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## Immigrants and Legal Status: Do Personal Contacts Matter?

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# Immigrants and Legal Status: Do Personal Contacts Matter?

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## *Abstract*

This paper addresses the effect of personal contacts on immigrants' legal status by focusing particularly on the contacts' direct links to legal status and indirect associations with the labor market. The overall effect of these contacts is theoretically unsigned and likely to vary across contact type and contextual factors. Our empirical analysis, based on unique Italian survey data on both documented and undocumented immigrants, tests two hypotheses regarding native contacts: (i) that they are more likely to be associated with a higher immigrant documentation probability and (ii) that they are more likely to introduce immigrants to jobs that facilitate access to employment-based legalization initiatives. Our results indicate that contacts with both natives and family members have a direct, positive, and quantitatively large effect on immigrant documentation probability, whereas contacts with members of the same ethnic group only indirectly increase documentation probability by raising the probability of employment. Our findings also support the hypothesis that native contacts connect immigrants with better jobs.

**Keywords:** Immigrant integration; legal status; personal contacts; networks; labor market outcomes

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## **Introduction**

Undocumented immigration is at the core of the policy debate in most destination countries, with U.S. estimates being around 11.5 million (Hoefler et al. 2011) and European (EU–27) figures ranging between 1.9 and 3.8 million (Vogel et al. 2011). Because these undocumented immigrants lack legal status, they tend to have little access to basic civil and social rights, are at risk for labor market exploitation, and often suffer negative effects on dimensions of their integration process and well-being. The empirical literature, for example, consistently demonstrates that newly legalized immigrants have higher wages (Amuedo-Dorantes and Bansak 2011; Amuedo-Dorantes et al. 2007; Borjas and Tienda 1993; Kaushal 2006; Kossoudji and Cobb-Clark 2002; Lozano and Sorensen 2011; Pan 2012) and lower crime rates (Mastrobuoni and Pinotti 2015; Pinotti, 2015). Legalization also affects immigrant employment outcomes (Amuedo-Dorantes and Bansak 2011; Devillanova et al. 2014; Pan 2012), remittances (Amuedo-Dorantes and Mazzolari 2010), and consumption behaviors (Dustmann et al. 2014).

Conversely, unauthorized presence has important consequences for receiving countries' economies, including effects on tax revenues and public expenditures (CBO 2007) and/or on natives' labor market outcomes (Chassamboulli and Peri 2015). In fact, legal status is a key driver of natives' attitudes toward immigration. For instance, data from the 2011 wave of the Transatlantic Trends Survey on Immigration show that, in all countries, the majority of respondents expressed worry about illegal immigration, with the highest rate of concern reported in Italy (80%). These same respondents, however, are generally unconcerned about legal immigration. Yet despite the pervasive effects of and great concern over immigrant legal status, undocumented immigration remains an underexplored field, and knowledge about the process of accessing and retaining legal status is limited (Cvajner and Sciortino 2010). This present paper thus contributes to the knowledge pool by examining how immigrants' personal contacts shape their documentation probability.

To this end, we first outline the theoretical effects of immigrants' personal contacts on their legal status by focusing not only on illegal entry (cf. Liu 2015; Massey et al. 2014) but on the probable transitions experienced between legal statuses at different stages of the migration process (Vickstrom 2014). We do so because although no-visa entry is at the core of the political discourse on irregular migration (Vollmer 2011), it accounts for a relatively small fraction of the undocumented population (Triandafyllidou 2010). We also highlight not only the direct link between personal contacts and legal status but the indirect labor market effect of these contacts' determining documentation probability by influencing employment outcomes (Calvo-Armengol and Jackson 2004; Granovetter, 1973; Montgomery 1994). Although not considered in the research to date, this channel is likely to play a major role in countries that tend to adopt work-based legalization initiatives.<sup>1</sup> Based on our literature review, we assume that the impact of personal contacts on documentation probability will not only be theoretically unsigned but likely to vary across different contact types. We also hypothesize a stronger association between native contacts (relative to familial or ethnic contacts) with (i) a higher immigrant documentation probability (once employment is controlled for) and (ii) job attributes that enable immigrants to access employment-based regularization initiatives.

To test these assumptions, in an innovative methodological step, we extend previous quantitative evidence on specific transitions (Liu 2015; Massey et al. 2014; Vickstrom 2014) by assessing the overall effect of personal contacts on immigrant legal status. To do so, we use a unique survey dataset that not only covers both documented and undocumented immigrants but includes a personal contacts measure that distinguishes between familial (family members), ethnic (same ethnic group), and native contacts. We separately identify personal contacts' direct effect on legal status and their indirect effect on the labor market and, as a byproduct of our analysis, we provide new quantitative evidence on

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<sup>1</sup> Although employment-based legalization programs and mechanisms (Brick 2011) are particularly likely in European (Chauvin et al. 2013) and especially southern European countries (Kraler 2009), employment requirements also play an important role in the U.S., where the 1986 IRCA-SAW program legalized over 1.2 million unauthorized immigrants conditional on their having been employed in the agricultural sector.

how immigrants' personal contacts influence their employment probability and specific job attributes. To the best of our knowledge, this study is the first to address this issue using Italian data and one of very few to employ a sample that includes undocumented immigrants.

The survey data used in the analysis were collected in Calabria, southern Italy, one of Europe's poorest regions, which not only has a large shadow economy but has been experiencing a dramatic increase in immigrant inflows in recent years. Although most regions on Europe's southern border can be similarly characterized (Eurostat 2016; UNDESA 2016), a serious absence of microdata hampers our knowledge of immigrants' integration trajectories in these areas, including their labor market outcomes and legal statuses. This geographical limitation is disappointing given the socioeconomic context's importance in mediating the effect of personal contacts on individual outcomes (Kalter and Kogan 2014). Our study thus aims to begin filling this void.

Our estimates provide evidence that having a familial or native contact does in fact increase documentation probability. In particular, whereas the average marginal effect of native contacts on legal status is about 20 percentage points, the effect of ethnic contacts drops to zero once we control for individual employment status. This result suggests that co-ethnics help immigrants gain legal status mainly because they increase employment probability, an intuition supported by our explicit examination of indirect labor market effects, which identifies a large positive impact of ethnic contacts on immigrant employment probability that is not evident for familial and native contacts. Our results also indicate that native contacts are more likely than ethnic contacts to be associated with a higher probability of employment in better occupations, which are in turn more likely to provide access to regularization programs. Taken together, these findings point to a complex interrelation between individual immigrants' personal contacts and their legal and labor outcomes.

## Theoretical Background and Related Literature

Although a large body of literature examines the role of personal contacts in shaping individual behaviors and outcomes through, for example, provision of material resources and information or peer pressure,<sup>2</sup> only a handful of studies explore the relation between personal contacts and legal status. One generally agreed upon observation in the former is that the effect of personal contacts tends to vary across relationship types and outcomes of interest (Burt, 2001; Granovetter 1973; Lin 1999; Portes 1998), as well as with different rules and organizational contexts of interaction (Nee and Ingram 1998; Small 2009). In our study, we are interested in how different types of personal contacts affect immigrants' legal status in the destination country, represented by “documented” and “undocumented” on the right-hand side of Fig. 1. This issue, however, is both theoretically and empirically problematic because irregularity is a multifaceted phenomenon (Jandl 2004; Kraler 2009) that encompasses a complex migrant stratification characterized by substantial mobility across legal statuses (Cvajner and Sciortino 2010; Vickstrom 2014). Moreover, legal status depends not only on the institutional and legal context (De Genova 2004, 2013) but also on push and pull migration factors and the economic and social resources accessible to immigrants (Massey et al. 2014), including personal contacts.

In earlier work, this link between personal contacts and legal status tends to be conceptualized in terms of the decision to migrate illegally (Liu 2015; Massey et al. 2014), represented by “no-visa” entry option in the figure. Theoretically, this focus highlights two contrasting effects: contacts in the destination region can facilitate illegal entry by providing pre arrival border-crossing information and post arrival material assistance (Monzini et al. 2004) or they can encourage legal entry by passing on

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<sup>2</sup> The literature on the effects of personal contacts largely overlaps with studies on social networks and social capital (see Bourdieu 1980; Coleman 1988; Durlauf and Ioannides 2010; Lin 2001), which latter is defined as “the ability of actors to secure benefits by virtue of their membership in social networks or other social structures” (Portes 1998). Because an exhaustive review is far beyond the scope of this paper, this section draws only selected insights from these studies.

information about visa application procedures and visa-related programs (e.g., family reunification schemes) and showing disapproval of illegal border-crossing attempts (Poeze 2010). In reality, however, no-visa entries represent only a minor fraction of undocumented immigration (Triandafyllidou 2010), with legal entry being neither a necessary nor a sufficient condition for subsequent legal residence (see Fig. 1). Rather, legal status can change at different stages of the migration process, as illustrated by the eventual granting of humanitarian protection-based residence permits to many of the visa-less forced immigrants landing on Mediterranean coasts. Moreover, once arrived, undocumented immigrants can often access the regularization initiatives that are common in major immigration countries (Casarico et al. 2015; Kraler 2009), which in the EU have granted legal status to over 5 million individuals since 1996 (Brick 2011). In many nations, however, the vast majority of undocumented immigrants (up to 70% in Italy) are those who have remained in the host country after the expiration of a visa or temporary residence permit (Fasani 2010). Other immigrants may decide to move back to their homeland or to a new destination. These possible transitions of regularization, irregularity, and outmigration are graphed as options (b), (c), and (d), respectively, in the figure.

Fig. 1 about here

Empirically examining this issue is also made problematic by the general lack of data on undocumented immigration; especially, on individual personal contacts. Even the existing handful of quantitative studies on the personal contact–legal status relation focus only on the specific pathways of no-visa entry (Liu 2015; Massey et al. 2014; Vickstrom 2014) or overstaying and falling into irregularity (Vickstrom 2014). There is thus no evidence on access to regularization programs, despite its quantitative relevance. Extant findings identify no clear effect of personal contacts on no-visa entry (Liu 2015; Vickstrom 2014), although contacts with migration experience strongly predict undocumented trips (Massey et al. 2014), and large heterogeneity across measures of social capital and areas of origin (Liu 2015; Massey et al. 2014). Only Vickstrom (2014) provides evidence that



having children or a spouse in the destination region has a negative impact on the probability of overstaying, while the number of other personal contacts has no significant effect. We find no research, however, on the overall effect of personal contacts on documentation probability, which results from the combined effect of flows (a)-(d). We next argue that the impact of personal contacts on flows (b)-(d) is theoretically unclear, adding to the theoretical uncertainty surrounding entry (a).

We first consider the direct link between personal contacts and legal status by focusing primarily on the role of *material resources* and *information*. The inclusion of other channels like peer pressure or social norms enforcement would increase complexity without altering the main insights. Our main assertion is that personal contacts, by providing such material resources as accommodation and/or financial and logistic support, have contrasting effects on documentation probability. That is, in addition to increasing immigrants' chances of survival in irregularity by compensating their limited access to formal services (Cvajner and Sciortino 2010; Monzini et al. 2004), personal contact might also facilitate acquisition and maintenance of legal status by furnishing the stable accommodation needed for application to regularization programs or the monies for administrative procedural costs.

Nonetheless, even though personal contacts may facilitate survival in irregularity by teaching undocumented immigrants how to circumvent institutional constraints like police checks or access alternative services like health care (Devillanova 2008; Huschke 2014; Mahler 1995; Menjivar 2002), the effect of information is theoretically unsigned. Indeed, information can favor the acquisition and/or maintenance of legal status by acquainting immigrants with legalization initiatives and application procedures. In specific institutional contexts, personal contacts may even provide immigrants with affidavits in support of application (Hagan 1998). It thus stands to reason that the effectiveness of information is crucially dependent on its quality, which is likely to vary between contact types.

In this paper, based on numerous ethnographic accounts, we expect ethnic and familial contacts to be of most use in providing immigrants with material resources (Mahler 1995; Portes and

Sensenbrenner 1993; Rosales 2013). In fact, recent experimental research does demonstrate that individuals are more likely to behave prosocially toward members of the same ethnic or religious group (Adida et al. 2014; Habyarimana et al. 2007; Whitt and Wilson 2007). We also hypothesize that contacts with natives offer better quality information than contact with co-ethnics because the former have considerable advantages in terms of language skills and knowledge of institutional frameworks (Ambrosini 2012).

Personal contacts can also influence immigrant legal status indirectly via their labor market effect, which follows from the common practice in regularization initiatives of conditioning eligibility on specific employment requirements. Work-related regularization schemes thus create a link between immigrant labor market outcomes and possible access and maintenance of legal status, an aspect as yet largely overlooked in the literature. In examining this issue, it is convenient to separate personal contacts' indirect labor market effects into two distinct outcomes: The *probability of being employed* and, conditional on this employment, the *characteristics of the job*. The former's effect on legal status is straightforward: in employment-based legalization initiatives, personal contacts increase immigrant documentation probability if they correlate positively with employment probability. They might also, however, influence job characteristics that are relevant for accessing and maintaining legal status. For example, having a stable occupation makes it easier to prove past employment experience, while job stability reduces the probability of falling into irregularity if renewal is conditioned on being employed. Moreover, for employment-based regularization initiatives whose application procedures require employer involvement (Chauvin et al. 2013), personal contacts can better connect with employers willing to participate in the process. Similar considerations pertain to the visa sponsorship schemes common in major immigration countries, which condition the issuance and/or renewal of a residence permit on having an employer willing to support the application.

The same material resources and information that have a direct effect on immigrants' legal status trajectories can also prove crucial in the labor market. For instance, housing accommodation and

monetary support allow immigrants to spend more time in the job search, leading to longer unemployment spells and eventually to better job matches. Personal contacts can also transmit information about job openings (Calvo-Armengol and Jackson 2004) or provide references to prospective employers (Montgomery 1994). Nonetheless, as numerous studies emphasize, the effects of personal contacts on labor market outcomes—either through employment probabilities, wages, or other job attributes—can vary greatly with contact characteristics (Burt 2001; Granovetter 1973; Lin 1999; Portes 1998).

Unfortunately, mainly because of data constraints, the empirical literature on immigrants' personal contacts in the labor market is extremely heterogeneous in terms of contact measures and analytic methodologies.<sup>3</sup> Likewise, the reported findings, whether based on use of personal contacts in the job search or contact availability, suggest broad effect heterogeneity across contact types. That is, although contacts with natives do appear to raise employment probability (see Kanas et al. 2011 for Germany and Lancee 2010 for the Netherlands) and occupational status (Kanas et al. 2012), the effect on income remains unclear (positive in Lancee 2010; no effect in Kanas et al. 2012). Conversely, personal contacts do seem to enhance the employment outcomes of Mexican immigrants in the U.S. (Munshi 2003), although their effectiveness varies by both contact type (friendship vs. familial ties) and legal status (Aguilera and Massey 2003; Amuedo-Dorantes and Mundra 2007). More generally, research also shows heterogeneous effects across gender (Aguilera, 2005; Livingston 2006) and origin group (Battu et al. 2011; Giulietti et al., 2013; Kalter and Kogan 2014). It also suggests that ethnic contacts could have detrimental effects in segmented labor markets by lowering wages and

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<sup>3</sup> One important strand of research looks at the effect of *impersonal contacts*, measured by the spatial proximity of individuals similar in ethnicity, language, or country of origin. For Europe, recent evidence produced using quasi-experimental designs suggests that impersonal contacts lead to higher employment probabilities and earnings (Damm 2014; see also Damm 2009; Dustmann et al. 2016; Edin et al. 2003). This approach, however, cannot differentiate between contact types. In general, the identification of causal relations for personal contacts is extremely demanding in terms of data and/or experimental variation (Blume et al. 2011; Mow 2006). This fact, together with a distressing scarcity of suitable data, explains why, other than the notable exceptions of Kanas et al. (2011, 2012) and Kalter and Kogan (2014), causal evidence from the European context is still limited.

employment probabilities (Enchautegui 2002; Green et al. 1999) and/or leading to ethnically concentrated jobs (Elliott 2001). In fact, social contacts constitute an important means of inequality reproduction in numerous contexts (DiMaggio and Garip 2012).

### **Empirical Hypotheses**

According to the research reviewed above, personal contacts can affect legal status both directly and, in the presence of employment-based legalization schemes, indirectly by influencing immigrant labor market outcomes. Each of these effects is theoretically unsigned dependent on the quality of the contact-provided resources, implying that the link between personal contacts and legal status is also likely to vary across relationship types. Our reading of the literature further suggests that familial and ethnic contacts have a higher propensity than natives to provide costly aid, albeit with an unclear effect on legal status. However, although ethnic contacts are likely to increase individual employment probability, they can lead to job segregation and poorer work conditions, whereas native contacts are likely to be more useful in conveying information for obtaining legal status and bridging immigrants to jobs that make regularization programs more accessible. By synthesizing these observations, we derive two testable hypotheses:

*Hypothesis 1:* Once being employed is controlled for, native contacts will be associated with a higher probability of being documented.

*Hypothesis 2:* Native contacts will be associated with job characteristics that are useful for accessing regularization programs.

## **Context and Data**

### **Context**

European countries are characterized by striking internal disparities, with regions whose GDP per capita (NUTS 2, PPPs) is less than 75 percent of the EU-28 average disproportionately concentrated

along the southern and eastern borders (Eurostat 2016). During the last few years, these regions have experienced a dramatic increase in their foreign population; in particular, peak migration pressure stemming from the Middle East crisis (UNDESA 2016). Yet because of a lack of microdata, immigrant integration in these unusual contexts is greatly understudied. Nonetheless, the few analyses that do exist point to an interplay between recent migratory inflows and the economic system that particularly characterizes southern European regions (Ballarino and Panichella 2015; Pugliese 2002; Reyneri and Fullin 2011). In these areas, the foreign labor force is concentrated in a large underground economy that allows it to circumvent barriers to the official labor market (Ambrosini 2001; Avola 2014; Fullin and Reyneri 2010; Reyneri 2001) while undergoing frequent transitions between legal statuses (Reyneri 2003).

This analysis uses a unique 2007–2008 dataset of both documented and undocumented immigrants living in the southern Italian region of Calabria, which encompasses 5 provinces and 409 municipalities. Calabria is a paradigmatic case to look at. The region, whose per capita GDP is about two-thirds of the Italian average, has a 26.9% poverty rate that is over five times higher than the national rate of 4.9% (Istat 2015). Likewise, its employment rate is only around 33.6%, 10 percentage points less than the national rate, with a remarkably high incidence of irregular work, about 29% in 2009, compared to a national average of 12%.<sup>4</sup> At the beginning of 2007, Calabria had approximately 2 million residents (3.4% of the Italian population), including 50,871 officially resident foreigners who represented 2.5% of the total population, much lower than the 9% in the more dynamic northern and central regions. In recent years, however, the area is experiencing a spectacular increase in migration inflows—including a particularly high 44.5% between 2007 and 2008 (Istat 2016). The region is also characterized by a high undocumented presence that in 2008 represented over 30% of

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<sup>4</sup> Unless otherwise indicated, the data used in this section are drawn from the Italian National Institute of Statistics (<http://dati.istat.it/>) accessed on October 2016.

the total immigrants in southern Italy (vs. 15% nationally, which fell to 6% in 2013; Ismu 2013). This number reached its maximum of 38.9% in the Calabrian province of Crotona (Ismu 2008).

This large undocumented presence exists despite Italy's numerous past amnesty programs, which account for the country's large share of documented foreigners.<sup>5</sup> The largest legalization program, implemented in 2002 with over 700 thousand applications, granted legal status to as many undocumented immigrants as the 91.3% of regular presences in 2003 in southern Italy (compared to 47.9% nationally; Istat 2005). Since 2002, amnesty programs have conditioned eligibility on being employed at the time of application. Furthermore, the main legal channel through which to enter Italy for work reasons are the quota agreements, which accounted for 150,000 entries in 2008. These agreements, although *de jure* targeted to prospective immigrants having an employer willing to hire them, *de facto* operate as a "mini-regularization programme of (employed) people already in the country" (Triandafyllidou and Ambrosini 2011, p. 253). Therefore, both procedures (amnesty programs and quota agreements) create a strict link between the opportunity to access legal status and two key factors: being employed and having an employer willing to apply for worker legalization. It is these two factors that make the indirect labor market effect of personal contact particularly relevant for our analysis.<sup>6</sup>

A further distinguishing feature of the Italian immigration framework is that most categories of residence permit allow immigrants to work. For instance, 91.42% extra-EU foreign citizens lawfully residing in Calabria for work (45.36%), family (41.40%),<sup>7</sup> study (1.72%), or asylum (2.94%) could

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<sup>5</sup> Mass legalization programs in 1986, 1990, 1995, 1998, 2002, 2009, and 2012 legalized approximately 1.85 million immigrants, a very large number for a country that hosted about 3.6 million documented immigrants in 2012.

<sup>6</sup> See IOM (2009, p. 349) for a description of the Italian immigration law and Ambrosini (2007) for a historical account.

<sup>7</sup> It is worth noting that although immigrants with a familial contact in the destination region might access family reunification schemes, the link is far from automatic. In fact, Italy imposes relatively restrictive income, housing, and legal status conditions on primary migrants before they can bring in their family members. These reasons also partly explain the frequent operation of irregular reunification pathways in the Italian context (Vickstrom and Gonzales-Ferrer 2016). In our dataset, it is reasonable to assume that prevalent economic conditions (see footnote 10) and the high share of residence and labor market irregularity (see Table 1) make it difficult for sample respondents to meet the legal requirements for family reunification.

accept employment, although all students were subject to an hourly limit. Other exceptions included asylum seekers and those under humanitarian protection (0.6%), who were not allowed to work during the first 2 months (6 months in 2007) following arrival. Hence, only about 2.5% of the documented presence in Calabria (which resembles those nationally) was likely to be ineligible for a work permit (Istat 2016).

## **Data**

The survey data used in our analysis were collected as part of the European EQUAL project (Comito et al. 2008) designed to monitor the migrant integration process in the regional labor market and detect any possible discrimination. Data collection was conducted by eight partners, comprising a consortium of three universities (Mediterranean University of Reggio Calabria, University of Messina, and University of Calabria), professional training institutions, and Catholic and lay nonprofit associations, chosen from among organizations actively operating with immigrants and most rooted in the area. This multiplicity of associations was intended to reduce possible bias in the sample selection process.

Subject sampling was based on an *intercept point survey* method suitable for reaching individuals not accounted for in official statistics, such as recently arrived and irregular immigrants (McKenzie and Mistiaen 2009). During the six months of fieldwork (from October 2007 to April 2008), each partner institution collected questionnaires at intercept points scattered throughout the region for one month chosen at random. Enumerators were instructed to randomly approach subjects from among all the immigrants over 18 who showed up in that spot. The basic characteristics of the sample were cross checked with those available on documented population at the end of fieldwork.<sup>8</sup> Although the representativeness of a sample whose underlying population includes undocumented immigrants is

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<sup>8</sup> We thank Domenico Marino and Dario Musolino for providing us with information on the sampling procedure.

difficult to assess, later cross-checks indicate that the survey data are a rather good match to the little available information on immigrants in Calabria.

The total sample consists of 911 individuals representing 51 different countries, although the vast majority (66%) hail from five nations: Morocco, Romania, Ukraine, Albania, and Poland.<sup>9</sup> Given our study objective, we restrict the regression sample to 632 immigrants from non-EU countries (extra-EU) whose legal status is known but use the full sample for additional checks on employment and job attributes. An individual's legal status is denoted by the variable *Documented<sub>i</sub>*, an indicator equal to 1 if immigrant *i* has a residence permit for work at the time of interview, and 0 otherwise. It should be noted, however, that the survey question “Do you hold a residence permit for work?”, although it captures permits that allow employment, does not identify mixed legal statuses. Nevertheless, in the Italian legal context, there is major overlap between residence and work permits because most permit types allow employment, but all work permits are conditional on legal stay (Vickstrom and Gonzales-Ferrer 2016).

Whereas immigrant employment status is self-declared and includes seasonal and irregular jobs, job attributes are derived from two survey questions asked only of the 588 employed individuals.<sup>10</sup> The first, “Could you indicate your actual working conditions?,” has five possible responses—“open-ended,” “fixed-term,” “part-time,” “seasonal,” and “irregular”—based on which we construct a *Regular Job* indicator equal to 0 for the irregular option and 1 otherwise. Although the item phrasing is admittedly rather imprecise and *Regular Job* might identify both discontinuous precarious employment and illegal jobs, for our purposes, the key concern is that the variable capture more stable

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<sup>9</sup> The five main national groups are the same for the subsample of documented immigrants and coincide to those obtained from the official statistics on residence permits in Calabria in 2007 (Istat 2016). The gender composition and the age structure in the two sample is roughly the same as well.

<sup>10</sup> In a previous version of this paper, we also use monthly wages (four wage brackets) to produce outcomes similar to those reported in the Employment and Job Attributes section. Note, however, that immigrants in the sample show low wage variability, with 80% of those employed earning less than €300 per month.



occupations. The second question, “Do you have a job contract?,” for which 13% of the employed are missing data, is the basis for an indicator equal to 1 if the worker has an employment contract, 0 otherwise. This question, although it does not specify contract content and we suspect large heterogeneity among contractualized workers, does capture more stable employment relationships that, like *Regular Job*, should facilitate access to work-related legalization programs.

We report the summary statistics for the main regression sample in Table 1, first for the entire extra-EU sample, then for two extra-EU subsamples split by legal status, and finally for the full sample including EU migrants. As the table shows, the average age is 35, gender composition is roughly balanced, about half the sample is married, and 59% of individuals reported having a child at the time of interview. The immigrants in the sample are fairly well educated, a prominent feature of Italian immigration, with 41% having an upper secondary education or above (45% when EU countries are included). The primary motivation for migrating is economic (as opposed to political, religious, study, family, or other). More than half the sample had been in Italy for at least three years at time of interview (as measured by a *Years Since Migration* indicator of less than one year, between one and three years, or more than three years). As regards irregularity, 38% of the 632 extra-EU immigrants are undocumented, a figure reassuringly close to the 38.9% share estimated by Ismu (2008) for the Calabrian province of Crotona. About 70% of the sample is employed, but as expected, the employment probability is lower for undocumented immigrants. The table also reveals that both job attribute indicators differ greatly between documented and undocumented immigrants.

[Table 1 about here]

The most important variable in Table 1 is the availability of personal contacts in the destination country, obtained from the question, “Did you know whom you could call on before leaving?” The possible, and mutually exclusive, answers—contacts with Italians, family members, or those in the

same ethnic community<sup>11</sup>—allow us to address two priorities in this research field: namely, empirically assessing network effects using data on *actual contacts* (as opposed to co-presence) and differentiating among *relationship types* (DiMaggio and Garip 2012, p. 112, emphasis added). It should be stressed, however, that our measure, rather than using actual personal contacts in the destination county, is based on those already known pre migration, which addresses any issues of reverse causality. On the other hand, if pre-existing personal contacts imperfectly capture their availability after arrival, our measure could admittedly induce an attenuation bias. As reported in Table 1 the vast majority of extra-EU immigrants (about 77%) reported having either a familial (33%) or ethnic (35%) contact, with only a few (9%) stipulating a native contact. Although documented immigrants are more likely to have a native contact than undocumented immigrants (11% vs. 6% in Table 1), the difference is not statistically significant at a standard level. All other differences between covariates in the two samples go in the expected direction.

## Empirical Framework

As our empirical framework, we estimate variants of the following probit model:

$$\Phi(Y_{i,j,p} = 1) = \alpha + \beta \text{Contact}_i + \gamma X_i + \mu K_i + \delta Z_p + \theta J_i \quad (1)$$

where  $Y_{i,j,p}$  is the generic binary outcome of interest of immigrant  $i$ , from area of origin  $j$ , residing in province  $p$ .  $\text{Contact}_i$  is the indicator for the presence of personal contacts, as captured by pre-existing personal contacts, and  $\beta$  is the main parameter of interest.  $J_i$  is a set of origin area fixed effects, and  $X_i$  is a vector of predetermined individual characteristics that include basic demographics: gender, age, age squared, an indicator for being married, and another for having children. Individual human

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<sup>11</sup> Because this question leaves the definition of co-ethnic to respondents and we have no information on the strength of personal contacts, responses could include members of the ancestry group or people born in the origin country. Moreover, contacts may include friends or acquaintances made in the country of origin or in Italy during previous migration experiences. They might even include people to whom direct contacts have referred the immigrant for help.

capital is measured by the highest educational level (high school or above), but unfortunately, our dataset provides no information on Italian language proficiency. To control (albeit somewhat imperfectly) for possible bias in selection into migration,  $X_i$  includes an indicator for economic migration.  $K_i$  then includes time since migration and further individual controls that may vary across outcomes.  $Z_p$  represents two provincial controls derived from Italian National Institute of Statistics data:<sup>12</sup> The first is a measure of the spatial concentration of migrants from each origin country given by the (log)total number of immigrants in province  $p$  from origin country  $j$  of individual  $i$  over the total number of immigrants in the province.<sup>13</sup> The second is the provincial unemployment rate, included to control for labor market conditions in the reference province.

We use this model to test our first hypothesis by denoting immigrant legal status by  $Y_{i,j,p}$  and including employment status in  $K_i$ .  $\hat{\beta}$  captures the effect of personal contacts on documentation probability once the indirect employment effect is controlled for. We then explore the indirect channels linking personal contacts with legal status by estimating model (1) with outcome  $Y_{i,j,p}$  denoting individual employment status. Lastly, we test our second hypothesis by estimating model (1) with either *Regular Job* or *Contract* as the dependent variable. We correct for selection into employment by fitting a maximum-likelihood ordered probit model with sample selection (*heckprobit* command, Stata 13), making the selection equation for employment the most saturated version of (1). The identifying variables (Heckman 1979) in this analysis are marital status and number of children, which correlate with the decision to work but should not directly affect occupational type. We verify the results of these analyses using simple probit models (not reported), which deliver very similar results.

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<sup>12</sup> The provincial figures for the unemployment rate and foreign presence by nationality come from Istat (2008a and b, respectively). Foreigner presence is derived from the official residential register and thus refers to documented immigrants only.

<sup>13</sup> Although neighborhood-based measures of ethnic networks are commonly used to proxy impersonal contact availability, here they probably also capture more general contextual features affecting provincial ethnic composition.

For these regressions to produce truly unbiased estimates of the causal parameter  $\beta$ , personal contacts would have to be assigned to the immigrants randomly (Rubin 2005), which is hardly the case. Rather, research is typically subject to *reverse causality* and/or *nonrandom selection into contacts*. The former occurs if (for example) being documented provides individuals with higher exposure to personal contacts, thereby increasing their probability of having friends or acquaintances. For instance, interaction with new people can expose undocumented immigrants to a higher risk of detention and induce them to consistently restrict and select their personal contacts (Huschke 2014; Völker and Flap 2001). Similar considerations apply for employment probability and to a certain extent, to job attributes.

At the same time, individuals self-select into contacts by choosing whether and with whom to interact (Feld 1981; Lazarsfeld and Merton 1954; McPherson et al. 2001), which becomes problematic when those with different personal contacts differ by some unobservable characteristic that correlates with the outcome of interest. In fact, the presence of personal contacts in the destination country shapes individual decisions to migrate (Massey and Espinosa 1997), probably driving migrant self-selection along, for example, educational levels (McKenzie and Rapoport 2010), risk aversion (Umblis 2012), gender, and contact type (Garip 2008; Liu 2013). Even selection into the survey is possible if the personal contacts variable correlates with sampling probability. In our framework, however, reverse causality is not an issue because contact information refers to pre migration knowledge (Amuedo-Dorantes and Mundra 2007; Goel and Lang 2010; Kalter and Kogan 2014). Nonetheless, we acknowledge possible biases induced by self-selection even though these are not supported by the results of our later sensitivity tests.

## Results

### Legal Status

Table 2 reports the average marginal effects (AMEs) and robust standard errors for documentation probability (see Appendix Table 5 for the estimated coefficients). The regressors in column 1 are personal contacts (with “no contact” as the excluded category) and origin area fixed effect (not reported). Columns 2–5, respectively, add in the additional controls of predetermined individual characteristics, employment status, time since migration, and provincial characteristics. As predicted by H1, the table shows a clear association between having a native (or familial) contact at the destination and higher documentation probability. This effect is precisely estimated and quantitatively large, with the most saturated equation (column 5) indicating that the average marginal effect of a native (familial) contact is a 19 (10) percentage point increase in documentation probability. Although ethnic contacts also appear to be associated with a higher probability of legal status, the magnitude of this effect drops dramatically once we control for immigrant employment status, after which the estimated coefficient becomes statistically no different from zero at the standard level of significance. As also expected, higher documentation probability is always significantly associated with being employed. Because these findings suggest that ethnic contacts have only an indirect influence on immigrant legal status, we explore this issue further in the next section.

Table 2 about here

As previously discussed, even though our personal contact measure allows us to overcome the usual reverse causality issues, our estimates could still be biased if immigrants with and without a personal contact differ systematically in a way that correlates with their regularization probability. It is worth noting, however, that the AME estimates for native and familial contacts are reasonably stable across all five specifications. Following Bertrand et al. (2000)’s argument, treating observable characteristics as unobservables should strongly impact effect estimates when at least some are

correlated with individual unobservable characteristics, implying that unobserved individual heterogeneity is unlikely to be driving our results.

As regards the other controls, our provincial variables are both statistically significant and signed as expected, with a positive correlation between the share of co-ethnics and documentation probability but a negative estimate for unemployment rate. Being documented is strongly associated with having migrated for economic reasons, a finding that, in conjunction with those for employment status and provincial level unemployment rates, is easily explainable by the predominance in Italy of work-related schemes to access legal status. The estimated coefficient for age is also positive, while those for all other covariates are not statistically different from zero. As expected, the probability of being undocumented decreases with permanence in Italy, possibly because the Italian legal framework offers no specific mechanism by which undocumented immigrants can acquire legal status. They are thus forced to wait (often a substantial time) for erratic regularization programs through which to exit their unauthorized condition, perhaps after finding a proper job. Nonetheless, we cannot rule out the possibility that the observed correlation is shaped by the outmigration of individuals who, having failed to regularize their presence, decide to return home or move to a new destination, thereby exiting the sample.

### **Employment and Job Attributes**

Table 3 then reports the average marginal effects for employment probability, which are again derived from progressively saturated models (estimated coefficients in Appendix Table 6). For completeness, the estimates in columns 1, 3, 5, and 7 are restricted to extra-EU immigrants while the even-numbered columns report those for the unrestricted sample. In this analysis, all controls have the expected sign: economically motivated migration is strongly associated with employment outcome, education correlates positively with employment probability, the spatial concentration of same origin country immigrants has a positive and highly statistically significant coefficient, and female immigrants experience lower employment probability than males. Remarkably, however,

whereas the AMEs for ethnic contacts are positive and significant at the 1% level in all specifications, those for familial and native contacts are statistically no different from zero. The effect of ethnic contacts is quantitatively large: having an ethnic contact in Italy increases the predicted employment probability by approximately 15 percentage points, although with minor differences across specifications and between samples. This study may thus be the first to document a differential labor market effect across personal contact types for Italy.

To test our second hypothesis of an association between native contacts and job attributes that facilitate regularization, we cautiously examine *Regular Job* and *Contract*, two variables designed to capture more stable employment relationships. Table 4 therefore reports the average marginal effects for the probability of having a regular job or employment contract for both the restricted extra-EU sample (columns 1 and 3, respectively) and the full sample (columns 2 and 4, respectively). All specifications include the full set of available controls<sup>14</sup> and account for selection into employment. To save space, we do not report the selection equation for employment probability because it mirrors Table 3 (with minor differences due to the exclusion from the sample of self-employed workers). Overall, the Table 4 results support H2: native contacts are more likely to be associated with immigrant employment in better quality occupations than ethnic contacts, who may actually reduce the probability of immigrant job contracts.

Table 4 about here

### **Additional Results**

In an alternative modeling approach, we use a bivariate probit model to estimate employment and documentation probabilities jointly as a function of personal contacts. Because computing marginal effects is trickier for this class of models, we report the estimated coefficients for documentation and

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<sup>14</sup> Given Durand et al.'s (2016) evidence of an association between being undocumented and the worst labor market outcomes, we also run a specification that includes individual legal status. Although the results are qualitatively similar, however, the number of undocumented immigrants with regular employment and/or an employment contract is very low, making the estimates more imprecise.

employment probabilities in Appendix Table 5 and Table 6, respectively. To facilitate comparison with the earlier findings reported in Table 2 and Table 3, respectively, these tables also list the coefficients estimate using simple probit models. Although in principle the bivariate probit model is more appropriate, in practical terms, as the two appendix tables underscore, the results are very similar to those obtained by estimating the two equations separately. The only difference is that in the legal status equation, the employment coefficient shrinks and is imprecisely estimated in the most saturated version of the bivariate probit model (last column of Table 5). Note, however, that in this case, the rho statistic becomes statistically no different from zero, and the joint model collapses into the two separate models (Cameron and Trivedi 2009).

One advantage of estimating the two models independently is that we can check the robustness of our labor market outcome results, including those for individuals from the EU countries. A greater number of data points also allows us to explore possible differential contact effects. In particular, we investigate the presence of gender differences in the social contact effect by augmenting the most saturated employment equation (corresponding to column 8, Table 3) using three interaction terms between gender and personal contacts.<sup>15</sup> Fig. 3 in the appendix summarizes the main results of this exercise by reporting the average marginal effects and 10% confidence intervals of personal contacts by gender. As the figure shows, the employment effect of ethnic contacts is particularly important for women, whereas the interaction with familial and native contacts is not significant at standard levels. This finding is in line with Aguilera's (2005) evidence that job search support positively affects women's earnings only when provided by nonfamily contacts. Such gender effects can be rationalized by noting that immigrant women work primarily in occupations for which the reference process is particularly important (e.g., domestic workers) because the jobs entail a high level of trust (Hondagneu-Sotelo 2001). A final exploration of all outcomes for the presence of differential effects

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<sup>15</sup> We also estimate separate regressions by gender, which yield qualitatively similar results.



by origin area identifies no statistical different effect, probably because such an analysis is severely constrained by the low number of observations. For the same reason, we are unable to identify personal contact gender effects for the other two outcomes: legal status and job attributes.

We test the robustness of our results by playing with immigrant permanence in Italy, testing particularly for any survivorship bias induced when personal contacts correlate with outmigration, in which case the bias would vary with time spent in Italy. A similar concern is any possible correlation between the variables of interest (documented status, labor market outcomes, and personal contacts) and the probability of accessing the intercept points at which data were collected, which should thus correlate with observed permanence in the host country (Devillanova 2008). As a sensitivity test, we restrict all analyses to recently arrived immigrants (<3 years) and to immigrants with  $Y_{sm} > 1$ , which latter also accounts for refugees not being allowed to work during the first 6 months after arrival. As appendix Fig. 4 illustrates, the effect of personal contacts on all outcomes is stable across all the different sample specifications, although our inability to directly address this issue with the available data suggests a need for caution in any causal interpretation of the parameters of interest.

## **Conclusions**

Because immigrants tend to experience substantial mobility across legal statuses (Vickstrom 2014), our study assesses the effect on this status of different personal contact types. In particular, we innovatively identify both the direct effects of personal contacts on the legal status and indirect labor market effects via employment probability and, conditional on being employed, job characteristics. This indirect labor market effect is especially relevant in countries like Italy, which tend to implement work-related legalization programs and mechanisms.

Our empirical analysis, which employs a unique dataset of documented and undocumented immigrants in the southern Italian region of Calabria, assesses whether native contacts are associated first with a higher documentation probability (once employment status is controlled for) and second

with job characteristics that facilitate access to regularization programs. As shown in Fig. 2, part (a), we do indeed identify a strong positive effect of native contacts, and to a lesser extent of familial contacts, on the probability of legal status. Our results also suggest that contacts with natives and family members provide immigrants with resources that facilitate access to legalization programs, such as better information about application procedures, and employment relationships that are more likely to result in the right to apply for legal status. Although unable to differentiate the actual channels, we do demonstrate that although neither family nor native contacts exert any significant employment effect, native contacts are particularly effective at assisting immigrants into better quality occupations, which tend to facilitate access to legalization programs (part (c)). Ethnic contacts, in contrast, tend to introduce immigrants to jobs with no such legalization potential and only indirectly shape the probability of legal status via a positive effect on employment probability (part (b)).

Fig. 2 about here

These results throw interesting new light on the process of migrants' legal and economic integration into a host country. They imply, for example, that the interplay between immigration policies and personal contacts could give rise to cumulative inequality. That is, immigrants without contacts (or with only ethnic contacts) will be less likely to access the right information and opportunities for legalization and end up in poorer quality jobs that lower their chances of acquiring or maintaining legal status. These negative personal contact effects are likely to be exacerbated in legal contexts that give employers a prominent role in the legalization procedure, which again underscores the importance of considering institutional frames when addressing the outcomes of social interaction. Our findings, for instance, point to unintended and even unforeseeable consequences of work-related regularization programs and mechanisms that policy makers should take into account when designing effective immigration policies. In revealing such potential consequences, our study joins a body of scholarship that highlights how ethnic capital, while initially

seeming an attractive and less costly solution, can limit socioeconomic mobility and lead to segregation (Portes 1998; Portes and Rumbaut 2001; Stack 1974).

Admittedly, however, the functioning of personal contacts is likely to be context specific, implying an urgent need to broaden the geographic scope of related research even in the face of serious data availability constraints. By conducting a quantitative analysis of an economically poor southern European region burdened by high migratory pressures and pervasive immigrant irregularity, we take an important first step in this direction. Not only is our study of legal status transitions and personal contacts particularly relevant for such environments, it lays a useful analytical foundation for future investigation.

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## Tables

**Table 1** Descriptive statistics

Variables	Extra-EU			$\Delta$	All Areas M [SD]
	Total M [SD]	Documented M [SD]	Undocumented M [SD]		
<i>Legal status</i>					
Documented	0.62				
<i>Labor Market Condition</i>					
Employed	0.73	0.88	0.48	†	0.75
Regular Job (if Employee)	0.72	0.93	0.23	†	0.70
Contract (if Employee)	0.71	0.88	0.20	†	0.70
<i>Personal Contacts</i>					
Native	0.09	0.11	0.06		0.11
Familial	0.33	0.33	0.32		0.32
Ethnic	0.35	0.35	0.33		0.36
<i>Individual Characteristics</i>					
Age	35 [9.84]	38 [9.39]	30 [8.54]	†	35 [9.59]
Female	0.45	0.43	0.49		0.51
Married	0.50	0.58	0.38	†	0.49
Child	0.59	0.68	0.44	†	0.58
High Education	0.41	0.44	0.37		0.45
Economic Motivation	0.66	0.75	0.51	†	0.69
<i>Years since Migration</i>					
Ysm < 1	0.12	0.03	0.26	†	0.14
1 < Ysm < 3	0.24	0.12	0.43	†	0.29
Ysm > 3	0.64	0.85	0.31	†	0.57
<i>Areas of Origin</i>					
Schengen Area					0.29
Southern America	0.03	0.02	0.04		0.02
Africa	0.42	0.42	0.42		0.30
Eastern Europe	0.40	0.40	0.40		0.28
Asia	0.15	0.16	0.14		0.11
<i>N</i>					
Employees	632	390	242		911
Regular job, if Employee	367	257	110		588
Contract, if Employee	367	257	110		588
Contract, if Employee	324	243	81		509

Source: Author calculations of EQUAL survey data.

†denotes a difference between documented and undocumented immigrants that is significant at least at 5%.

**Table 2** Documentation probability: AMEs

Variables	(1)	(2)	(3)	(4)	(5)
<i>Personal Contacts (Ref: No Contact)</i>					
Native	0.204*** [0.071]	0.235*** [0.065]	0.215*** [0.059]	0.216*** [0.051]	0.189*** [0.050]
Familial	0.088* [0.053]	0.183*** [0.046]	0.160*** [0.042]	0.122*** [0.038]	0.101*** [0.039]
Ethnic	0.095* [0.053]	0.077* [0.046]	0.019 [0.044]	-0.004 [0.040]	-0.028 [0.040]
Female		-0.080** [0.039]	-0.050 [0.036]	-0.046 [0.033]	-0.041 [0.033]
Age		0.020*** [0.002]	0.015*** [0.002]	0.009*** [0.002]	0.009*** [0.002]
High Education		0.085** [0.037]	0.052 [0.035]	0.011 [0.031]	0.013 [0.031]
Married		0.020 [0.047]	0.015 [0.043]	-0.014 [0.037]	-0.020 [0.036]
Child		-0.009 [0.050]	-0.000 [0.047]	-0.049 [0.040]	-0.044 [0.038]
Economic Motivation		0.175*** [0.043]	0.135*** [0.040]	0.132*** [0.036]	0.133*** [0.037]
Employment			0.297*** [0.032]	0.222*** [0.032]	0.201*** [0.032]
<i>Years since Migration (Ref: Ysm &gt; 3)</i>					
Ysm < 1				-0.501*** [0.063]	-0.472*** [0.065]
1 < Ysm < 3				-0.375*** [0.046]	-0.363*** [0.046]
Impersonal Contacts					0.058*** [0.020]
Unemployment Rate					-0.277** [0.140]
<i>Area Dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Log pseudolikelihood</i>	-416.5	-340.4	-306.8	-253	-247.8
<i>Pseudo-R<sup>2</sup></i>	0.001	0.191	0.271	0.399	0.411
<i>N</i>	632	632	632	632	632

*Notes:* Each column reports the average marginal effects from probit estimates of documentation probability for the restricted sample of non-EU immigrants. In column 1 the probability that an individual is documented is regressed on personal contacts (native, familial, and ethnic, with “no contacts” as the excluded category), and origin area fixed effects (not shown). Columns 2-5 add in additional control variables stepwise: gender, age, age squared, education, marital status, an indicator for having children, an indicator variable equal to 1 if migration was economically motivated (column 2), and another equal to 1 if the individual is employed (column 3), years since migration (column 4), (log)total number of immigrants in province  $p$  from the individual  $i$ 's origin country over the total number of immigrants in that province, and (log)provincial unemployment rate (column 5). The pseudo R-squared is estimated using MacFadden's formula. Robust standard errors are in parentheses; \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , and \* $p < 0.1$ .

**Table 3** Employment probability: AMEs

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Extra-EU	All Areas	Extra-EU	All Areas	Extra-EU	All Areas	Extra-EU	All Areas
<i>Personal Contacts (Ref: No Contact)</i>								
Native	0.010 [0.075]	0.053 [0.057]	0.033 [0.071]	0.041 [0.057]	0.031 [0.068]	0.046 [0.056]	0.011 [0.067]	0.034 [0.057]
Familial	-0.001 [0.050]	0.023 [0.042]	0.064 [0.048]	0.071* [0.041]	0.048 [0.047]	0.050 [0.041]	0.013 [0.046]	0.032 [0.041]
Ethnic	0.172*** [0.046]	0.168*** [0.038]	0.173*** [0.044]	0.169*** [0.037]	0.160*** [0.043]	0.166*** [0.037]	0.121*** [0.043]	0.149*** [0.037]
Female			-0.097*** [0.038]	-0.052* [0.031]	-0.108*** [0.037]	-0.054* [0.030]	-0.109*** [0.036]	-0.051* [0.030]
Age			0.014*** [0.002]	0.011*** [0.002]	0.011*** [0.002]	0.008*** [0.002]	0.009*** [0.002]	0.007*** [0.002]
High Education			0.091** [0.035]	0.106*** [0.028]	0.065* [0.035]	0.093*** [0.028]	0.069** [0.033]	0.099*** [0.028]
Married			0.032 [0.045]	0.070* [0.038]	0.014 [0.044]	0.062 [0.038]	0.013 [0.042]	0.055 [0.038]
Child			-0.033 [0.047]	-0.084** [0.038]	-0.054 [0.046]	-0.104*** [0.039]	-0.049 [0.044]	-0.103*** [0.038]
Economic Motivation			0.101** [0.040]	0.116*** [0.034]	0.075** [0.038]	0.108*** [0.033]	0.059 [0.036]	0.099*** [0.033]
<i>Years since Migration (Ref: Ysm &gt; 3)</i>								
Ysm < 1					-0.387*** [0.065]	-0.255*** [0.048]	-0.325*** [0.068]	-0.227*** [0.049]
1 < Ysm < 3					-0.060 [0.042]	-0.081** [0.034]	-0.033 [0.040]	-0.078** [0.034]
Impersonal Contacts							0.109*** [0.020]	0.056*** [0.018]
Unemployment Rate							-0.104 [0.161]	-0.052 [0.143]
Area Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Log pseudolikelihood</i>	-356.8	-491.6	-318.1	-452.8	-297.4	-437.6	-284.2	-433.1
<i>Pseudo-R<sup>2</sup></i>	0.038	0.039	0.143	0.115	0.198	0.144	0.234	0.153
<i>N</i>	632	911	632	911	632	911	632	911

*Notes:* Each column reports probit estimates of employment probability with results for the restricted sample of non-EU immigrants in odd-numbered columns and those for all available observations in even-numbered columns. In columns 1 and 2 the probability that the individual employment probability is regressed on personal contacts (native, familial, and ethnic, with “no contact” as the excluded category) and origin area fixed effects (not shown). Columns 2–8 add in additional control variables stepwise: gender, age, age squared, education, marital status, an indicator for having children, an indicator variable equal to 1 if migration was economically motivated (column 3 and 4), years since migration (column 5 and 6), (log)total number of immigrants in province  $p$  from individual  $i$ 's origin country over the total number of immigrants in that province, and (log)provincial unemployment rate (columns 7 and 8). The pseudo R-squared is estimated using MacFadden's formula. Robust standard errors are in parentheses; \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , and \* $p < 0.1$ .

**Table 4** Job attributes: AMEs from probit models with Heckman correction

Variables	(1)	(2)	(3)	(4)
	Regular Job Extra-EU	Regular Job All Areas	Contract Extra-EU	Contract All Areas
<i>Personal Contacts (Ref: No Contact)</i>				
Native	0.132* [0.071]	0.123* [0.063]	0.070 [0.049]	0.002 [0.058]
Familial	-0.043 [0.053]	-0.031 [0.048]	-0.100 [0.062]	-0.102* [0.055]
Ethnic	-0.030 [0.052]	-0.016 [0.047]	-0.142** [0.057]	-0.158*** [0.049]
Female	-0.010 [0.045]	-0.017 [0.037]	0.002 [0.046]	-0.057 [0.045]
Age	0.009*** [0.002]	0.007*** [0.002]	0.006 [0.004]	0.011*** [0.004]
High Education	0.096** [0.043]	0.150*** [0.035]	0.018 [0.046]	0.062 [0.051]
Economic Motivation	0.063 [0.049]	0.070* [0.040]	-0.042 [0.048]	-0.060 [0.045]
<i>Years since Migration (Ref: Ysm &gt; 3)</i>				
Ysm < 1	-0.397*** [0.062]	-0.316*** [0.050]	-0.012 [0.090]	-0.101 [0.107]
1 < Ysm < 3	-0.201*** [0.050]	-0.201*** [0.040]	-0.105* [0.060]	-0.132** [0.058]
Impersonal Contacts	0.081*** [0.029]	0.029 [0.024]	-0.021 [0.037]	-0.030 [0.031]
Unemployment Rate	-0.018 [0.209]	0.021 [0.186]	0.118 [0.218]	0.116 [0.203]
Area Dummies	Yes	Yes	Yes	Yes
<i>N</i>	540	815	497	736

*Notes:* Each column reports estimates of a maximum-likelihood probit model for job attributes with sample selection into employment. Self-employed immigrants are dropped from the sample. The dependent variables are the probability of regular employment (columns 1 and 2) and the probability of an employment contract (columns 3 and 4). The controls are personal contacts (native, familial, and ethnic, with “no contact” as the excluded category), gender, age, age squared, education, an indicator variable equal to 1 if migration was economically motivated, time since migration, (log)total number of immigrants in province  $p$  from individual  $i$ 's origin country over the total number of immigrants in that province, and (log)provincial unemployment rate (column 5). The selection equation for the employment probability corresponds to the most saturated specification (as in columns 7 and 8, Table 3). The identification instruments are marital status and having children. In columns 1 and 3, the sample is further restricted to extra-EU immigrants. Robust standard errors are in parentheses; \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , and \* $p < 0.1$ .

Figures

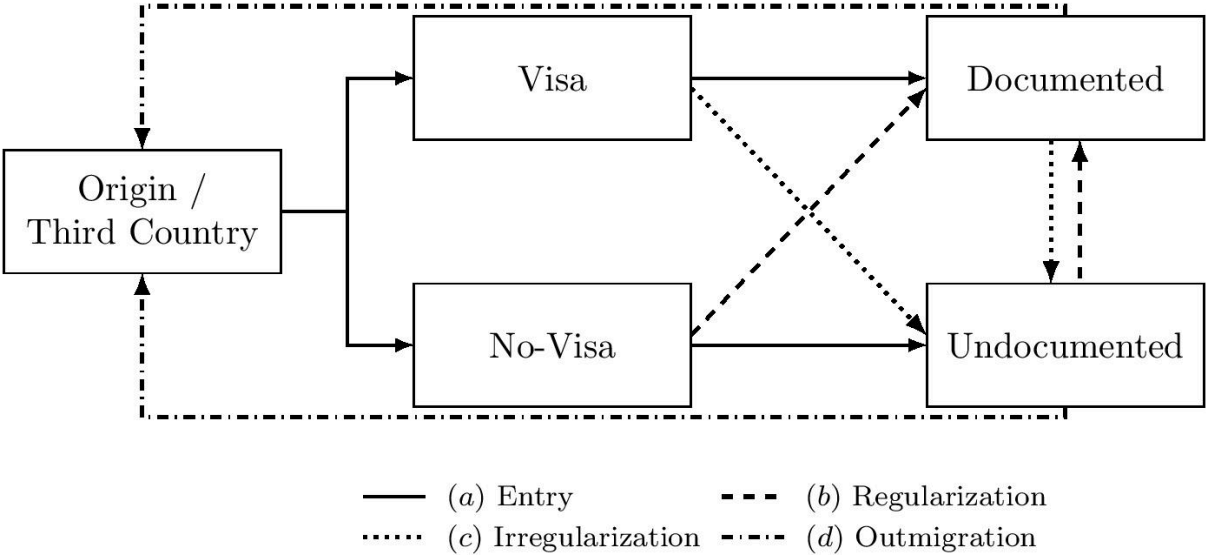
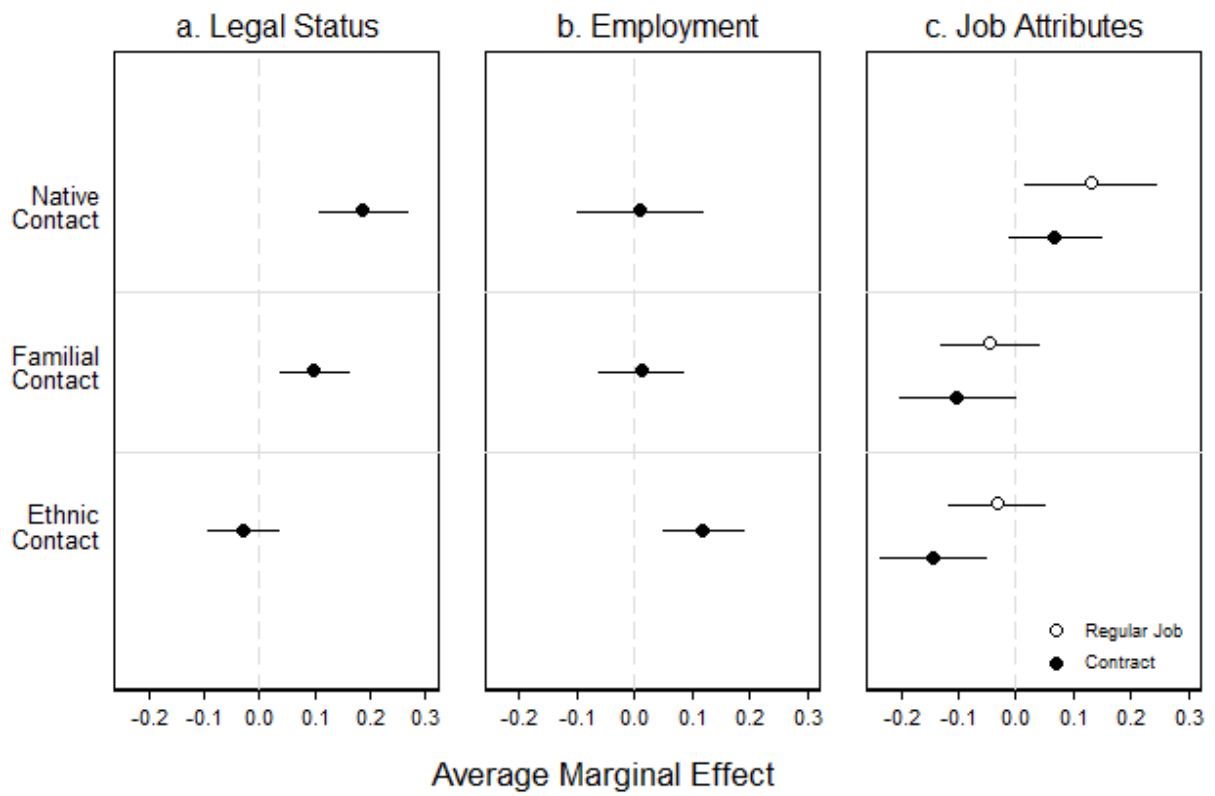


Fig. 1 Immigrant transitions across legal statuses





**Fig. 2** Summary of personal contact effects based on the most saturated models. For ease of comparison, each panel plots the average marginal effects and 10% confidence interval of personal contacts for all outcomes studied using the restricted extra-EU sample (corresponding to column 5, Table 2; column 7, Table 3; columns 1 and 3, Table 4).

## Appendix

**Table 5** Probit and bivariate probit coefficients of documentation probability

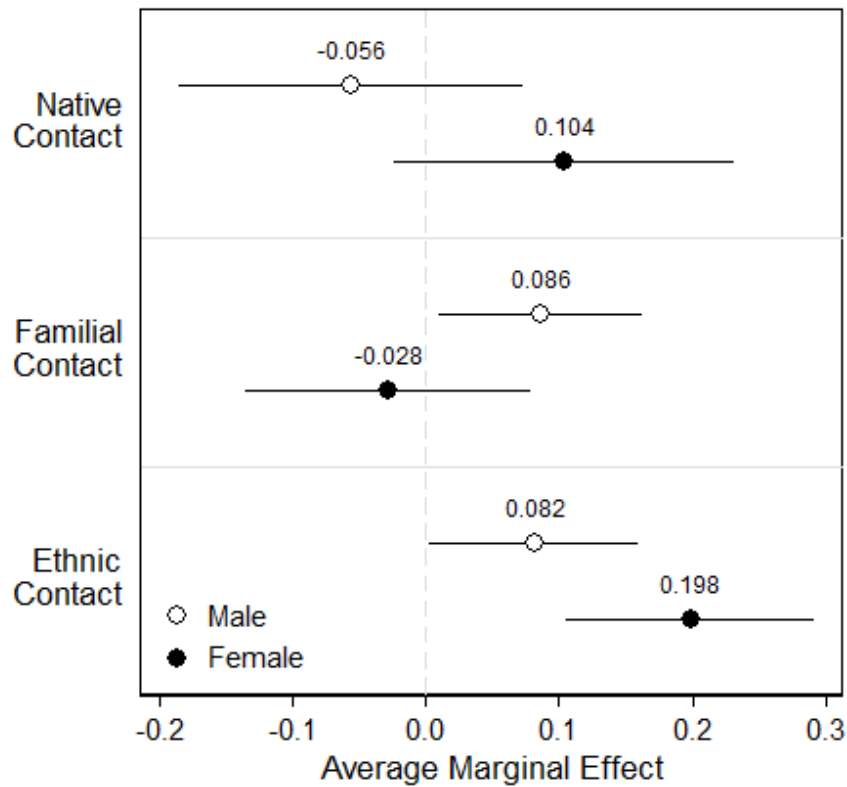
Variables	(1) Probit	(2) Biprobit	(3) Probit	(4) Biprobit	(5) Probit	(6) Biprobit	(7) Probit	(8) Biprobit	(9) Probit	(10) Biprobit
<i>Personal Contacts (Ref: No Contact)</i>										
Native	0.554*** [0.208]	0.555*** [0.209]	0.793*** [0.240]	0.782*** [0.241]	0.840*** [0.252]	0.800*** [0.257]	1.070*** [0.273]	1.057*** [0.275]	0.967*** [0.275]	0.966*** [0.275]
Familial	0.227* [0.136]	0.222 [0.137]	0.599*** [0.155]	0.602*** [0.154]	0.600*** [0.161]	0.552*** [0.171]	0.562*** [0.177]	0.548*** [0.179]	0.479*** [0.183]	0.480*** [0.182]
Ethnic	0.244* [0.135]	0.243* [0.136]	0.243* [0.146]	0.244* [0.146]	0.067 [0.154]	-0.018 [0.171]	-0.017 [0.171]	-0.055 [0.179]	-0.123 [0.175]	-0.103 [0.184]
Female			-0.263** [0.128]	-0.284** [0.128]	-0.183 [0.132]	-0.125 [0.145]	-0.206 [0.147]	-0.176 [0.154]	-0.189 [0.151]	-0.209 [0.158]
Age			0.165*** [0.040]	0.169*** [0.039]	0.123*** [0.043]	0.090 [0.057]	0.089** [0.045]	0.077 [0.050]	0.082* [0.047]	0.089* [0.052]
Age <sup>2</sup>			-0.001*** [0.001]	-0.002*** [0.000]	-0.001* [0.001]	-0.001 [0.001]	-0.001 [0.001]	-0.001 [0.001]	-0.001 [0.001]	-0.001 [0.001]
High Education			0.280** [0.124]	0.278** [0.123]	0.192 [0.127]	0.138 [0.137]	0.050 [0.141]	0.032 [0.141]	0.062 [0.142]	0.074 [0.143]
Married			0.064 [0.154]	0.071 [0.153]	0.056 [0.156]	0.050 [0.152]	-0.062 [0.171]	-0.061 [0.169]	-0.094 [0.169]	-0.096 [0.170]
Child			-0.031 [0.167]	-0.032 [0.167]	-0.000 [0.174]	0.014 [0.172]	-0.230 [0.195]	-0.214 [0.191]	-0.212 [0.189]	-0.219 [0.189]
Economic Motivation			0.543*** [0.129]	0.533*** [0.130]	0.470*** [0.133]	0.401*** [0.151]	0.559*** [0.148]	0.536*** [0.152]	0.576*** [0.152]	0.586*** [0.153]
<i>Years since Migration (Ref: Ysm &gt; 3)</i>										
Ysm < 1							-1.722*** [0.221]	-1.617*** [0.318]	-1.657*** [0.231]	-1.709*** [0.282]
1 < Ysm < 3							-1.284*** [0.158]	-1.262*** [0.166]	-1.279*** [0.161]	-1.284*** [0.160]
Impersonal Contacts									0.265*** [0.094]	0.287** [0.112]
Unemployment Rate									-1.280** [0.651]	-1.298** [0.652]
Employment					1.093*** [0.138]	1.600*** [0.527]	1.004*** [0.155]	1.248*** [0.473]	0.929*** [0.159]	0.761 [0.512]
Area Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-Pseudolikelihood	-416.5	-712.4	-340.4	-625.8	-306.8	-624.6	-253	-550.3	-247.8	-532
Wald Test for $\rho=0$ ( $P > \chi^2$ )		0.000		0.000		0.382		0.598		0.730
N	632	632	632	632	632	632	632	632	632	632

*Notes:* The odd-numbered columns report the coefficients of probit estimates of documentation probability (corresponding to the AMEs reported in Table 2), while the even-numbered columns report bivariate probit regression estimates for legal status estimated jointly with employment probability (reported in Table 6). The sample is restricted to non-EU immigrants. In columns 1 and 2, documentation probability is regressed on personal contacts (native, familial, and ethnic, with “no contacts” as the excluded category) and origin area fixed effects (not shown). Columns 3–10 add in additional control variables stepwise: gender, age, age squared, education, marital status, an indicator for having children, an indicator variable equal to 1 if migration was economically motivated (columns 3 and 4), an indicator equal to 1 if the individual is employed (columns 5 and 6), years since migration (columns 7 and 8), (log)total number of immigrants in province  $p$  from individual  $i$ 's original country over the total number of immigrants in that province, and (log)provincial unemployment rate (columns 9 and 10). Robust standard errors are in parentheses; \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , and \* $p < 0.1$ .

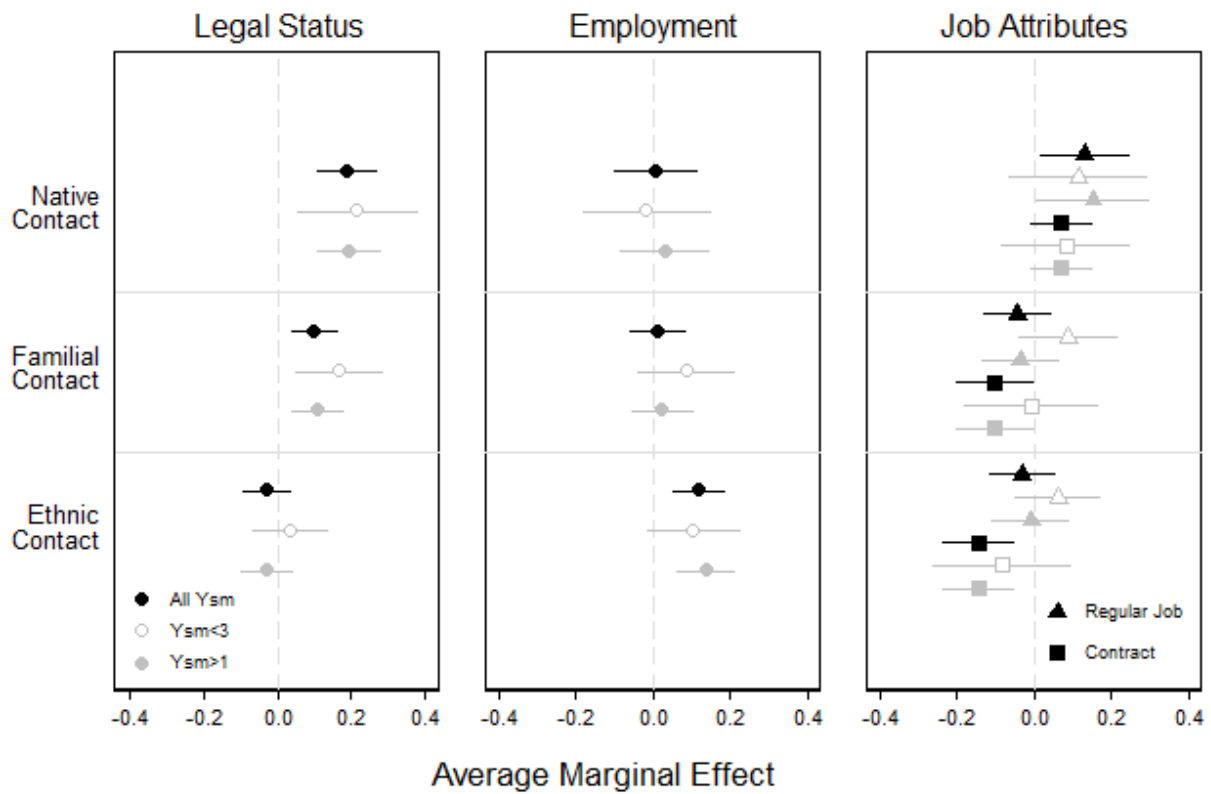
**Table 6** Probit and bivariate probit coefficients of employment probability

Variables	(1) Probit	(2) Biprobit	(3) Probit	(4) Biprobit	(5) Biprobit	(6) Probit	(7) Biprobit	(8) Probit	(9) Biprobit
<i>Personal Contacts (Ref: No Contact)</i>									
Native	0.029 [0.208]	0.038 [0.208]	0.102 [0.222]	0.114 [0.221]	0.092 [0.224]	0.102 [0.229]	0.098 [0.230]	0.038 [0.241]	0.040 [0.242]
Familial	-0.002 [0.139]	-0.008 [0.139]	0.203 [0.152]	0.204 [0.153]	0.200 [0.151]	0.161 [0.158]	0.161 [0.158]	0.048 [0.164]	0.048 [0.164]
Ethnic	0.561*** [0.147]	0.561*** [0.147]	0.612*** [0.153]	0.599*** [0.151]	0.614*** [0.153]	0.613*** [0.162]	0.615*** [0.163]	0.490*** [0.170]	0.489*** [0.170]
Female			-0.342** [0.134]	-0.351*** [0.133]	-0.333** [0.135]	-0.409*** [0.140]	-0.405*** [0.142]	-0.434*** [0.144]	-0.436*** [0.145]
Age			0.164*** [0.038]	0.165*** [0.038]	0.162*** [0.038]	0.148*** [0.039]	0.148*** [0.039]	0.147*** [0.040]	0.148*** [0.041]
Age <sup>2</sup>			-0.002*** [0.000]	-0.002*** [0.000]	-0.002*** [0.000]	-0.002*** [0.000]	-0.002*** [0.000]	-0.002*** [0.001]	-0.002*** [0.001]
High Education			0.324** [0.129]	0.324** [0.130]	0.317** [0.130]	0.246* [0.134]	0.243* [0.134]	0.276** [0.134]	0.278** [0.134]
Married			0.112 [0.158]	0.095 [0.160]	0.122 [0.159]	0.054 [0.167]	0.056 [0.168]	0.050 [0.168]	0.049 [0.168]
Child			-0.118 [0.173]	-0.113 [0.174]	-0.121 [0.172]	-0.213 [0.186]	-0.214 [0.187]	-0.201 [0.187]	-0.199 [0.188]
Economic Motivation			0.341*** [0.129]	0.324** [0.129]	0.347*** [0.129]	0.275** [0.133]	0.277** [0.133]	0.228* [0.135]	0.226* [0.136]
<i>Years since Migration (Ref: Ysm &gt; 3)</i>									
Ysm < 1						-1.189*** [0.193]	-1.185*** [0.193]	-1.049*** [0.202]	-1.052*** [0.204]
1 < Ysm < 3						-0.219 [0.148]	-0.219 [0.148]	-0.127 [0.151]	-0.128 [0.151]
Impersonal Contacts								0.435*** [0.082]	0.437*** [0.083]
Unemployment Rate								-0.413 [0.640]	-0.399 [0.647]
Area Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employment Endogenous to Legal Status		No		No	Yes		Yes		Yes
<i>Log-pseudolikelihood</i>	-356.8	-712.4	-318.1	-625.8	-624.6	-297.4	-550.3	-284.2	-532
<i>Wald Test for <math>\rho=0</math> (<math>P &gt; \chi^2</math>)</i>		0.000		0.000	0.382		0.598		0.730
<i>N</i>	632	632	632	632	632	632	632	632	632

*Notes:* Columns 1, 3, 6, and 8 report the coefficients of probit estimates of employment probability (corresponding to the AMEs reported in Table 3), and columns 2, 4, 5, 7, and 9 report bivariate probit estimates of legal status estimated jointly with employment probability (reported in Table 5). The sample is restricted to non-EU immigrants. In columns 1 and 2, individual employment probability is regressed on personal contacts (native, familial, and ethnic, with “no contact” as the excluded category) and origin area fixed effects (not shown). Columns 3–9 add in additional control variables stepwise: gender, age, age squared, education, marital status, an indicator for having children, an indicator variable equal to 1 if migration was economically motivated (columns 3 and 4), years since migration (columns 6 and 7), (log)total number of immigrants in province  $p$  from individual  $i$ 's origin country over the total number of immigrants in that province, and (log)provincial unemployment rate (columns 9 and 10). The results in column 5 differ from those in column 4 in that the equation for legal status includes an indicator equal to 1 if the individual is employed (see Table 5). Robust standard errors are in parentheses; \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , and \* $p < 0.1$ .



**Fig. 3** Average marginal effects of the interaction between personal contacts and gender. Specifically, the figure reports the average marginal effect of having a personal contact for males (white circles) and females (black circles). The associated bars show 10% confidence intervals. We obtain the estimates by fitting Equation 1 for employment probability augmented by three interaction terms between gender and personal ties. The dependent variable is the probability of an individual being employed. The controls are an indicator for the presence of a personal contact (native, familial, or ethnic, with “no contact” as the excluded category), a dummy for female, three interaction terms between female and personal contact, individual characteristics (origin area, age, age squared, education, marital status, an indicator for having children, and an indicator variable equal to 1 if migration was economically motivated),  $(\log)\text{total number of immigrants in province } p \text{ from individual } i\text{'s origin country over the total number of immigrants in that province}$ , and  $(\log)\text{unemployment rate}$ .



**Fig. 4** Marginal effects of personal contacts on restricted subsamples by length of residence. Each panel plots the average marginal effects and 10% confidence interval of personal contacts for all outcomes studied for different subsamples of extra-EU immigrants based on permanence in Italy, denoted by different colors (specifications correspond to those in column 5, Table 2; column 7, Table 3; columns 1 and 3, Table 4),