Lindenlaub and Prummer, 2014). Differences in men's and women's social networks may, therefore, be crucial in understanding gender differences in career outcomes and may complement existing explanations of the persistent gender gap in labor market outcomes (see Bertrand, 2011, for a recent survey).

Finally, differences in men's and women's entrepreneurial propensity and behaviors can be explained by the "role model" argument. A relevant dimension of role identification - other than ethnicity and industry, as previously discussed - is gender. In line with the role identification theory, previous empirical analyses have indicated that entrepreneurs tend to be attracted and inspired by role models of the same gender (Bosma et al., 2012). In our perspective, this means that women (men) immigrant entrepreneurs may be a stimulus mainly for other immigrant women (men). Given the relative scarcity of female entrepreneurs, the gender gap in entrepreneurship may thus persist over time. In this vein, for example, Klyver and Grant (2010) show that gender differences in entrepreneurial networking and participation reside in the paucity of role models in women's social networks. Given these arguments, we posit our second research question as follows:

RQ 2: Is the relationship between the stock of immigrant entrepreneurs and new firm for-

mation of the same co-ethnic group in the same sector and province stronger for men than for women?

Previous works have shown that gender differences in entrepreneurship cannot be explained solely based on the level of economic development but that socioeconomic variables measuring human development also matter. Maniyalath and Narendran (2016), in their empirical analysis using Global Entrepreneurship Monitor (GEM) data on 61 countries, reveal that national human and gender development indexes affect female entrepreneurship rates. Gendered institutions may indeed exert a substantial influence on women’s decisions to start their own businesses (Elam and Terjesen, 2010; Pathak et al., 2013; Urbano and Alvarez, 2014). The explanation can reside in two critical dimensions of gender development indexes - empowerment (measured by the proportion of parliamentary seats occupied by females and proportion of adult females with at least secondary education) and economic status (expressed as labor market participation) -, which have proved to be crucial drivers of female entrepreneurship. In this vein, we argue that, in gender-unequal communities, intensity and type of networks differ between men and women. In accordance with previous literature on social networks and “role model” effects, we posit that less equal communities, where, by definition, female labor market participation and educational level are low, are characterized by more informal, weak, and less intense networking activity by females. At the same time, low levels of empowerment and economic status within less equal communities can signal the paucity of role models within the community.

Given this discussion, we formulate the following research question:

RQ 3: Are gender differences in the relationship between the stock of immigrant entrepreneurs and new firm formation of the same co-ethnic group in the same sector and province larger for immigrants coming from more gender-unequal countries?

However, does the degree of gender inequality in the region of destination also matter? The literature on regional determinants of entrepreneurship (see Sternberg, 2009) has shown that entrepreneurial behavior is deeply affected by the spatial context. Moreover studies on cultural assimilation (see Norris and Inglehart, 2012, for a review) suggest that immigrants gradually absorb the values and norms that predominate in their host society. Therefore, gender culture of the destination region can influence female migrants’ propensity to start a new business and the involvement in formal networks and weak links (O’Neil et al., 2016). This discussion leads to our fourth research question, which we spell out as follows:

RQ 4: Are gender differences in the relationship between the stock of immigrant entrepreneurs and new firm formation of the same co-ethnic group in the same sector and province larger for immigrants going in more gender-unequal regions in the destination country?

Finally, we ask whether gender inequality in the country of origin of the migrant entrepreneur matters more or less than gender inequality in the region of destination. However, we have no *a priori* expectations in this respect. On the one hand, theories of cultural integration suggest that immigrants gradually absorb norms and social values of the region of destination. On the contrary, theories of divergence suggest that distinctive norms and values are persistent and deep-rooted within ethnic communities and that immigrants are likely to carry their culture with them when they settle in another country (Norris and Inglehart, 2012). According to this view, the presence of sub-cultures within multicultural regions may deepen the divergence between minority and majority communities (Acemoglu and Robinson, 2006; Anderson, 1983).

3. Empirical model

Our aim is to estimate the role of existing co-ethnic entrepreneurs as a driver of new firm creation by migrants. To do so, we estimate through Ordinary Least Squares (OLS) estimation several specifications of the following baseline linear regression:

$$NewFirms_{t,j,n,p} = \beta Firms_{t-2,j,n,p} + \gamma X_{t-2,j,n,p} + \epsilon_{t,j,n,p} \quad (1)$$

Our dependent variable, $NewFirms_{t,j,n,p}$, reports the number of new individual firms (in logarithms) that are created in year t , in sector of economic activity j , by entrepreneurs with nationality n , and in province p . Our regressor of interest is $Firms_{t,j,n,p}$. It reports the number of existing individual firms (in logarithms) in year $t - 2$, in industry j , in province p , with entrepreneurs originating from country n . Hence, $NewFirms_{t,j,n,p}$ reports the number of *new* individual firms created in year t in a given province, industry, and by entrepreneurs originating from a given country, whereas $Firms_{t,j,n,p}$ reports the *stock* of same-category individual firms two years before (i.e., at $t - 2$). Our interest lies in β . It measures the attractiveness effect that the existing stock of firms exercises on would-be entrepreneurs in the same ECs and same industry and province.

In our regressions, we insert (in progression) a variety of different control variables ($X_{t-2,j,n,p}$). They include an extensive set of dummies controlling for time, industry, province, and country of origin fixed effects. We also add time dummies interacted with industry, province, and country of origin dummies, thereby controlling for different time trends in the various industries, provinces, and ethnic groups. It is important to remove those fixed effects. They can potentially influence both the creation of new firms and the existing stock of firms in a given EC, industry, and province, and, consequently, bias the results. For instance, there might be some provinces more active in the promotion of migrant entrepreneurship

than others. Similarly, there might be some industries undergoing periods of expansions and others experiencing periods of contractions. Also, there might be booms in inflows of migrants from specific countries and in some specific years. All of these situations might affect both the stock of migrant firms and the creation of new migrant firms in the same EC, province, and sector, without any attractiveness-type effect being involved.

We also include among regressors a variable collecting immigration rates by province and country of origin (at $t - 2$). This variable allows controlling for the relative weights of each EC in each province, which can substantially influence both new firm formation and the stock of firms in a given EC and province. Finally, we include controls for the overall stock of entrepreneurs in a given industry and province (at $t - 2$ and in logarithms), both as such and distinguishing between native and migrant (except those considered) entrepreneurs. This control is relevant, as it accounts for specificities in culture/vocation toward entrepreneurship in a particular province and industry and the importance of migrant entrepreneurs in it.

It follows an example to clarify the definition of variables. Let us consider the cell formed by Romanian entrepreneurs in the province of Milan in the construction industry. The dependent variable is the (logarithm of the) number of such migrant entrepreneurs in that industry and province who started their business in the year (i.e., this is a flow). The regressor of interest is the (logarithm of the) number of such migrant entrepreneurs in that industry and province two years before (i.e., this is a stock). A control variable is the immigration rate by province and country of origin. In our example, it says how many Romanian migrants (relative to the total population) were located in the province of Milan in a given year. Another control variable is the (natural logarithm of the) number of entrepreneurs (except those considered) by industry and province. In our example, it says the number of entrepreneurs other than Romanian entrepreneurs who operate in the province of Milan in the construction industry in a given year. Finally, two control variables split this number between native entrepreneurs and migrant (other than Romanian) entrepreneurs.

All the regression results presented in the paper start from Equation 1, which is adapted from time to time to our specific needs, for example, by splitting the sample and running separate regressions for males and females or by adding relevant interaction terms.³

³An alternative to estimating Equation (1) with OLS, could have been estimating a non-linear count data model (i.e., with $NewFirms_{t,j,n,p}$ expressed in integers) with count data estimation techniques, such as negative binomial regressions or Poisson regressions. In this paper, we opted for linear estimations as non-negative binomial regressions nor Poisson regressions could achieve convergence once dummies beyond basic year dummies were added to the model.

4. Data

In our empirical analysis, we resort to the ASIA archive, a data set provided yearly by the Italian statistical institute (ISTAT) since the early 2000s. ASIA collects information on the *whole* population of individual entrepreneurs in Italy in each year.⁴ We use the ASIA data for a period of 13 years, from 2002 to 2013. It collects basic information on entrepreneurs, including their country of origin and gender (gathered through the fiscal codes of individual entrepreneurs) and industry classification and province of activity.

Our analysis is based on the aggregation of such individual-level data at fine aggregation levels: industry, province, and country of origin (and gender, depending on the specifications). We define industries at the 2-digit level of the Ateco classification, resulting in about 50 different categories in our data. The geographical unit of analysis is the NUTS-3 region (Italian provinces). This choice appears appropriate for our analysis since the focus on ethnic communities calls for a rather narrow definition of region, but large enough to statistically represent a region of entrepreneurial activities (Audretsch and Lehmann, 2005). There are about 110 different provinces represented. Countries of origin of migrant entrepreneurs observed are about 170, virtually all the countries in the world. This multidimensional aggregation results in many different cells, which constitute the units of our analysis. In specifications that do not account for the gender dimension, such cells are about 16,000 in each year. This number somewhat less than doubles when we also consider the gender dimension, that is, when we consider separately male and female entrepreneurs in each EC, province, and industry. This indicates that, in some of the cells, there are only male migrant entrepreneurs and no female migrant entrepreneurs.

In sum, our analysis of overall migrant entrepreneurs is based on 210,363 observations. When we also consider the gender dimension, we have 210,363 observations referring to male migrant entrepreneurs and 139,111 referring to female migrant entrepreneurs.

We complement information from ASIA with several other data sources. In particular, we collect information to construct the immigration rates by year, province, and country of origin (used as control) from detailed population statistics provided by the ISTAT. We recover Gender Inequality Indexes (GIIs) and percentages of women in parliament in the countries of origin, which we use in some of our estimations (see Section 5), from the United Nations

⁴In particular, ASIA collects the whole population of what in Italy is formally called “ditta individuale”. “Ditta individuale” could be translated in English as “sole proprietorship”, “sole trader”, “individual entrepreneurship”, or “proprietorship”. These are enterprises that are owned and run by one person and in which there is no legal distinction between the owner and the business entity. This category of entrepreneurs includes all the self-employed people who are registered in the chamber of commerce, thereby excluding independent contractors and freelancers.

Development Programme (UNDP) in 2010. GIIs, in particular, are indexes developed by the UNDP to measure the overall level of gender inequality in each country of the world.⁵ We finally recover Gender Equality Indexes (GEIs) in the regions of destination (see Section 5) from the study by Amici and Stefani (2013) at the Bank of Italy. GEIs provide synthetic indexes on the overall level of gender inequality in each of the 20 Italian administrative regions and are constructed based on the methodology behind the UNDP's GIIs.

Before moving to the econometric analysis, we provide several graphs and tables to explore critical variables descriptively.

In Figure 1, we show how the total number of entrepreneurs (including native entrepreneurs) evolved over our observation period. After a noticeable decrease in the stock of entrepreneurs between 2002 and 2004, from 2004, there has been a constant upward trend up to the global economic crisis in 2008. Since then, the number of entrepreneurs in Italy substantially decreased. By 2013, there were more than 150,000 entrepreneurs less than in 2008.

[Insert Figure 1 around here]

In Figure 2, we depict the evolution over time of female and migrant entrepreneurs. The blue line shows the ratio of female entrepreneurs over the total number of entrepreneurs. Data testify an increasing trend in the share of females among entrepreneurs. If females represented about 25% of individual entrepreneurs in 2002, by 2013, they were about 29%. The red line instead shows the ratio of migrant entrepreneurs over the total number of entrepreneurs. As for female entrepreneurs, there was a markedly upward trend in the importance of migrant entrepreneurs in our observation window. Migrant entrepreneurs have become a relevant share of entrepreneurs in Italy, and that their weight has increased continuously over the years. In 2013, they represented about 8% of the total number of entrepreneurs.

[Insert Figure 2 around here]

In Figure 3, we report other trends which focus on female migrant entrepreneurship. The blue line displays the share of females among migrant entrepreneurs. As for the overall entrepreneurial population, there was a steady upward trend in the representation of female entrepreneurs also among migrants. While in 2002 about 27% of migrant entrepreneurs were females, in 2013, this percentage increased to about 32%, even more than among the overall entrepreneurial population (the share in such case was about 28%, see Figure 2).

⁵See <http://hdr.undp.org/en> for a detailed description on how GIIs are constructed.

The red line instead shows the share of migrants among female entrepreneurs. As for the share of migrants among the overall population of entrepreneurs, it underwent a constant increase, almost doubling in our observation period. While in 2002 less than 5% of female entrepreneurs were migrants, in 2013, this percentage increased to about 9%.

[Insert Figure 3 around here]

Figures from 4 to 7 show some of the variables reported in the graphs just discussed but from a geographical perspective. They show how the total number of entrepreneurs (Figure 4), the share of female entrepreneurs (Figure 5), the share of migrant entrepreneurs (Figure 6), and the share of migrants among female entrepreneurs (Figure 7) were distributed by province in 2013. As these figures show, there is significant variability across provinces.

The North of Italy is featured by the highest stocks of entrepreneurs, particularly in the province of Turin and in many of the provinces of Lombardy and Veneto. However, vast stocks of entrepreneurs are also present in important provinces of the Center and South of Italy, particularly in the area of Rome, Naples, Bari, and Palermo (Figure 4).

[Insert Figure 4 around here]

Provinces in the Central regions of Italy, especially Emilia-Romagna, Tuscany, and Lazio, are those featuring the highest presence of females among entrepreneurs. High representations of female entrepreneurs are also found in several provinces of Sardinia, whereas the South of Italy typically features the lowest proportions of female entrepreneurs, coherently with low levels of female labor activity there (Figure 5).

[Insert Figure 5 around here]

North-Central Italian regions, especially the region of Emilia-Romagna, have the highest concentration of migrant entrepreneurs. High proportions of migrants among entrepreneurs are also found in the provinces of Friuli-Venezia Giulia and the area of Rome. Conversely, migrant entrepreneurs are typically less present in provinces of the South of Italy, consistently with lower immigration rates in such places (Figure 6).

[Insert Figure 6 around here]

Provinces featuring high representations of migrants, typically also display high concentrations of migrants among female entrepreneurs. Thus, provinces in the regions of Emilia-Romagna and Friuli-Venezia Giulia are those featuring the highest proportions of migrants among female entrepreneurs (Figure 7). Migrant entrepreneurs among females are a few in the South of Italy, with values most of the time ranging between 2% and 6%.

[Insert Figure 7 around here]

Finally, Table 1 reports relevant summary statistics. It collects the variables we use in our regressions, both those that do not consider the gender dimension (shown in the first panel) and those that do differentiate by gender (the second panel refers to males, while the third panel refers to females). Leaving aside the gender dimension, on average, in a given cell (i.e., given province, industry, and country of origin), 0.629 new individual firms are established each year. The standard deviation is high (equal to 4.826), suggesting that the number of new migrant individual firms established each year greatly varies depending on the industry, province, and country of origin of the entrepreneur. The average stock of firms in the same EC, industry, and province is much higher, equal to 8.051. Like for new firms, this number has high variability (standard deviation equal to 37.874), pointing to substantial differences among the different cells. Similar pictures emerge when differentiating between males and females but with females showing both a lower stock and a lower number of new immigrant entrepreneurs.

[Insert Table 1 around here]

5. Results

The results of the econometric estimations of our baseline equation are reported in Table 2. We estimate several different specifications of Equation 1, which progressively add controls. Starting from a basic estimation that only controls for time effects (Specification 1), we add controls for industry, province, and country of origin fixed effects (Specification 2). Specifications 3, 4, and 5 progressively add controls for interactions between time effects and industry (Specification 3), province (Specification 4), and country of origin (Specification 5) fixed effects. Specification 6 further controls for the (lagged) immigration rate at the level of province and country of origin. Specification 7 also controls for the (lagged) stock of entrepreneurs in the province and industry. Finally, Specification 8 represents a variation of Specification 7, in which we split the stock of entrepreneurs between Italian and non-Italian entrepreneurs.

Our estimation results show a significant attractiveness effect, which is exceptionally stable to the introduction of the many controls just described. The coefficient ranges from a maximum of 0.365 in Specification 1 to a minimum of 0.353 in Specification 2. Therefore, on average, roughly an additional 35% of new entrepreneurs of a given nationality decide to locate in a given province and sector due to the existing stock of firms of the same country of origin in the same sector and province. Put differently, 35% of new firms of immigrants

are explained by the existing stock of firms set up by the same-nationality immigrants, for each sector and province. This result gives a positive answer to our first research question, that is, the higher the stock of immigrant entrepreneurs, the higher is new firm formation of the same ethnic group in the same sector and province. This evidence, although adopting a different approach, is also in line with the finding of Tavassoli and Tripl (2019), which show that in Sweden an immigrant’s decision to become an entrepreneur is positively affected by being located in a region with a large portion of “same ethnics-same sector’s immigrant entrepreneurs”.

[Insert Table 2 around here]

The attractiveness or pulling effect can be interpreted by relying on the concepts of “mixed embeddedness” (Jones et al., 2014; Kloosterman, 2010; Kloosterman et al., 1998, 1999; Price and Chacko, 2009) and “role models” (Bosma et al., 2012; Chlosta et al., 2012). First, placing a new firm in the same sector and province where there are firms of co-nationals gives access to social networks providing capital, support, knowledge, and a supply or customer base. Therefore, it is easier to start a new firm by using the experience of same co-nationals in a sector of activity and province through a “learning-by-support” mechanism. Second, characteristics like geographic location, sector, and ethnicity facilitate role identification of would-be entrepreneurs through a “learning-by-example” mechanism (“role model” effect), possibly leading to a geographical and sectoral clustering of co-national immigrant entrepreneurs.

However, are these effects homogeneous by gender? We add the gender dimension to our reasoning to detect whether, and to what extent, women and men differ in the pulling effect. In Table 3, we analyze the effect for males and females separately, by also distinguishing the effect stemming from all entrepreneurs (Model 1) and the effect stemming from same-gender and other-gender entrepreneurs (Model 2). Our results reveal that the relationship between the stock of immigrant entrepreneurs and new firm formation of the same co-ethnic group in the same sector and province is stronger for men than for women (Model 1). While the elasticity is 0.302 in the case of men, it decreases to 0.169 in the case of women and the difference (0.133) is sizeable and highly significant. Results also show that the gender of the entrepreneur shapes the attractiveness effect differently: women are less active in following other same-gender entrepreneurs of the same co-ethnic group, in the same province and sector (21.1% for female entrepreneurs against 32.9% for male ones, Model 2). It is also worth observing that the other-gender pulling effect is much smaller than the same-gender effect for both women and men. Finally, women are more attracted by men than men are by women (5.8% *versus* 1.6%).

[Insert Table 3 around here]

Overall, these results support the idea that men and women differ in the way they build, use, and leverage their networks. In particular, it appears that women are less effective than men in exploiting social networks to become entrepreneurs. This result is in line with the literature on networks suggesting that women entrepreneurs have fewer networks compared to their male counterparts (Aldrich, 1989; Cromie and Birley, 1992; Hanson and Blake, 2009; Munch et al., 1997). This literature also suggests that women are more likely than men to engage in networks with strong links (Baumeister and Sommer, 1997; Benenson, 1993; Booth, 1972; Moore, 1990), those that favor less work-related outcomes. Finally, concerning the effect stemming from same-gender and other-gender entrepreneurs, results of Model 2 reveal that “learning-by-example” mechanisms are in place. In this respect, the smaller magnitude of the pulling effect for women might also reveal the paucity of role models in women’s social networks.

Given the heterogeneity of cultures of immigrant entrepreneurs, we also explore whether gender differences in the pulling effect are affected by the degree of gender equality in the country of origin of the immigrant entrepreneur. In particular, we distinguish between nationalities with high (above the median) and low (below the median) levels of the GII. The results reported in Table 4 show that gender differences in the relationship between the stock of immigrant entrepreneurs and new firm formation by entrepreneurs of the same co-ethnic group in the same sector and province are more prominent for immigrants coming from more gender-unequal countries. Results of the first panel in Table 4 reveal that women are less active than men in following other entrepreneurs of the same co-ethnic group, in the same province and sector if the country of origin has high levels of gender inequality (i.e., high GIIs). The effect in such cases is 12.9% for female entrepreneurs and 36.8% for male ones, with a strongly significant gender difference of as much as 23.9%. On the contrary, males and females are equally responsive if their country of origin is more gender-equal (i.e., low GIIs). In this case, the estimated attractiveness effect is 21.2% for female and 21.3% for male entrepreneurs, with no significant difference. Similar results are obtained when, instead of using GIIs, we proxy the level of gender inequality of countries of origin through the percentages of women in parliament (see the second panel of Table 4).

[Insert Table 4 around here]

These results are in line with the literature on the socioeconomic determinants of gender differences in entrepreneurship (Maniyalath and Narendran, 2016) and give a positive answer to our third research question. In gender-unequal countries, where there are sharp differences

between men and women in educational levels and labor market participation, women are characterized by a less intense and effective networking activity, which results in a lower pulling effect (Aldrich, 1989; Cromie and Birley, 1992; Hanson and Blake, 2009; Munch et al., 1997). At the same time, low levels of empowerment and economic status within less equal communities can signal the paucity of role models within the community.⁶

However, does gender inequality in the region of destination also matter? Interestingly, Table 5 shows that the pulling effect is more significant for men than for women irrespective of the level of gender inequality in the region of destination (14.5% higher in regions of destination with high GEI and 12.2% higher in regions of destination with low GEI).

[Insert Table 5 around here]

These results are confirmed when distinguishing for both the level of gender inequality in the country of origin and the regions of destination (Table 6). In particular, we observe that, when immigrants come from countries with low levels of gender differences, the pulling effect is the same between men and women (about 20%), irrespectively of the level of gender inequality in the region of destination. On the other hand, when immigrants come from countries with high levels of gender inequality, the pulling effect is much more prominent for men than for women, again, irrespectively of the degree of gender equality in the region of destination (the gender difference is 25.0% in regions of destination with high GEI and 22.8% in regions of destination with low GEI).

[Insert Table 6 around here]

These last results may be summarized by stating that gender attitudes in countries of origin fully determine the gender gap in the attractiveness effect: “no matters where you go, it matters where you come from”. This evidence indirectly supports theories of divergence suggesting that distinctive social values and norms are enduring and deep-rooted within each nation, shaped by collective histories, common languages, and religious traditions, so that migrant populations are unlikely to abandon their cultural roots when they settle in another country (Norris and Inglehart, 2012).

6. Conclusions

Drawing on the concepts of “mixed embeddedness” and “role models”, we have examined whether the existing stock of migrant firms induces more new firms of the same co-ethnic

⁶We also experimented with robustness tests that consider only the top-75th and the bottom-25th percentiles in terms of GII, that is, countries with very high and very low levels of GII, respectively. Results, available upon requests, are consistent with the findings of Table 4.

group in the same sector and province. Moreover, we have added the gender dimension to our reasoning to detect whether, and to what extent, the attractiveness effect differs between women and men. These are relevant issues since immigrant entrepreneurship is an important channel to foster the entry into the labor market of migrants, essential for promoting their integration and well-being. Focusing on dynamics behind female migrant entrepreneurship is also relevant because entrepreneurship acts as a mean of female empowerment. Female migrants are typically among the weakest segments of the labor market, and, therefore, they can greatly benefit from undertaking an entrepreneurial activity.

The empirical analysis relies on administrative data of individual entrepreneurs observed over the period 2002-2013 in Italian NUTS-3 regions. Descriptive evidence reveals that migrant entrepreneurs have become a relevant share of entrepreneurs in Italy and that their weight has increased continuously over the years. This trend is confirmed for female immigrant entrepreneurs. This evidence suggests the relevance of the phenomenon under scrutiny in this paper.

The results of our econometric estimations reveal strong and robust evidence that the existing stock of migrant firms induces more new firms of the same co-ethnic group in the same sector and province. Similar results, although using a different methodology, were found in the case of Sweden by Tavassoli and Trippl (2019). The extension to the case of Italy suggests that also in this country, which is facing sharp social tensions due to migration flows, migrant entrepreneurship may contribute to the integration of immigrants in the labor market and may be favored by the diffusion of institutional and industry-specific knowledge spillovers within social networks of co-ethnic communities. Therefore, policy makers should acknowledge this critical channel for migrant firm creation and try to stimulate it by taking active steps to increase opportunities for knowledge spillovers among migrants.

While the existence of a pulling effect of migrant entrepreneurs is documented in the literature, this is the first paper showing that such effect differs by gender. In particular, we have shown that attractiveness effects are much weaker for women coming from gender-unequal countries. The paucity of role models and the less intense networking activity for women coming from countries with low levels of female labor market participation and educational level may explain this result. Furthermore, this effect holds irrespective of the level of gender inequality in the region of destination. This supports theories stating that cultural differences in ethnic communities persist, and in some cases are even enhanced, after migration. Although it can be problematic to counterbalance these strong cultural effects, policy makers should be particularly attentive to women in this respect. Practically, they could support the creation of more formal networks dedicated to women (especially coming from more gender-unequal countries) whereby they can more easily get in touch

with (possibly female) entrepreneurs.

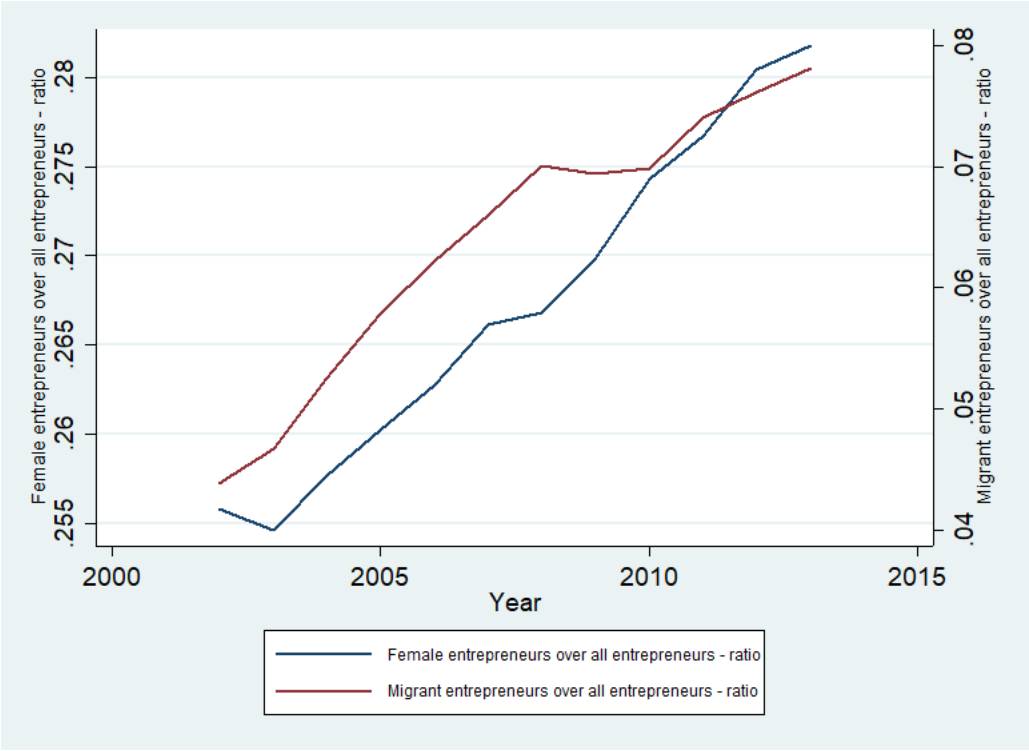
A note of caution is deserved. While we have added a vast series of controls to account for the different entrepreneurial propensity across different years, ethnic groups, regions, sectors, and many of their interactions, we cannot exclude that other sources of unobserved variation might affect our results. However, the fact that the findings are very stable to the progressive inclusion of such controls suggests that remained unobserved variation might not be a major issue in practice. Moreover, in this paper, we have not distinguished between different generations of migrants. Data providing such information would be extremely beneficial to test whether assimilation increases and gender differences are reduced for second-generations of migrants. Moreover, while attractiveness effects are a crucial channel to stimulate migrant entrepreneurship, they can also lead to lock-in and segregation. Therefore, further work is needed to explore factors leading to sectoral diversification of migrant entrepreneurship.

Figure 1: Total number of entrepreneurs by year



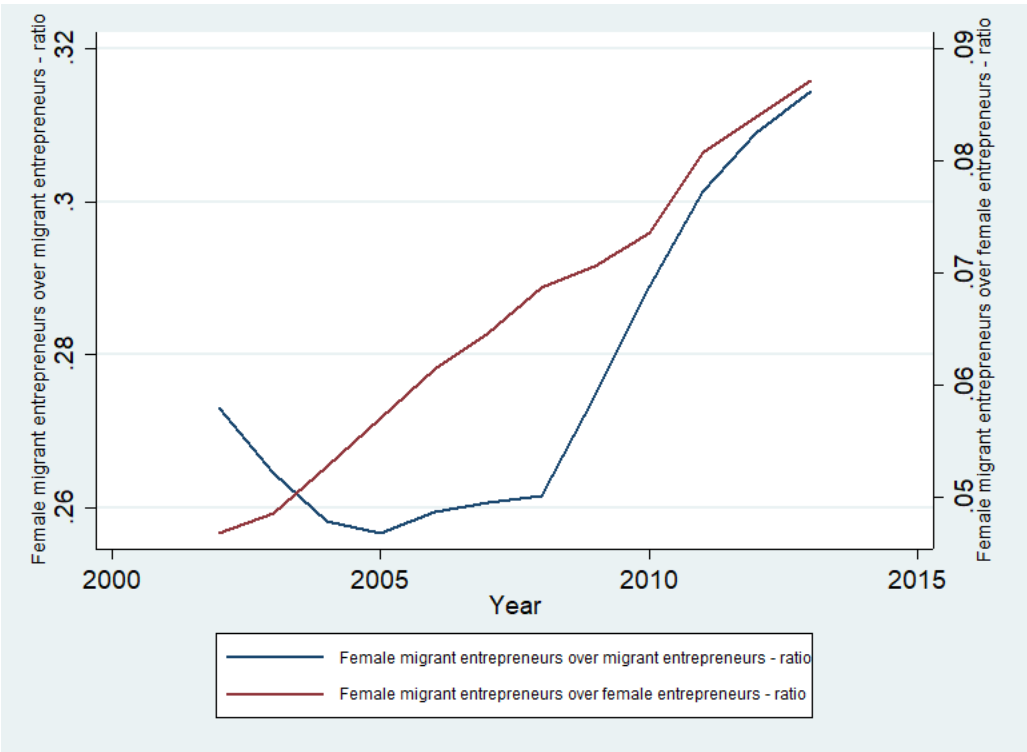
Source: ASIA data set (years: 2002-2013).

Figure 2: Ratio of female entrepreneurs over all entrepreneurs and ratio of migrant entrepreneurs over all entrepreneurs by year



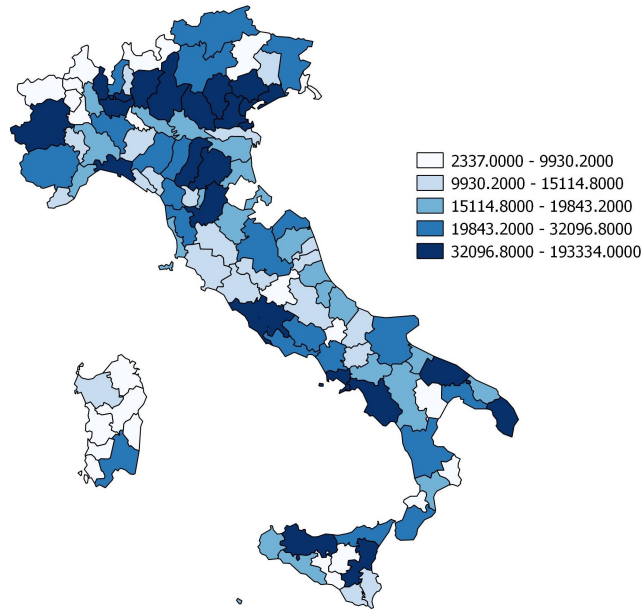
Source: ASIA data set (years: 2002-2013).

Figure 3: Ratio of female migrant entrepreneurs over migrant entrepreneurs and ratio of female migrant entrepreneurs over female entrepreneurs by year



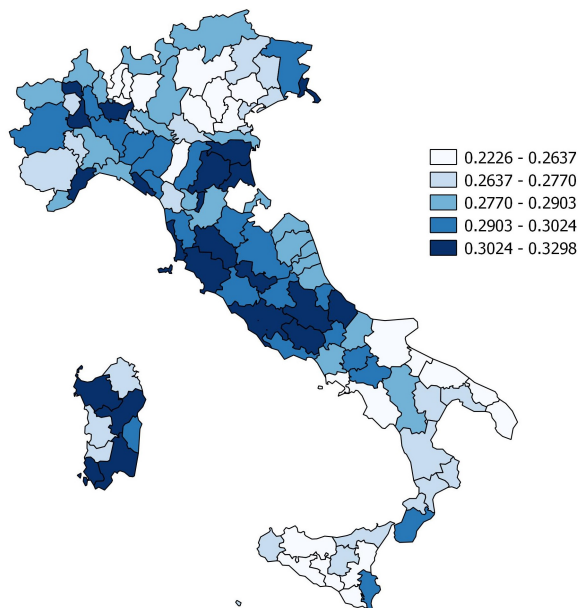
Source: ASIA data set (years: 2002-2013).

Figure 4: Total number of entrepreneurs by province (year 2013)



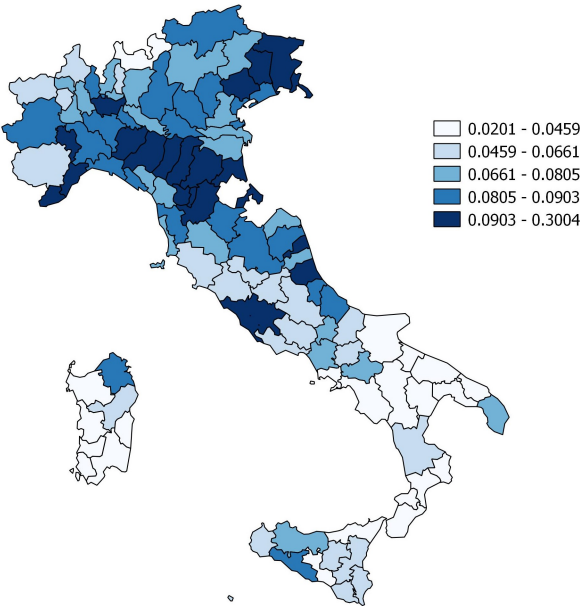
Source: ASIA data set (years: 2002-2013).

Figure 5: Ratio of female entrepreneurs over all entrepreneurs by province (year 2013)



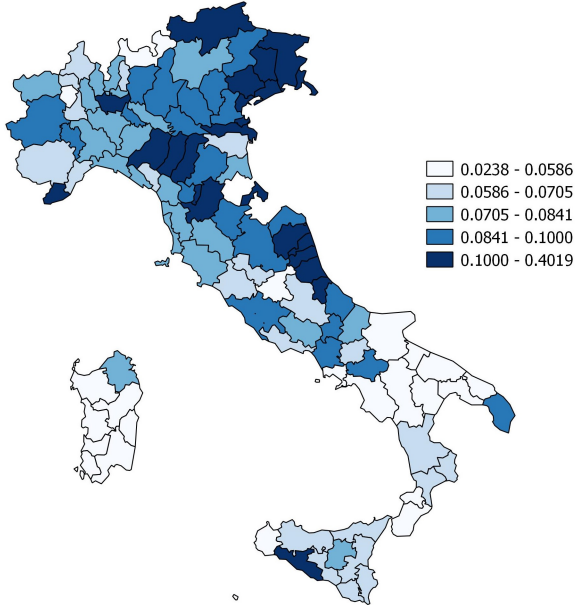
Source: ASIA data set (years: 2002-2013).

Figure 6: Ratio of migrant entrepreneurs over all entrepreneurs by province (year 2013)



Source: ASIA data set (years: 2002-2013).

Figure 7: Ratio of female migrant entrepreneurs over female entrepreneurs by province (year 2013)



Source: ASIA data set (years: 2002-2013).

Table 1: Sample summary statistics

Variable	Pooled		Last year (2013)	
	Mean	Std. dev.	Mean	Std. dev.
New migrant entrepreneurs by industry, province, and country of origin	0.629	4.826	0.534	4.013
New migrant entrepreneurs by industry, province, and country of origin (log)	0.198	0.505	0.187	0.474
Migrant entrepreneurs by industry, province, and country of origin	8.051	37.874	8.138	41.476
Migrant entrepreneurs by industry, province, and country of origin (log)	1.422	0.910	1.415	0.910
Immigration rate by province and country of origin	0.002	0.005	0.003	0.006
Immigration rate by province	0.071	0.034	0.087	0.034
Entrepreneurs by industry and province (excludes same-country migrant entrepreneurs)	3,563.992	6,576.459	3,273.449	6,152.195
Entrepreneurs by industry and province (excludes same-country migrant entrepreneurs) (log)	7.173	1.577	7.085	1.579
Native (i.e., Italian) entrepreneurs by industry and province	3,301.043	6,153.499	2,998.744	5,697.728
Native (i.e., Italian) entrepreneurs by industry and province (log)	7.094	1.582	6.997	1.580
Migrant entrepreneurs by industry and province (excludes same-country migrant entrepreneurs)	262.949	534.181	274.705	578.536
Migrant entrepreneurs by industry and province (excludes same-country migrant entrepreneurs) (log)	4.314	1.710	4.358	1.709
	Observations: 210,363		Observations: 23,550	
New male migrant entrepreneurs by industry, province, and country of origin	0.471	4.124	0.355	2.760
New male migrant entrepreneurs by industry, province, and country of origin (log)	0.148	0.444	0.133	0.398
Male migrant entrepreneurs by industry, province, and country of origin	6.209	32.028	6.000	33.332
Male migrant entrepreneurs by industry, province, and country of origin (log)	1.248	0.827	1.224	0.812
	Observations: 210,363		Observations: 23,550	
New female migrant entrepreneurs by industry, province, and country of origin	0.262	1.687	0.279	1.960
New female migrant entrepreneurs by industry, province, and country of origin (log)	0.123	0.348	0.129	0.357
Female migrant entrepreneurs by industry, province, and country of origin	3.483	12.695	3.710	15.429
Female migrant entrepreneurs by industry, province, and country of origin (log)	1.111	0.646	1.121	0.666
	Observations: 139,111		Observations: 16,960	

Source: ASIA data set (years: 2002-2013)

Table 3: **Effect for males and females separately**

	Males	Females	Gender dif- ference
	<i>Dependent variable: number of new male migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	<i>Dependent variable: number of new female migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	
Model 1: effect stemming from all entrepreneurs			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.302*** (0.006)	0.169*** (0.005)	-0.133***
Model 2: effect stemming from same-gender and other-gender entrepreneurs			
Number of same-gender migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.329*** (0.007)	0.211*** (0.007)	-0.118***
Number of other-gender migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.016*** (0.004)	0.058*** (0.002)	+0.042***
Same-gender effect relative to other-gender effect	20.563	3.638	
Number of observations	210,363	139,111	

Source: ASIA data set (years: 2002-2013)

Estimation method: OLS regressions. Robust and clustered standard errors in parentheses; ***, **, and * denote, respectively, the 1%, 5%, and 10% significance level. All regressions include the same set of controls as Column (7) of Table 2.

Table 4: Gender differences by degree of gender inequality in country of origin

	Males	Females	Gender difference
	<i>Dependent variable: number of new male migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	<i>Dependent variable: number of new female migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	
Gender differences by Gender Inequality Indexes (GIIs) in country of origin			
<i>Countries of origin with low GII (i.e., low gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.213*** (0.008)	0.212*** (0.009)	-0.001
Number of observations	92,921	70,903	
<i>Countries of origin with high GII (i.e., high gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.368*** (0.009)	0.129*** (0.005)	-0.239***
Number of observations	99,160	58,398	
Gender differences by percentages of women in parliament in country of origin			
<i>Countries of origin with high percentage of women in parliament</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.245*** (0.007)	0.197*** (0.008)	-0.048***
Number of observations	119,836	76,892	
<i>Countries of origin with low percentage of women in parliament</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.367*** (0.010)	0.136*** (0.006)	-0.231***
Number of observations	89,884	61,951	

Source: ASIA data set (years: 2002-2013)

Estimation method: OLS regressions. Robust and clustered standard errors in parentheses; ***, **, and * denote, respectively, the 1%, 5%, and 10% significance level. All regressions include the same set of controls as Column (7) of Table 2.

GIIs are provided by UNDP in 2010 and refer to year 2008. We use this version of the GIIs, and not the most recent, as 2008 lies exactly half-way in our panel, which spans years 2002 to 2013. Unfortunately, the 2008 GIIs are not reported for some (small) countries, which entails a loss of observations of around 8%. Countries of origin with low (high) GII are defined as those below (above) the median. As GIIs, percentages of women in parliament refer to year 2008. For a few (small) countries, the 2008 percentage of women in parliament is not reported, which entails a loss of observations of about 0.3%. Countries of origin with low (high) percentage of women in parliament are defined as those below (above) the median.

Table 5: **Gender differences by degree of gender inequality in region of destination**

	Males	Females	Gender difference
	<i>Dependent variable: number of new male migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	<i>Dependent variable: number of new female migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	
Gender differences by Gender Equality Indexes (GEIs) in region of destination			
<i>Regions of destination with high GEI (i.e., low gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.313*** (0.009)	0.168*** (0.009)	-0.145***
Number of observations	109,700	74,444	
<i>Regions of destination with low GEI (i.e., high gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.295*** (0.008)	0.173*** (0.007)	-0.122***
Number of observations	100,663	64,667	

Source: ASIA data set (years: 2002-2013)

Estimation method: OLS regressions. Robust and clustered standard errors in parentheses; ***, **, and * denote, respectively, the 1%, 5%, and 10% significance level. All regressions include the same set of controls as Column (7) of Table 2.

GEIs are provided by Amici and Stefani (2013) and refer to year 2010. Such indexes are only available for year 2010 and are constructed based on the methodology behind the UNDP's GIIs. Regions of destination with low (high) GEI are defined as those below (above) the median.

Table 6: Gender differences by degree of gender inequality in country of origin and degree of gender inequality in region of destination

	Males	Females	Gender difference
	<i>Dependent variable: number of new male migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	<i>Dependent variable: number of new female migrant entrepreneurs by industry, province, and country of origin at t (log)</i>	
Gender differences by GIIs in country of origin and GEIs in region of destination			
<i>Countries of origin with low GII (i.e., low gender inequality) and regions of destination with high GEI (i.e., low gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.209*** (0.014)	0.216*** (0.015)	+0.007
Number of observations	44,987	36,213	
<i>Countries of origin with low GII (i.e., low gender inequality) and regions of destination with low GEI (i.e., high gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.217*** (0.009)	0.209*** (0.011)	-0.008
Number of observations	47,934	34,690	
<i>Countries of origin with high GII (i.e., high gender inequality) and regions of destination with high GEI (i.e., low gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.375*** (0.012)	0.125*** (0.007)	-0.250***
Number of observations	54,161	32,419	
<i>Countries of origin with high GII (i.e., high gender inequality) and regions of destination with low GEI (i.e., high gender inequality)</i>			
Number of migrant entrepreneurs by industry, province, and country of origin at $t - 2$ (log)	0.362*** (0.013)	0.134*** (0.008)	-0.228***
Number of observations	44,999	25,979	

Source: ASIA data set (years: 2002-2013)

Estimation method: OLS regressions. Robust and clustered standard errors in parentheses; ***, **, and * denote, respectively, the 1%, 5%, and 10% significance level. All regressions include the same set of controls as Column (7) of Table 2.

Countries of origin and regions of destination with low and high GII and GEI, respectively, are defined as in Tables 4 and 5. As noted in Table 4, unfortunately, the 2008 GIIs are not reported for some (small) countries, which entails a loss of observations of around 8%.

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